Rational Strategic Investment Decisions

Rationality as a part of strategic investment decisions in corporate contexts.

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Abstract

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Key Words:	Strategic Investment Decisions, Strategic Decision-Making, Rationality, Behavioural Finance, Financial Bias
Purpose:	The purpose of this master thesis is to examine the driving forces of SID in corporate contexts. The central purpose is to develop an extended framework based on the framework by Carr, Kolehmainen & Mitchell (2010) that will portray a better understanding of biases and heuristics and their influences on SID. The secondary aim of this thesis is to update the financial and strategic aspects of the framework defined by Carr, Kolehmainen & Mitchell (2010).
Methodology:	The study is an explorative mixed methods study and employs a 3-step-approach. Firstly, based on a structured literature review a preliminary framework is developed. Secondly, empirical findings are gathered with a mixed-method comparative case study which uses a self-completion questionnaire and follow-up, semi-structured interviews. Thirdly, the empirical findings are used to validate and update the preliminary framework to an extended framework.
Theoretical Perspective:	The structured literature review is based on an overall view of strategic and financial considerations of SID, the contextual framework of Carr, Kolehmainen and Mitchell (2010), behavioural finance in particular biases and heuristics, and finally a preliminary extended framework which is built on the complete gathered theoretical perspective.
Empirical Foundation:	The quantitative and qualitative data for this master thesis was gathered through a structured literature review, self-completion questionnaire where the sample had 16 respondents, and through semi-structured interviews. The interview's purpose acted to support and verify the data gathered from the self-completion questionnaire.
Conclusions:	This master thesis identifies the degree of rationality and in particular biases and heuristics in SID and its connection to strategic and financial considerations. This master thesis enhanced the framework by Carr, Kolehmainen & Mitchell (2010). The framework is now better capable understanding the differences of SID in practice.

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1 Introduction

1.1 Background

Strategic investment decisions (SID) have been of particular concern in business research. Its importance in the context of survival and long-term success of businesses cannot be overemphasised. They are part of the overall strategy of a company and serve as a tool to create sustainable competitive advantages through *strategic positioning* (Porter, 1985, 1996). SID are a central part in the execution of generic strategies that achieve sustainable competitive advantages in the market, whether it is through focusing on *cost leadership, differentiation* or *focus* strategies (Porter, 1985). Strategic investments *"involve significant long-term financial commitments, slow-to-materialise benefits and high levels of uncertainty"* (Northcott & Alkaraan, 2007, p. 199).

Research on this topic has focused on strategic and financial aspects as major influences on SID making processes. The use and success of different capital budgeting techniques in practice is well examined. Economic budgeting techniques as discounted cash flow (DCF) methods have the highest use in Anglo-Saxon countries (Arnold & Hatzopoulos, 2000; Graham & Harvey, 2001) whereas countries such as Germany and Japan focus to a greater extent on strategic considerations (Carr, 2005). Financial research has shown the limitations of DCF techniques in SID making, because of their uncertain influence and relation to corporate strategy (Adler, 2000; Butler et al. 1991; Chen 1995). Hence, research has suggested focusing on combining financial and strategic considerations in investment appraisals (Adler, 2000; Shank & Govindarajan, 1993), and demands to set SID into relation to contextual factors for better understanding (Haka, 1987; Slagmulder, Bruggeman & Wassenhove, 1995; Verbeeten, 2006).

Research has followed that line of argumentation. Northcott & Alkaraan (2013) examined the influence of contextual factors on SID making processes by focusing on the three dimensions *procedural rationality, strategy formulation* and *political behaviour.* Carr, Kolehmainen & Mitchell (2010) answered this research limitation by the development of a contextual framework for understanding SID, that classifies companies into different types which are *Market Creators*, *Refocusers*, *Restructurers*, and *Value Creators*. This framework is of high importance in this master thesis.

1.2 Problematization

The work of Northcott & Alkaraan (2013) and Carr, Kolehmainen & Mitchell (2010) have started closing the gap of understanding contextual factors in their influences on SID. However, one particular field of research that has become more important over the years is the field of *behavioural finance.* This discipline has examined the presence of psychological factors in the investment decisions processes of individual market participants by relaxing the assumption that individual market participants behave rationally (Barberis & Thaler, 2002). Kahneman and Tversky (1974) showed as one of the first researchers the influences of biases and heuristics on individual decision making. *Behavioural finance* is well examined for individual investors in the environment of stock trading and capital markets (Barberis & Thaler, 2002; Kumar & Goyal, 2016).

Dean and Sharfman (1993) and Northcott and Alkaraan (2013) touched the field of rationality in SID processes. Furthermore, Kahneman, Lovallo & Sibony (2011) presented biases and heuristics that could occur in decision-making processes. However, the study of biased decision-making in corporate SID contexts is scant. This thesis enhances the current research landscape by adding *rationality* and in particular biases and heuristics to the understanding of SID. Building on theory we are deriving an extended framework, based on the framework by Carr, Kolehmainen & Mitchell (2010) that is afterwards tested against our empirical findings.

1.3 Purpose

The purpose of this master thesis is to better understand SID and to examine the driving forces of SID in corporate contexts. It focuses on a comprehensive analysis of this topic by considering past studies and additionally, by enhancing the current research landscape. The central purpose is to develop an extended framework based on the framework by Carr, Kolehmainen & Mitchell (2010) that will portray a better understanding and examination of biases and heuristics and their influences on SID and how they relate to strategic and financial considerations. The secondary aim of this thesis is to update the financial and strategic aspects of the framework defined by Carr, Kolehmainen & Mitchell (2010). Our central research question is as follows:

> *"To what extent is rationality, in particular biases and heuristics, part of strategic investment decisions in corporate contexts and how does rationality relate to strategic and financial considerations?"*

1.4 Contribution

The contribution of this master thesis is to update and extend the contextual framework developed by Carr, Kolehmainen and Mitchell (2010) by providing a contribution to literature and an empirical contribution. Since their framework focuses solely on strategic and financial considerations on SID in the context of market orientation and shareholder influence, we argue that this master thesis helps to better understand SID by adding *rationality* as a new characteristic to this framework. The study will also show used capital budgeting techniques for SID. Moreover, the study of *behavioural finance* in the context of capital markets has grown in recent years. We argue that the examination of biases and heuristics is key to better understand the SID of companies. Furthermore, this master thesis updates the findings of Carr, Kolehmainen and Mitchell (2010) from a literature perspective generating a preliminary framework. Additionally, this framework is tested and updated with empirical data. This thesis has a comparative nature by searching for differences between different industries which enhances the contribution. Combining both the preliminary framework based on literature and applying empirical data will give an enhanced updated framework.

1.5 Outline

This report is structured as follows. The research approach is described and discussed in the *methodology section*. After introducing the research approach the *theoretical foundations* of SID are laid. In particular, the strategic, financial and behavioural finance aspects are described. At the end of the theory section, we present a suggestion for a preliminary extended framework by Carr, Kolehmainen & Mitchell (2010). Thereafter, the results of the empirical data are presented and discussed in the *empirical findings* and *discussion section* and the preliminary extended framework is tested and validated against the findings. In the end, we summarize our main findings, compare them to the research landscape, finalize the extended framework, and provide a suggestion for future research.

2 Methodology

Within this chapter, the research design of this master thesis is explained. The chapter provides insights into the process of chosen methods and data collection. The methodology chapter is built on the following sub-chapters: research approach, structured literature review, comparative case study, validation, quality of the research, limitations, and ethical considerations.

2.1 Research Approach

The research approach of this master thesis had an explorative character and was divided into three different steps of how to answer the research question. Firstly, a structured literature review about SID was conducted and to build a preliminary framework. Secondly, a comparative case study was employed to gather empirical data about SID. The comparative study was a mixed method study which combined a self-completion questionnaire and follow-up interviews. Thirdly, the empirical findings were used to test and update the preliminary framework to an updated framework.

2.2 Structured Literature Review

A structured literature review was conducted to gain a holistic overview of the drivers of SID and of the framework by Carr, Kolehmainen and Mitchell (2010) in particular. Relevant topics, frameworks, and theories were examined in order to create a greater understanding and provide knowledge to develop an extended preliminary framework. The studied literature consisted of theories, concepts and empirical findings around SID and behavioural finance. All literature used in the thesis consists of academic articles, high-cited peer reviewed articles, and book chapters enabling to present appropriate data sources and to create a well-rounded review (Wolfswinkel, Furtmueller & Wilderom, 2013).

The following table summarizes the aspects of the structured literature review.

Libraries and Electronic Databases	**Search Terms**
● Lund University LUSEM (Lund University School of Economics and Management) library, ● LUBSearch (Ebscohost) ● Google Scholar	● “strategic investments decisions” ● “decision making” ● “decision making in corporate context” ● “investment decisions” ● “behavioural finance” ● “rationality in SID” ● “rationality in decision-making” ● “financial biases”

Table 1: Keywords

2.3 Comparative Case Study

In essence, a case study investigates contemporary phenomena. It is intended to understand a real-world case when boundaries of the phenomenon are not evident to distinguish between (Yin, 2014). Yin (2014) describes that multiple cases where different sets of data are used can be defined as a comparative case study. Our research was comparative due to the fact that we were searching for comparisons between companies, industries and countries. However, the countries are not the primary focus. The comparative case study is based on a mixed methods study which gave a holistic research approach and provides the thesis with a more rounded and well-pictured overview according to Bell, Bryman & Harley (2019). Yin (2014) showed similar views to Bell, Bryman & Harley (2019) and adds that mixed methods enables the researchers to address more complicated research questions and gather a stronger array of data than a single research method.

2.3.1 Sampling & Saturation

The researchers selected participants based on *purposeful sampling* (Patton, 2015). Certain criteria were relevant for the selection of participants namely job title, country of origin, and industry (Bell, Bryman & Harley, 2019). The starting point of this thesis was contacting business contacts from previous experiences.

The research participants were selected by the search function on *LinkedIn* and *Xing* (German equivalent). Key was the job-title of the contacts. The following job-titles were defined to select participants: "CEO", CFO", "Managing Director", "Head of Controlling" or an equivalent title in the native language from one of us. Furthermore, the participants were asked about additional contacts that are suitable to take place in the study. The researchers of this paper decided on their appropriateness before these additional contacts were asked to take place in the study. The researchers intended to build a sample by gathering data from five to ten companies from each Germany, The Netherlands, and Sweden. However, certain limitations made it not possible to reach the desirable numbers. These numbers were based on a hypothetical basis before collecting the data.

The concept of *theoretical saturation* keeps on until enough data was collected for a certain category or complete set (Bell, Bryman & Harley, 2019). In the case of this study, saturation is hard to achieve. It was intended with this paper to reach an optimal theoretical saturation but due to certain limitations this was not possible. There are many factors that influence how organizations assess their SID. Firm size, resources, and the industry play an influence on how participants answer the questions for the questionnaire. It is possible that there are variations when comparing answers from a CEO of a firm of fifteen employees and a CEO of a firm of 2000 employees. Another possibility is that a firm with less resources might not have the capacity to judge SID on proper financial analysis and potentially rationality is more likely to be used.

After reaching more than ten participants in the study, participants were grouped according to the preliminary framework (found in section 3.8). The *Market Creator* and *Refocusers* dimension became saturated but the other two types *Restructurers* and *Value Creators* did not have many participants. This is due to the limitation that participants had to identify themselves on market context and performance context in the questionnaire. Hence, it was not possible for the researchers to identify this type and try to force it to reach saturation. It can be argued that more participants should have been added to the study, but the limitation of time and purposeful sampling have to be taken into account. Furthermore, the initial was to also showcase a comparison with countries but due to limited data from each country it was chosen not to pursue this comparison.

2.3.2 Data Collection

The self-completion questionnaire consisted of a quantitative and qualitative data gathering. The questionnaire was pre-tested with interviews beforehand and the final questionnaire was sent out due to validate by future participants. The data of the questionnaire was enhanced with data from follow-up semi-structured interviews. The self-completion questionnaire was developed with the web-survey tool *Google Forms* (Bell, Bryman & Harley, 2019). The primary source of data in the self-completion questionnaire was quantitative data. Furthermore, open questions were included to retrieve more in-depth data.

The complete sample was 16 respondents to the self-completion questionnaire where two of those were pre-interviewed and three respondents were followed-up with semi-structured interview. From the 16 respondents ten were from Germany, four respondents from The Netherlands, and two respondents from Sweden. We ended up reaching out to 18 potential candidates in Germany, nine potential candidates in the Netherlands and eight potential candidates in Sweden. In total reaching out to 35 potential candidates. In the end, giving the total sample a response rate of 45%. The self-completion questionnaire was developed in week 13 (March) 2020. It was sent out to the pre-testers in week 14 (April) 2020 and interviews were conducted in that same week. After adjusting and verifying the questionnaire was sent out in the weeks 15 - 19 of 2020. The follow-up interviews on the basis of the questionnaire were conducted in week 18, and 19 of 2020.

The table below shows an overview of the total participants in the sample. It shows which participant was involved in the pre-test interviews, self-completion questionnaire, and the semi-structured follow up interviews.

Company Shortcut	**Title**	**Industry**	**Country of Origin**	**Employees**	**Pre-Interview**	**Question-naire**	**Inter view**
C1	Engagement Manager	Energy	Germany	75	X	X	
C2	Business Development Manager	Publishing	Sweden	155		X	X
C3	Managing Director	Agricultural	The Netherlands	15	X	X	
C4	Managing Director	Publishing	Germany	60		X	
C5	Head of Production & CTO	Publishing	Germany	100		X	X
C6	CEO	3D Printing	Germany	200		X	X
C7	Director Reporting & Internal Audit	Fast Moving Consumer Goods	The Netherlands	2000		X	
C8	CEO	Consulting	Germany	1		X	
C9	CFO	Food & Beverages	The Netherlands	2100		X	
C10	CEO	Consulting	Germany	5		X	
C11	Managing Director	IT	Germany	75		X	
C12	Finance Manager	Wind Energy	Germany	190		X	
C13	Partner	Consulting	Germany	40		X	
C14	Head of Controlling	Marketing Agency	Germany	300		X	
C15	Chairman of the board	Information Technology	Sweden	250		X	
C16	Strategic Account Director	Tech	The Netherlands	50		X	

Table 2: Overview of Participants

We sent out a pilot study to two test-participants for pretesting to evaluate the appropriateness and to identify weaknesses in the questionnaire (Bell, Bryman & Harley, 2019). The feedback was analysed and the content of the questionnaire was updated.

Pre-Tester	Form of Feedback	Main Points of Feedback
Pre-Tester A	Email after participating in the questionnaire	Provide a more detailed description of the background of the thesis // Splitting up the data field for collecting information about the questionnaire participant into different fields // Improve description and definition for financial and strategic targets //
Pre-Tester B	Phone Call before participation in the questionnaire	Raised the topic of answering before COVID-19 or after // Clearer overview of duration // Raised the concern of financials do not always portray the rationality // Clearer description open-questions

Table 3: Pre-test Interviews

In the questionnaire we gave an explanation for SID to assure that the respondents did not evaluate ordinary or operational investments. Furthermore, we specified that each question should be evaluated as the current COVID-19 pandemic did not happen.

The questionnaire consisted of three parts. Firstly, we characterised the company according to the proposed framework by Carr, Kolehmainen and Mitchell (2010) by using their scoring approach. The second part was built on statements for which the participants had to express on a 7-point Likert scale their agreement and disagreement. The third part were open questions about the SID process itself to gather more data. We included open questions, because they gave the participants the possibility to give additional information about aspects not covered by the other questions. This enabled our study to collect data that is unusual but of interest for the particular field (Bell, Bryman & Harley, 2019). However, open questions demanded further effort from the participants which might lead into stopping answering the questionnaire, and higher time consumption for the researchers because answers had to be analysed (Bell, Bryman & Harley, 2019).

The self-completion questionnaire itself was similar to the semi-structured interviews. Its main difference was that the questions are answered by the respondent alone (Bell, Bryman & Harley, 2019). One problem with that approach occurs if questions are too difficult and too many open questions are asked. Thus, the questions were designed to be as simple and understandable as possible to facilitate the swiftness of answering of the participants. The central advantages were that respondents do not have to spend much time on responding, were not influenced by the interviewer and the convenience of answering (Bell, Bryman & Harley, 2019). Additionally, we put emphasis on the design of the Likert scale and a clear description of both dimensions (Bell, Bryman & Harley, 2019). Furthermore, detailed instructions were given to reduce the chance of misunderstanding and the questions were set into relation to the research purpose.

We asked the participants for follow-up interviews. These interviews were rather semi-structured than structured and the questions were based on the last three open questions in the questionnaire to gather further data (Bell, Bryman & Harley, 2019). Follow-up interviews act as secondary data to support the questionnaire. The main reason was to further enhance the data obtained from the questionnaire and to reduce limitations of the self-completion questionnaire. The combination of questionnaire and follow-up interviews can be understood as an embedded research design strategy, where the data of one approach enhances the data of the other approach (Bell, Bryman & Harley, 2019). Three follow-up interviews were conducted in total.

The length of the interviews ranged between 20 and 30 minutes. The interviews were fully transcribed and afterwards analysed by focusing on answering the research question.

Interview Participant	**Interview Language**	**Job-Title**	**Industry**	**Country**
Interviewee A	English	Managing Director	3D Printing	Germany
Interviewee B	English	Business Development Manager	Publishing	Sweden
Interviewee C	German	Head of Production & CTO	Publishing	Germany

Table 4: Semi-Structured Follow-Up Interviews

2.3.3 Data Analysis

In particular, triangulation was chosen to compare quantitative and qualitative research findings by which weaknesses of both approaches are offset against each other (Bell, Bryman & Harley, 2019). The combination of quantitative findings with qualitative data enhanced the understanding of quantitative data and sheds new lights on interpreting the findings on what decision makers thought particularly (Bell, Bryman & Harley, 2019).

The analysis of data in this thesis was based on triangulation of quantitative and qualitative data both from the self-completion questionnaire and the follow-up interviews (Bell, Bryman & Harley, 2019). The embedded design of the self-completion questionnaire required two different approaches of analysis. The quantitative data was mainly analysed by *descriptive statistics* (Bell, Bryman & Harley, 2019). The answers were analysed by focusing on the minimum, maximum and average scores that the respondents gave. Furthermore, the data was analysed and classified according to the preliminary framework. The analysis of the open questions in the questionnaire were based on identifying keywords which relate to SID.

Both the open questions in the questionnaire and the follow-up interviews delivered comprehensive data about the research. Based on the theory developed in the chapter *theoretical foundations of strategic investment decisions* we were able to make associations about SID and were able to cluster the gathered data. The findings of this approach are presented in the chapter *Empirical Findings.* Firstly, by analysing the whole sample size. Secondly, according to the proposed framework and in the end between different industries.

2.4 Validation of the Preliminary Framework

The comparative case study served as a tool for gathering data and to test the applicability of the preliminary framework in practice (3.7). We selected six biases and heuristics based on the structured literature review as they had the highest importance in relation to SID. The researchers compared the characteristics of the classification in the preliminary framework to the characteristics that were found in the case study. Characteristics of the classifications were updated, deleted or enhanced. We summarized and connected empirical data based on clustering and comparing the findings according to the classification. Afterwards the framework was updated.

2.5 Quality of the Research

2.5.1 Reliability

Reliability is the extent to which a scale produces consistent results if repeated measurements are made (Bell, Bryman & Harley, 2019; Yin, 2014). Therefore, the same results should occur under different conditions and different times. Reliability means that something is free of random errors (Bell, Bryman & Harley, 2019; Sreejesh, Mohapatra & Anusree, 2014).

Possible evaluation methods of reliability as *test-retest reliability, equivalent form reliability,* and *internal consistency* (Bell, Bryman & Harley, 2019; Sreejesh, Mohapatra & Anusree, 2014) were not conducted mainly because questionnaire participants had highly important roles within their companies which did not offer them the time for several participation rounds. Furthermore, due to time limitation for the master thesis it was not possible for us to test the reliability of the questionnaire with an alternative set of interviewees.

2.5.2 Validity

The validity of the developed questionnaire describes the extent to which the designed questions measure what the questionnaire is intended to (Bell, Bryman & Harley, 2019; Sreejesh, Mohapatra & Anusree, 2014). The classification according to Carr, Kolehmainen & Mitchell (2010) was made by using the 7-point Likert scale. By doing so this paper assured that the examined companies in our research could be classified in the same way as Carr, Kolehmainen & Mitchell (2010) did, which made it possible to compare findings of this thesis with their findings. Hence, we argue that the validity of these parts of the questionnaire are appropriate.

We are aware of the fact that a structured literature review can always be improved. Due to certain limitations this was not possible (refer to chapter 2.4). The literature used were well-cited, peer-reviewed articles as well as published books. This enhanced the validity of the research. Furthermore, using predefined keywords in relation to SID ensured the validity of the research. Also, using trusted databases to retrieve articles and books assists in the validity of the research.

Part five of the questionnaire captured relevant data about SID in the company. The first seven questions were based on questions from the questionnaire of Alkaraan and Northcott (2013) which were intended to capture financial and strategic considerations of SID. Bell, Bryman and Harley

(2019) argue that existing questions increase the reliability and validity, because they were piloted before. We regard the validity of these questions as appropriate, because the questions were used in a prior study. Furthermore, Alkaraan and Northcott (2013) state that they adopted questions from previous studies as well, for instance in (Abdel-Kadar & Dugdale, 1998; Arnold & Hatzopoulos 2000) increasing the validity of the selected questions.

The last six statements for assessing SID aspects were designed to capture the degree of behavioural finance characteristics. These questions were designed by We and were based on biases explained in (Kahneman, Lovallo & Sibony, 2011). We have to mention that the validity of these statements might be reduced for the following reasons. Although, the design of the questions was intended to be as neutral as possible one cannot prevent that questions might be framed in a particular way which resulted in biased wording (Sreejesh, Mohapatra & Anusree, 2014). Compared to the other statements, which were already used in practice, these questions were not tested before. Nevertheless, the assessment of behavioural finance in SID processes is complicated and our research is new, because it connects behavioural finance with the framework by Carr, Kolehmainen & Mitchell (2010). Harvey and Muradoglu (2012) state that the major influences in the field of behavioural finance have come from research methods from the field of psychology. They mention that experiments have had the biggest influence in examining behavioural finance in practice. Although the approach in this paper of assessing the behavioural finance dimensions with statements was rather simple, Harvey and Muradoglue (2012) mention that the assessment of complex psychological dimensions must not be necessarily complex itself.

The questionnaire finished with open questions about the SID process and examples of investment projects. The validity of these questions were rather high since they covered huge aspects of SID. The same reasoning applied for the follow-up interviews, because these were based on the open questions of the questionnaire. However, its validity was even higher because the researcher could answer questions of the participants if something was unclear.

2.5.3 Generalisation

The small size of the sample in this study and the use of purposeful sampling did not allow us to make significant conclusions that apply to a much larger population (Bell, Bryman & Harley, 2019). However, one advantage of the mixed method approach lied in its ability to understand the relationship between different variables. The combination of quantitative and qualitative data increases the understanding of particular business contexts and might have increased its generalisation towards other contexts (Bell, Bryman & Harley, 2019).

2.6 Research Limitations

There are arguments against using mixed method studies as the idea carries epistemological commitments and that qualitative & quantitative methods are separate paradigms (Bell, Bryman & Harley, 2019). A limitation we encountered was the time limitation of ten weeks for this thesis for gathering the data. There was a particular focus on the structured literature review as this is a finding itself. The combination of structured literature review, questionnaire and follow-up interview took a considerable amount of time and simply focusing on one approach could potentially be more time-efficient.

We were aware of the fact that a structured literature review can never be finished. Researchers are constantly publishing and reviewing existing literature. Moreover, due to the way we collected the data through the sources can be considered limited. There are many databases that have stored literature. Besides, it came to the occasion that it was unable to receive access to certain literature online or that the contributions or findings were unable to display. Furthermore, it could be considered that the researchers had a bias towards which literature to use for their structured literature review. As the researcher's opinion was almost always taken it could be considered that relevant articles could have been used but, in this paper, have not been used.

There was a limitation for the sample size. Gathering data required many participants in order to spot patterns and get saturated data. However, due to the mixed methods this was in a way limited. Furthermore, the targeted participants are of high status, they are primarily CEOs, CFOs, managing directors, or of equivalent status. Also, the participants were selected on a purposive sampling approach, based on characteristics that seem to add value to the study. They were selected on their job title, industry, and country of origin. Using this approach created the limitation of getting data where the researchers assumed that the participant was suited for the study but turned out that the researchers were incorrect. This limitation raised the issue of bias within the study.

The questionnaire was set up in the English language and as all the participants originated from the countries Germany, the Netherlands, and Sweden, the native language of those countries is not English. The researchers had to be aware of this limitation that English was not the native language of the participants. This could lead to questioning the level of truth for each participant.

As the researchers were not physically present when the participants completed the questionnaire it might have occurred that a participant did not fully understand a question and was influenced by external factors. Additionally, it was not possible to track the involvement of the participants into the questionnaire nor the time spent. The interviews that were conducted over the phone. Thus, we were unable to predict social interpretation of the participants which could lead to limited data. Moreover, it was difficult to ask a lot of questions because of "respondent's fatigue" and one might "miss" collecting interesting data (Bell, Bryman & Harley, 2019).

2.7 Ethical Considerations

The way the data collection was established, sensible data from participants was needed in order to successfully retrieve results and generate a considerate analysis. The data was supplied by CFOs, CEOs, directors or stakeholders within the organization, the data could be sensible and could potentially harm the firm they are working for or even their own position. Therefore, it was clarified that all the data retrieved was handled in an ethical, considerate way. In Bell, Bryman & Harley (2019), the principle of *informed consent* is explained which means *"informed consent entails giving sufficient information about the research and ensuring that there is no explicit or implicit* *coercion."* (Bell, Bryman & Harley, 2019, p. 118). The principle was also applied to brief participants on if recording devices or observation techniques were used. The data was anonymized and handled with the utmost confidentiality. In regard to the qualitative way of gathering data, it was made obvious beforehand that all information and data would be anonymized and handled with care.

Furthermore, the researchers made it clear that participants were not forced to participate in the research. It was shown in the questionnaire at multiple sections that data would be anonymized. Pseudonyms were applied in the study and given to the participants to anonymize the participants and their data (Bell, Bryman & Harley, 2019).

3 Theoretical Foundations of Strategic Investment Decisions

Within this chapter, certain theories and frameworks will be explained and used to develop a preliminary extended framework. The chapter is based on the following sections: An introduction to SID, followed by the theoretical foundations of strategic and financial considerations. After this, the framework by Carr, Kolehmainen & Mitchell (2010) is explained. The chapter also illustrates a section about rationality in SID making. Further, it outlines biases and heuristics as part of behavioural finance. The chapter concludes by introducing a preliminary extended framework which is updated on the original Carr, Kolehmainen & Mitchell (2010) framework.

3.1 Strategic Investment Decisions

The organizations we have today are shaped on past investments and decisions, capital investment decisions to be precise. Past investments were taken to grow, innovate and/or maintain a sustainable competitive advantage over competition. Capital investment decisions are classified as *operational* and *strategic* (Northcott & Alkaraan, 2007). Operational investments according to (Northcott & Alkaraan, 2007) are the 'everyday' decision, risks and outcomes are well-understood by the organization. Simplified decision-making processes and tools are used in order to evaluate these investments. Northcott & Alkaraan (2007) describe SID as investments that commit the organization to a new strategic direction. Strategic investments *"involve significant long-term financial commitments, slow-to-materialise benefits and high levels of uncertainty"* (Northcott & Alkaraan, 2007, p. 199). It can be concluded that SID are closely related to strategy formulation of the organization. These decisions both *shape* and *reflect* strategy (Northcott & Alkaraan, 2007).

SID have various characteristics that define these investments (Butler et al., 1991; Mintzberg, Raisinghani & Théorêt, 1976; Northcott & Alkaraan, 2007). In short, SID are characterized as *competitive-oriented, complex, long-term, non-programmed & unusual, subjective, substantial,* and *uncertain*. SID are intended to challenge the status-quo, these investments enable the organization to maintain or to enhance its sustainable competitive advantage. SID are from nature highly complex and tend to influence multiple areas/departments within the organization. Long-term can be characterized by the fact that these investments are intended for the future and should contribute to the long-term goals established. Strategic investments are new to the organization, there are no rules to follow or experience from previous investments making them *non-programmed & unusual*. As they are intended for future organizational objectives, potentially redefining strategy and the organization's direction, SID can be *substantial* in regard to the committing resources needed for the investment. Moreover, the significant amount of allocated resources generates high *uncertainty* within the organization due to the possible outcomes that are unable to be predicted. Lastly, *subjectivity* is an important factor, decision-makers are exposed to values and expectations that determine the organization's direction (Northcott & Alkaraan, 2007).

3.2 Strategic Considerations

Organizations need to continually monitor, adjust and develop new strategic positions. *Strategic positioning* can be described as creating a sustainable competitive advantage (Porter, 1985, 1996). To create this advantage Porter (1996) mentions that organizations should exceed and differentiate in activities that are similar to competition or organizations should perform different activities from competition. Furthermore, building upon strategic positioning, strategy can be defined as the creation of a position that is unique and will be valuable for the organization (Porter, 1996).

Moreover, Porter defined generic strategies as a guide to create a sustainable competitive advantage. In the book (Porter, 1985), mentions three strategies; cost leadership, differentiation and focus strategies that will enable a firm to establish a strategic position where it can create a competitive sustainable advantage.

According to Porter (1985), the three generic strategies can be classified as:

- Cost leadership: The organization keeps its overall costs as low as possible and tries to achieve the industry's lowest cost. It gains a competitive advantage if it can outperform its competition.
- Differentiation: Supplying differentiated products or services that are unique and superior to its competition is how a firm can outperform its competition.
- Focus: Targeting a narrow group or niche market. Focus can be split in two categories: the cost focus and the differentiated focus.

Porter (1985) concluded when an organization tries to pursue multiple strategies or offers its product as a cost leader and differentiated product, the organization will fail to realize its sustainable competitive advantage and become as Porter calls it "stuck-in-the-middle". Recent, literature by (Hales & Mclarney, 2017) suggests that organizations will face challenges when focusing on a single generic strategy. They argue that organizations become less agile in adjusting to market changes. Moreover, the challenge arises that it becomes more difficult for organizations to meet customer expectations, slower in offering new products and services, and lastly, it is easy for competition to duplicate existing strategies of organizations.

3.3 Financial Considerations

Managers try to assess the return of their projects with various different approaches. One distinguishes between accounting return and economic return (Haka, 2007). Economic return focuses on the actual cash flows of a project (Haka, 2007). By discounting all future cash flows of a project to the present date, the NPV of a project can be calculated. Accounting measures set accounting returns, for instance net profit into relation to other accounting measures from the balance sheet. These measures are based on accrual based accounting information (Haka, 2007).

Hamada (1969) showed that the use of DCFT (Discounted Cash Flow Techniques) increased the market value of companies, by investing into projects that had positive NPV values. Haka (1987) states that DCFT might not be value creating for all companies, because the parameters for this approach depend on firm characteristics, environmental circumstances and the collection of relevant data. Furthermore, the DCF approach depends on future cash flows, cost of capital and the lifetime of the project, which is not calculated easily for each company (Haka, 1987). The use of capital budgeting techniques varies between different countries. DCF techniques are used to the highest extent in Anglo-Saxon companies (Arnold & Hatzopoulos 2000; Graham and Harvey 2001).

Sandahl & Sjögren (2003) examined different capital budgeting techniques for the Swedish market and based their study approach on (Graham & Harvey, 2001). They find that big Swedish companies use sophisticated financial evaluation techniques. A surprising finding by Sandahl & Sjögren (2003) is that Swedish public sector companies have made use of sophisticated financial analysis techniques to a larger extent than publicly listed companies. Moreover, Daunfeldt & Hartwig (2014) also conclude in their findings that Swedish listed companies have become more sophisticated over the years. Furthermore, they find that large companies make more use of capital budgeting techniques than small firms. They also conclude that over the years the theory to practice gap has been increasingly closed.

Carr (2005) investigated SID between US, UK, Japanese and German companies in the vehicles components manufacturing industry. His research shows that Japanese and German companies in this sector are still deeply rooted in their traditional models that distinguish from Anglo-Saxon models, but at the same time, the gap between the different approaches has narrowed down, for instance when it comes to the use of DCF or IRR.

Discounted cash flow techniques work best in stable environments, when future cash flows can be estimated accurately (Chen, 2008). Furthermore, research found that financial analysis techniques seem to have a higher importance, than non-financial measures, while non-financial measures are used as substitutes when DCF techniques cannot be performed effectively (Chen, 2008). Butler et al., (1991) on the contrary found that business strategy and competitive positioning have higher importance than financial analysis.

Research agrees that financial and strategic considerations should be combined in the appraisal of SID, because only the financial evaluation does not consider all implications of strategic investments for instance immaterial and hard to quantify data of choosing an investment project (Shank and Govindarajan 1993; Adler 2000; Slagmulder, Bruggeman & Wassenhove, 1995; Van Cauwenberg et al, 1996).

Boedeker, Hughes & Paulson (2011) suggest combining strategic reasons and financial analysis. Firstly, the DCF technique could be used to select the best projects and afterwards select the one with the best fit to strategy. Secondly, one could use a weighted average approach of DCF and strategic factors (Boedeker, Hughes & Paulson Gjerde, 2011). Compared to (Carr, Kolehmainen & Mitchell, 2010), Boedeker, Hughes & Paulson Gjerde (2011) argue that firms in declining markets and troubled situations should focus more on strategic aspects, while (Carr, Kolehmainen & Mitchell, 2010) argue for the exact opposite.

The shortcomings of traditional financial evaluation techniques are well examined. Their main problem is that they do not assess how the strategic investments contribute to the corporate strategy of the firm (Adler, 2000; Butler et al 1991, Chen 1995). In order to better understand SID, researchers have additionally argued to focus on a more contextual based approach for the research of SID (Haka, 1987; Slagmulder, Bruggeman & Wassenhove, 1995; Verbeeten, 2006).

3.4 Contextual Framework for Strategic Investment Decisions

Central for our master thesis is the contextual framework developed by Carr, Kolehmainen and Mitchell (2010) for SID making practices. They have enhanced the framework by Oldman & Tomkins (1999) by summarizing recommendations and limitations for the framework made by other researchers. Their main enhancement is an update of the two axes.

They state the y-axis "market orientation" is not solely influencing SID making but also the strategic orientation of the company and its respective chosen strategy (Govindarajan & Gupta, 1985; Miles & Snow, 2003; Porter, 1980). Furthermore, "market orientation" should include market attractiveness which is characterised by high profit and growth potential (Brownlie, 1985; Robinson, 1978).

As SID are generally long-term decisions, and the x-axis on the original framework of Oldman and Tomkins (1999) is focused on turnaround which is generally classified as inherently transitory circumstance. Moreover, Carr, Kolehmainen & Mitchell (2010) modified the original x-axis to include performance as that is better supported for longer term. It adds a more multi-dimensional concept of performance. Furthermore, the performance should be linked to the recognition of shareholder influence. Lastly, this led to the modification of the new x-axis "performance in relation to shareholder expectations" (Carr, Kolehmainen & Mitchell, 2010).

Their framework categorizes companies into *Market Creators*, *Value Creators*, *Refocusers* and *Restructurers*. The *Market Creator* values strategic considerations as most important when it comes to SID. The *Restructurer* is at the other end of the scale and values financial considerations as most important (Carr, Kolehmainen & Mitchell, 2010). The main findings based on fourteen extensive case studies are described in the following chapters.

3.4.1 Classification

Market Creators are relatively free of short-term financial constraints. *Market Creators* put strong emphasis on strategic considerations and financial analysis is only a secondary, supportive role. Additionally, they are more flexible when it comes to setting financial targets. *Market Creators* would also adapt financial valuations to arrive at a preferred valuation. There could be potential attempts to modify financial valuations and allow for significant flexibility. Synergies are calculated into the analysis (Carr, Kolehmainen & Mitchell, 2010).

Refocusers are comparable to *Value Creators*, however, their focus lies more on sophisticated financial evaluation techniques than strategic considerations. Compared to *Market Creators* they face stricter short term financial targets and are forced into greater conservatism. Financial analysis techniques are always up to date. For instance, the cost of capital is constantly calculated. Shareholder influence is high for *Refocusers* so their focus is on increasing shareholder value. *Refocusers* are conservative and cautious when it comes to calculating synergies (Carr, Kolehmainen & Mitchell, 2010).

Well-performing *Value Creators* have a more balanced approach of financial and strategic considerations. Their main characteristic is to provide managers with a thorough, multi-faceted analysis. They are similar to *Market Creators* when it comes to stretching financial targets when projects are considered to be strategically valuable. However, *Value Creators* emphasize internal efficiencies and "value creation" through superior cost control. They also have an open approach in calculating synergies but focusing more on cost synergies (Carr, Kolehmainen & Mitchell, 2010).

Restructurers exhibit a very strong financial emphasis while giving very little attention to strategic aspects. Because of their low performance and high shareholder influence financial targets are very strict and tight. Synergies are calculated very carefully (Carr, Kolehmainen & Mitchell, 2010).

Capital budgeting techniques vary only slightly between the four categories. Companies typically use four different techniques. The most influential among all are DCF and IRR techniques (Carr, Kolehmainen & Mitchell, 2010). *Refocusers* and *Restructurers* use primarily a form of DCF technique; they downplay traditional payback methods. These types distinguish from *Market Creators* and *Value Creators* which commonly use EPS growth targets (Carr, Kolehmainen & Mitchell, 2010).

3.4.2 Limitations

The findings of Carr, Kolehmainen & Mitchell (2010) have to be evaluated cautiously since their findings are only based on 14 different companies. They are not statistically significant, exploratory, case-based and thus, the generality cannot be proved. The strongest argument against their classification is that all differences in SID practices may only be explained by country differences (Carr, Kolehmainen & Mitchell, 2010). The contribution of Carr, Kolehmainen & Mitchell (2010) is as follows: they have put together a wide range of acknowledged variables into a single overall framework and then they have explored this framework and its explanatory power with their case studies. Their research has indicated the explanatory power of their framework, but their findings are not significant. Further research is needed to examine this power (Carr, Kolehmainen & Mitchell, 2010).

3.5 Rationality in Strategic Decision-Making

Alkaraan & Northcott (2013) summarize sixteen different variables with principal components factor analysis three different SID making dimensions were defined: Procedural rationality, strategy formulation, political behaviour (Alkaraan & Northcott, 2013). Procedural rationality has its foundations in classical economic theory by assuming decision makers act rational, have clear goals, all needed information and the cognitive ability to analyse complex situations (Northcott & Alkaraan, 2013).

The term procedural rationality was firstly defined by (Dean & Sharfman, 1993). It can be seen as the degree to which decision making tries to arrive at the best possible decision, given the specific situation. This process includes the collection of all possible data to evaluate different scenarios and finally make a sound decision (Dean & Sharfman, 1993). They found that rational decision making was highest when there was a competitive threat in the market and external control of the company for instance by shareholders, financial institutions etc. were limited. They further state that rational strategic decision making was high when problems were not uncertain, while the importance of the decisions was not correlated with rational decision making (Dean & Sharfman, 1993).

The dimension "strategy formulation" is seen as the process where decision makers make their decision based on strategic projects to accomplish the strategic goals of the company (Northcott & Alkaraan, 2013). This dimension is characterised by managerial judgement, company strategies, and managerial experience. (Emmanuel, Harris & Komakech, 2010) find that managers favour projects that match their expectations and intuitions. Northcott and Alkaraan (2013) conclude that projects that fit management's expectations and the strategy of the company are more important than their financial returns.

Furthermore, procedural rationality is correlated with the company's goal to maximize shareholder wealth (Northcott & Alkaraan, 2013). As in Carr, Kolehmainen & Mitchell (2010) framework, the goal of maximizing shareholder wealth can be linked to the performance in relation to shareholder expectations. At the same time procedural rationality and other performance indicators as profitability, efficiency and growth show no significant correlation.

For the dimension "strategy formulation" Northcott and Alkaraan (2013) find that "merger with another company" and "introduction of fundamentally new product lines" are positively correlated. Additionally, they find that non-financial performance measures such as "consistency with corporate strategy" and "quality and reliability of outputs" have a huge impact on this dimension. They mention that these findings are consistent with the findings of Carr, Kolehmainen & Mitchell (2010).

3.6 Behavioural Finance

Behavioural finance is built upon the fact that decision makers do not always process information rationally and that behaviour by investors cannot be described by economic models alone (Barberis & Thaler, 2002). Behavioural finance tries to understand individuals' behaviours by assuming that they do not act rational (Barberis & Thaler, 2002).

When people face uncertainties and have to make a decision they rely on heuristic principles, for instance to evaluate the likelihood that an event occurs. These heuristics can be effective, but they can also lead to systematic error and wrong decision making (Tversky & Kahneman, 1974).

Economic rationality implies that all managers have access to the same information and value the information equally and arrive at the same decision (Emmanuel, Harris & Komakech, 2010). Hence, the manager and its judgement take a passive role, because an analysis technique will always arrive at the value maximizing investment decision (Emmanuel, Harris & Komakech, 2010). Simons (1987) has criticised the model of economic rationality arguing that this is only applicable in simple situations with little uncertainty. Furthermore, he follows in dynamic circumstances and uncertainty the economic model fails to explain the behaviour of decision makers. Hence, in a more realistic, organizational setting managerial judgement becomes important and cannot be described by economic rationality alone (Emmanuel, Harris & Komakech, 2010).

Kahneman, Lovallo & Sibony (2011) state that there are two modes of thinking in the human brain; intuitive and reflective. Intuitive is described as *"thinking, impressions, associations, feelings, intentions, and preparations for action flow effortlessly" (Kahneman, Lovallo & Sibony, 2011, p. 52)*. Reflective thinking can be described as: *"thinking is slow, effortful, and deliberate" (Kahneman, Lovallo & Sibony, 2011, p. 52).* These modes of thinking help executives indirectly decide on decisions.

3.7 Biases and Heuristics in Decision Making

Tversky & Kahneman (1974) examined how decisions are made in the case of uncertain situations. They find that decisions differ when the reference point is changed, for instance if a decision maker includes past losses in its evaluation about the future the decision might be different. "Rules of thumb", intuitions and industry experience can be classified as heuristics and are means to cope with uncertain situations (Emmanuel, Harris & Komakech, 2010). The use of heuristics might lead to bias through selective recollection which then results in differences in how different managers evaluate the same situation and the extent to which they try to find relevant information (Emmanuel, Harris & Komakech, 2010).

Emmanuel, Harris & Komakech (2010) study about six hotel companies in the UK, that "rules of thumb" were used regularly and that those companies put more emphasis on managerial experience than on financial analysis. Furthermore, in Carr & Tomkins (1996) they find that managers of UK and German vehicle component manufacturers regarded sound industry knowledge more important than financial analysis.

Based on three different case studies (Emmanuel, Harris & Komakech, 2010) examined managerial judgement in strategic decision making within organizational contexts. They find that heuristics, biases and consensus can describe managerial judgement in different organizational settings. One company had extensive formal procedures in place which reduced the scope for using heuristics and consensus (Emmanuel, Harris & Komakech, 2010). Furthermore, they state that one other company, which lacks documentation of procedure.

3.7.1 Group Thinking

The opinions of groups need to be considered when making strategic decisions (Kahneman, Lovallo & Sibony, 2011). Kahneman, Lovallo & Sibony (2011) reflect that in corporate culture the unanimity is genuine within groups, when bad outcomes are established, none of the individuals want to be the responsible and unanimity is preferred. Within groups it is possible that fear will create a minimization of conflict (Kahneman, Lovallo & Sibony, 2011). The reason is that in a group it can lead to converging a decision based on gathering support. The absence of a group's opinion should sound an alarm to managers or decision-makers when analysing a SID. Furthermore, group members should reach a certain consensus and acceptance through cultural norms, corporate priorities, and procedures even when not agreeing on every aspect of the proposal or outcome (Mohammed, 2001).

3.7.2 Anchoring

Tversky & Kahneman (1974) state that people start at an initial value to estimate something and then start to adapt this value away from its starting point. This is called *Anchoring* and they argue that this process of decision-making leads to errors, because estimates start at different starting points which are biased itself. Furthermore, managers tend to evaluate situations on reference points based on their personal knowledge. This process is called *Anchoring* and can lead to biased decisions (Emmanuel, Harris & Komakech, 2010).

A consequence of *Anchoring* is that the probability of conjunctive events will be overestimated, and disjunctive events will be underestimated (Tversky & Kahneman, 1974). Conjunctive events are events that consist of different stages that all have to occur in order to make that event happen and disjunctive events are events that are not connected (Tversky & Kahneman, 1974). For instance, a conjunctive event is, if a dice has to show the six, three times in a row whereas in a disjunctive event the dice has to show the six only once in three attempts.

Tversky & Kahneman (1974) mention that this bias occurs severely in planning situations for instance the planning of a new product which has to fulfil a sequence of conjunctive events in order to be successful. Hence, we argue that the likelihood of these events are systematically overestimated. This tendency leads to overoptimism about the success of a project or finish a project on time (Tversky & Kahneman, 1974).

Anchoring is severely present in the development of business proposals and financial estimates and decision makers always have to question where the numbers come from and which numbers are estimates (Kahneman, Lovallo & Sibony, 2011). Anchoring occurs in three different forms and distorts decision making (Kahneman, Lovallo & Sibony, 2011). Firstly, financial analysis often includes estimates about future costs and revenues and these estimates are often unquestioned in the further evaluation. Secondly, forecasts of the future are often based on historical developments, but future may not depend on past developments. Lastly, when anchors are set intentionally for instance in price negotiations. One efficient way of mitigating anchoring biases in financial estimates is to tackle initially made assumptions, for instance by employing a totally different estimation technique. It that way the numbers increase their quality (Kahneman, Lovallo & Sibony, 2011).

3.7.3 Affect Heuristic

Research has found that people who like and favour something tend to neglect and minimize costs and risks while over evaluating its benefits. The same applies for things people do not like (Kahneman, Lovallo & Sibony, 2011; Slovic, Finucane, Peters, & MacGregor, 2007). The process of evaluating something attractive or bad happens immediately in humans' brains (Slovic et al., 2007). The affect heuristic is an immediate evaluation of different situations based on automatic, subconscious thinking and incorporates good and bad feelings about something. Although the affect heuristic has its advantages in lots of different situations and was part of human evolution it can lead us astray in different situations (Slovic et al., 2007). We argue that affect can be manipulated to influence decision making and furthermore, the human thinking processes are in some situations not capable of profound analysis (Slovic et al., 2007).

This follows that discussions about decisions are best made rationally and that decisions makers actively examine the preferences of project members who are involved in the decision-making process (Kahneman, Lovallo & Sibony, 2011).

3.7.4 Sunk Cost Fallacy

In analysing new investments, decision-makers often review past experiences, past investments, and past expenditures. These past investments can create clouded judgment over new investments and the rationality of decision-making. (Kahneman, Lovallo & Sibony, 2011) argues that decision-makers should disregard the past that does not affect future costs or new revenues, however, decision-makers do not do this. Hammond, Keeney & Raiffa (2006) elaborate further on the fallacy of sunk cost. They conclude with (Kahneman, Lovallo & Sibony, 2011). Hammond, Keeney & Raiffa (2006) conclude that people are not free from the past due to several psychological reasons, people are unwilling, unconsciously deciding, or unwilling to admit to a mistake. In the business environment Hammond, Keeney & Raiffa (2006), mentions that a bad decision is reflected on poor leadership skills. For example, hiring an individual who does not perform is viewed by colleagues and bosses as poor managerial judgment.

Butler and Gosh (2015) state that comprehensive thinking is a skill that is important in decision making and to adapt to new business situations. They define comprehensive thinking as a way to evaluate different paths in a situation. In this regard they examined the sunk cost fallacy based on a task conducted with 45 MBA students. In their opinion comprehensive thinkers will stop investing in a project if the financial projections turn negative, although money has been invested in the project. That means to evaluate only the future conditions and not the ones in the past. Based on the Embedded Figure Test (Witkin et al 1971) they classified the students in comprehensive and non-comprehensive thinkers and found evidence that comprehensive thinking ability stopped students from continuing the project (Butler & Gosh, 2015).

3.7.5 Overoptimism/Overconfidence

People fail in assigning appropriate confidence intervals in their estimations, their estimates are too narrow and fail to materialize to the extent they think (Alpert and Raiffa, 1982). Furthermore, people are bad at estimating the probabilities of different events. Fischoff, Slovic and Lichtenstein (1977) found that events only happen in 80 percent of the time even if the respondents said they are certain about their estimates and 20 percent of situations occur when people stated their occurrence is impossible.

Weinstein (1980) argue that people simply over evaluate their skills and abilities. He finds that in surveys usually 90% regard for instance their driving skills as above average. This overestimation is also called better-than-average effect, which resembles the fact that people simply overestimate their abilities. Overconfidence leads to the underestimation of risks and base cases of projects are over optimistically estimated (Kahneman, Lovallo & Sibony, 2011).

3.7.6 Confirmation Bias

A good decision-making process exists if alternative options are examined and evaluated independently even if one option is favoured (Kahneman, Lovallo & Sibony, 2011). The *Confirmation Bias* manifests itself for individuals and groups by formulating a hypothesis and then to seek only for evidence that supports the hypothesis. Furthermore, evidence that goes against this hypothesis is disregarded and neglected automatically (Kahneman, Lovallo & Sibony, 2011). Decision makers should search actively for confirmation bias, by asking for several investment proposals and whether the team has considered and evaluated actively facts that go against their hypothesis.

The confirmation bias does not only occur in relation to hypothesis but also to existing beliefs and opinions. Nickerson (1998) states that people give more weight to information which supports their personal beliefs and opinions than information which stands against it. Furthermore, he mentions that information which contradicts personal beliefs and opinions are recognized, but they are not treated and evaluated as importantly as information that supports one's opinion.

3.8 Preliminary Extended Framework

The structured literature review laid the foundation for the development of the preliminary framework. Dean and Sharfman, (1993) introduced the term *procedural rationality* as a contextual characteristic in SID and moderately started to think about rationality in SID. Alkaraan & Northcott (2013) and Emmanuel, Harris & Komakech (2010) have further broadened the study of rationality in SID. These contributions show that rationality and in particular biases and heuristics are important to better understand SID. However, so far there is only scant evidence of psychological influences on SID in companies compared to the examination of biases and heuristics in the context of capital markets (Barberis & Thaler, 2002).

Based on the findings of the structured literature review an extended preliminary framework is created which is built on the framework by Carr, Kolehmainen & Mitchell (2010). In the following the four classifications are enhanced by their degree of rationality and in particular the presence of biases and heuristics.

> *Given their sophisticated approach of financial analysis* ***Refocusers*** *make rational strategic investment decisions. Because of high shareholder influences they employ a procedural approach to decision making and try to gather as much data as possible to arrive at sound analysis. They show the characteristics of very reflective thinkers. The existence of biases and heuristics within their SID processes is low compared to the other classifications and they are aware that these might influence their SID.*
>
> *Considering their weak market position and high shareholder influences* ***Restructurers*** *are performing a very rational SID process.* ***Restructurers*** *are sophisticated and reflective thinkers. Their SID making process is very procedural with a low presence of biases and heuristics, especially when it comes to Sunk Cost Fallacy, Overoptimism and Confirmation Bias. This goes hand in hand with their focus on financial objectives and thorough financial investment appraisals.*
>
> *Because of their well-performing position and rather low shareholder influence,* ***Market Creators*** *are not forced to put a high emphasis on rational decision making. They are rather intuitive thinkers that can adapt fast to changing market conditions. However, they are aware that different biases and heuristics exist in practice. The Affect Heuristic is strongly pronounced as managers favour their judgement.*
>
> ***Value Creators*** *are in a rather comfortable position. Their internal processes are efficient, and the objective is to create value for customers. They are combining intuitive and reflective thinking when they assess strategic investment projects. Considering lower shareholder influences their SID making process is less procedural and biases and heuristics are present. However, they show signs of Affect Heuristic and Overoptimism.*

Based on the beforehand mentioned reasons the following preliminary extended framework is developed. The blue text represents the updates based on rationality which is found in the literature. The framework can be viewed below (figure 1). Additionally, in the original framework of Carr, Kolehmainen & Mitchell (2010) there is a dimension that shows *"increased strategic vs. financial performance"*. We optimized this and added the reasoning that this dimension also correlates with *"increased managerial judgement vs. rationality"*. This is concluded based on the literature mentioned above (figure 2).

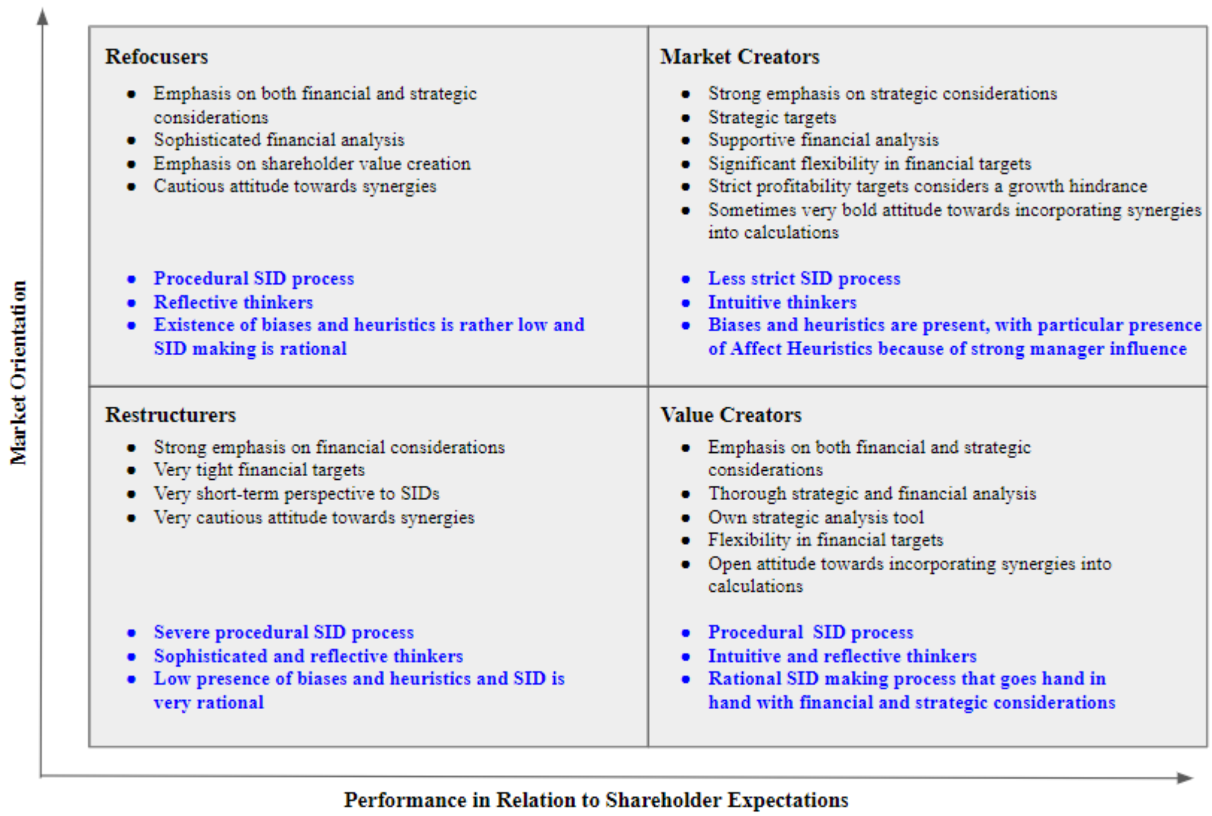

Figure 1: The Preliminary Extended Framework

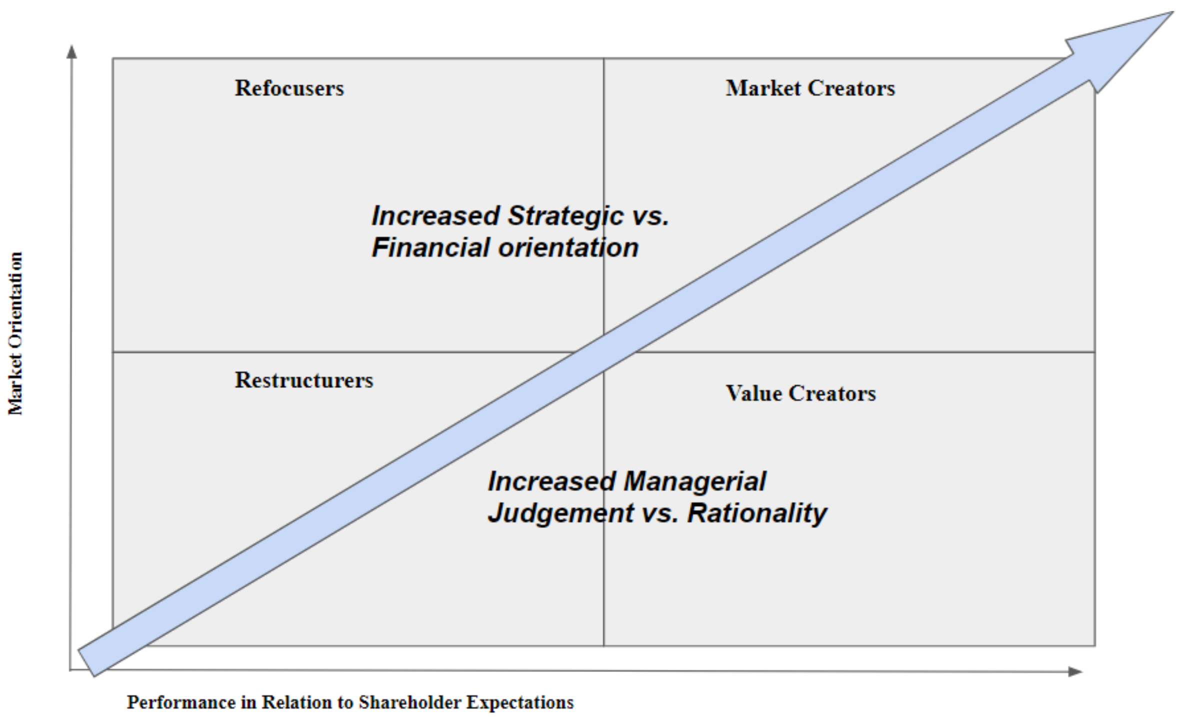

Figure 2: Optimized Dimension Preliminary Extended Framework

4 Empirical Findings

This chapter focuses on the empirical findings from the pre-test interviews, self-completion questionnaire, and the semi-structured follow-up interviews. Firstly, the sample is described and general findings are presented. Secondly, the companies in the sample will be classified according to the preliminary extended framework. After classifying the companies, the findings for financial, strategic and behavioural finance aspects with regards to SID are presented. Furthermore, the findings between different industries are shown. The supported data regarding the questionnaire and interviews can be found in the appendix.

4.1 Introduction to the Sample

The findings of this master thesis are based on data from 16 different companies. There were ten participants from Germany, four participants from the Netherlands, and two participants from Sweden. A variety of different industries is included in the sample and also different sizes of companies ranging from a consultancy firm run by a single individual to big corporates of more than 2,000 employees. The participants work in positions that are highly involved in SID making. Primarily Managing Directors, CEOs, CFOs and employees in decision making roles in financial and strategic oriented departments were selected to participate. Table 5 shows the classification of the companies that participated in the questionnaire according to the preliminary suggested framework.

Company Shortcut	In which industry operates the company?	Average Market Context	Average Strategic Orientation	Market Orientation	Performance in Relation to Shareholder Expectation	Classification
C1	ManuEnerWhole	4.0	4.3	4.2	4.5	Market Creator
C2	PubMediaTech	2.5	4.7	3.6	5.5	Value Creator
C3	ManuEnerWhole	4.5	4.3	4.4	3.0	Refocuser
C4	PubMediaTech	4.0	4.3	4.2	2.5	Refocuser
C5	PubMediaTech	2.0	2.3	2.2	3.5	Restructurer
C6	ManuEnerWhole	5.5	5.7	5.6	5.0	Market Creator
C7	ManuEnerWhole	4.5	3.3	3.9	2.0	Refocuser
C8	Consul/Service	5.5	5.0	5.3	6.5	Market Creator
C9	ManuEnerWhole	5.5	3.3	4.4	4.5	Market Creator
C10	Consul/Service	4.0	4.3	4.2	3.5	Market Creator
C11	Consul/Service	6.0	2.3	4.2	4.0	Market Creator
C12	ManuEnerWhole	6.5	3.0	4.8	1.5	Refocuser
C13	Consul/Service	4.0	3.7	3.8	3.0	Refocuser
C14	PubMediaTech	5.0	3.0	4.0	2.5	Refocuser
C15	PubMediaTech	6.0	5.0	5.5	4.5	Market Creator
C16	PubMediaTech	6.0	3.7	4.8	4.5	Market Creator

Table 5: Preliminary Table Classifications

The companies were further grouped into three different industry categories. The grouping facilitates the comparison and is based on similarities of the companies namely the business model and the sector they operate in. Further elaboration about the industry classifications will be explained in section 4.4. The firms will be clustered into the following industries:

- Manufacturing/Energy/Wholesale (ManuEnerWhole)
- Publishing/Media/Technology (PubMediaTech)
- Consultancy/Service Business (Consul/Service)

The following tables summarize the average scores of the statements asked in the questionnaire for all 16 companies which participated in the questionnaire. Firstly, the statements concerning financial and strategic aspects are presented, followed by the statements about biases and heuristics. The intent of these two tables is to create an initial understanding of the results for all companies and to build the foundation for the findings in chapter 4.2 to 4.4.

Statement	**Average**
In our decision-making process, we stick closely to the defined procedures and we do not deviate from this process.	3.0
Financial evaluation techniques are often used in the early analysis of strategic investments and are important in our decision-making process.	4.6
Financial evaluation techniques are regularly used in the final choice of strategic investments.	4.7
The evaluation of strategic investments is left to the judgement of top management.	5.3
A strategic investment proposal will be rejected if its expected financial return does not meet the minimum requirements of return on investment set by the company.	4.8
A strategic investment proposal whose expected financial return meets the minimum requirements of return on investment can be rejected if it does not satisfy the expectations and intuition of the top managers.	5.1
When the final decision about strategic investments is made, the financial analysis is a more important factor than managerial judgement (management experience, intuition, individual assessment of the situation, etc.).	3.1

Table 6: Summary Averages Statistics Financial and Strategic Characteristics (strongly disagree 1 | strongly agree 7)

The analysis of the answers of the 16 companies reveals that they tend to not closely stick to a defined procedure when it comes to analysing SID meaning that organizations deviate from standard procedures. Financial evaluation techniques are often used in the early analysis of SID and are important in the SID making process. Financial evaluation techniques are used to the same degree in the final choice of investments. The average answers of these two statements imply that financial analysis has an important factor for decision making. However, organizations highly agree with the statement of leaving decisions for top management. The findings for the requirements for return on investments are ambiguous. On the one hand, a strategic investment proposal will be rejected if returns are lower than required and on the other hand, a strategic investment proposal will be rejected even if it meets ROI requirements but does not satisfy the managerial judgement of top-managers. Lastly, the participants do not agree with the statement that financial analysis is more important than managerial judgement in deciding SID. This finding is quite important as it says that managerial judgement across all 16 companies is on average more important for the final decision. The following table summarizes the results for the statement about biases and heuristics.

Examined Bias / Heuristic	**Statement**	**Average**
Anchoring Bias	Financial estimates about future returns of the investment project are constantly reassessed and questioned.	4.7
Affect Heuristic	The evaluation of strategic investments is conducted without consideration of personal preferences of the decision-maker.	4.4
Group Thinking	Disagreement between the people involved in the strategic investment decision process can be addressed openly when it comes to decision-making even if this disagreement results in conflict	5.7
Sunk Cost Fallacy	For the evaluation of strategic investments, the future conditions are more important than the results of similar past investments	5.4
Overoptimism	Even if a project seems to be very successful a comprehensive financial analysis is conducted.	4.6
Confirmation Bias	In our investment decision process, multiple options or other alternatives are fully evaluated in an objective and fact-based way even if the current investment proposal seems to be the best.	4.3

Table 7: Summary Statistics Behavioural Finance Characteristics (strongly disagree 1 | strongly agree 7)

The averages imply that across all sixteen companies biased decision making does not occur frequently. These findings are surprising since they mean that the companies disagree on average that different biases and heuristics occur in their SID making processes. Especially *group thinking,* and *sunk cost fallacy* are of low presence according to the findings whereas the Affect Heuristic and Confirmation Bias occur more frequently.

4.2 Classification of the Sample

Most of the companies can be classified as *Refocusers* and *Market Creators*. This study consists of eight *Market Creators* and six *Refocusers*. *Restructurers* and *Value Creators* are weakly represented. The sample consists of one *Restructurer* and one *Value Creator*. Each of the participants' organisations are categorized according to the preliminary framework. For all the scores averages are calculated. To place an organisation along the vertical axis (market orientation) the combined scores of market context and strategic context are averaged and provide the position along the y-axis. On the horizontal axis (performance in relation to shareholder expectations) the scores of performance in relation to shareholders and shareholder influence are generated which assist in positioning the organisations on the x-axis.

The German firms can be found in all classifications except for *Value Creators*. One of the German firms (C5) is on the verge of *Restructurer* and *Value Creator*. However, it will be classified as a

Restructurer because it is driven by financial objectives and a particular focus on cost leadership. Of the four Dutch firms two can be classified in the *Refocusers* sector and two in the *Market Creator* sector of the figure.

Lastly, the Swedish firms resemble one *Market Creator* and one *Value Creator*. The *Value Creator* is on the border to a *Market Creator*. However, from the analysis we can conclude that it rather shows characteristics of a *Value* than a *Market Creator* (C2).

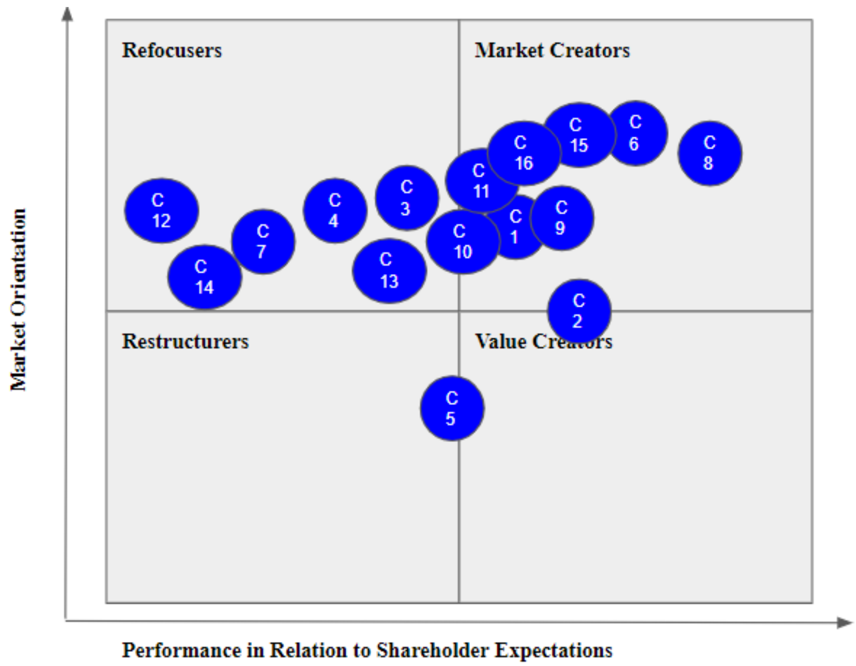

Figure 3: Classification of Organizations in the Carr, Kolehmainen & Mitchell (2010) Framework

Based on the classifications the findings were analysed. The average scores for the statements can be found in the following tables which built the foundation for the quantitative analysis. The tables will be used to justify the findings section which is split up in the classifications of the preliminary framework.

Statements Financial and Strategic Orientation	**Refocusers**	**Market Creators**	**Restructurers**	**Value Creators**
In our decision-making process, we stick closely to the defined procedures and we do not deviate from this process.	3.7	2.6	3.0	2.0
Financial evaluation techniques are often used in the early analysis of strategic investments and are important in our decision-making process.	5.3	4.3	4.0	4.0
Financial evaluation techniques are regularly used in the final choice of strategic investments.	5.0	4.6	4.0	4.0
The evaluation of strategic investments is left to the judgement of top management.	4.7	5.5	6.0	6.0
A strategic investment proposal will be rejected if its expected financial return does not meet the minimum requirements of return on investment set by the company.	5.0	5.0	2.0	5.0
A strategic investment proposal whose expected financial return meets the minimum requirements of return on investment can be rejected if it does not satisfy the expectations and intuition of the top managers.	5.2	4.5	7.0	7.0
When the final decision about strategic investments is made, the financial analysis is a more important factor than managerial judgement (management experience, intuition, individual assessment of the situation, etc.).	3.5	2.9	3.0	2.0

Table 8: Average Scores for Statements about Financial and Strategic Orientation (strongly disagree 1 | strongly agree 7)

Statements Behavioural Finance	**Refocusers**	**Market Creators**	**Restructurers**	**Value Creators**
Financial estimates about future returns of the investment project are constantly reassessed and questioned.	4.8	4.8	6.0	2.0
The evaluation of strategic investments is conducted without consideration of personal preferences of the decision-maker.	5.5	4.3	1.0	2.0
Disagreement between the people involved in the strategic investment decision process can be addressed openly when it comes to decision-making even if this disagreement results in conflict	6.0	5.6	4.0	6.0
For the evaluation of strategic investments the future conditions are more important than the results of similar past investments	5.5	5.4	5.0	6.0
Even if a project seems to be very successful a comprehensive financial analysis is conducted.	5.5	4.3	4.0	3.0
In our investment decision process, multiple options or other alternatives are fully evaluated in an objective and fact-based way even if the current investment proposal seems to be the best.	4.8	4.3	3.0	2.0

Table 9: Average Scores for Statements about Behavioral Finance (strongly disagree 1 | strongly agree 7)

4.3 Strategic Investment Decision Characteristics of the Classifications

The following analysis focuses in depth on the findings for the different classifications. The average scores can be found in the table 8 and 9.

4.3.1 Refocusers

Refocusers operate in rather dynamic and attractive market contexts. They are not particularly driven by achieving financial or strategic objectives. Their strategic approach focuses more on cost leadership rather achieving competitive advantage through differentiation. Their control measures focus on financial targets rather than strategic targets. On average, *Refocusers* perform slightly below expectations of shareholders in this sample of the thesis and they are exposed to a very high influence of shareholders.

The findings for sticking closely to defined procedures in SID making is ambiguous for *Refocusers*. Two answers highly agreed with the statement while two highly disagreed with the statement and the other two were indifferent. However, *Refocusers* score the highest average value among all classifications implying that procedures are very important in their SID making processes. This is further shown by the statement of one participant who described their approach as a *"clear structured process"*. *Refocusers* are using financial evaluation techniques in the early stages of SID and they are also regularly used in the final stage of the decision. These values are by far the highest averages among the classifications. The variety of techniques used is the highest among all classifications. Surprisingly, economic ratios as NPV, IRR or APV are not used to the same extent as accounting ratios.

Classification	Capital Budgeting Techniques
Refocusers	Accounting Ratios (3x), NPV (3x), Sensitivity (3x), Pay-Back (3x), IRR (2x), ARR (2x), Annuity (1x), APV (1x), P/E-multiple (1x),

Table 10: Refocusers Capital Budgeting Techniques

The evaluation of SID is left to the judgement of top-management. Among the classifications this score has the lowest average which might imply that middle-management roles are more involved in SID making processes than for the other classifications.

A strategic investment proposal will be rejected if its expected financial return does not meet the requirements for return on investment. Furthermore, *Refocusers* agree that an investment project will be rejected if financial return requirements are met but it does not meet the expectations and intuition of top-managers. When it comes to the final evaluation of an investment project the findings are twofold whether managerial judgement is more important than the financial analysis. Four out of six *Refocusers* disagreed with the statement implying managerial judgement is of more importance. The two others stated that financial analysis is the most important. However, the average score was the highest among all classifications and implies, that *Refocusers* focus to the highest extent on financials.

The findings so far imply that the *Refocusers* put more emphasis on financial analysis than on managerial judgement. Compared to the other classifications they show the highest degree of financial analysis when it comes to SID.

The answers of the questionnaire imply that *Refocusers* are aware of *Anchoring* in SID. Indeed, one *Refocuser* strongly agrees to the statement with a score of seven. Only one *Refocuser* disagreed with the statement. What is really outstanding are the findings about *Affect Heuristic*. Five out of six *Refocusers* replied with a score of six that SID are evaluated without any personal preferences. Only one slightly disagreed. Compared to the other classifications *Refocusers* have the lowest influence of personal preferences in SID making implying a very rational process compared to the other classifications. All *Refocusers* agreed with the statement about *Group Thinking*. Hence, one can assume that decision makers are aware of the threat of *Group Thinking* and that SID processes companies endeavour an open form of discussion about investment projects. Furthermore, the average score is the highest among the classifications implying that *Refocusers* tackle the problems of *Group Thinking* by strengthening an open form of discussion in groups.

Only one *Refocuser* disagreed with the statement about *Sunk Cost Fallacy* the rest agreed. These findings show that *Refocusers* are aware of the Sunk Cost Fallacy. Only one *Refocuser* disagreed with the statement about *Overoptimism*. One *Refocusers* even replied with a score of seven. In total, the average is the highest implying that *Refocusers* are highly rational among the classifications and that financial analysis are conducted even if the project seems to become very successful. The results show that *Refocusers* do assess different investment projects even if they have found one of particular interest. Only one disagreed with the statement. The results imply that the *Confirmation Bias* is not a threat for *Refocusers*. Furthermore, the average score is the highest among all classifications showing that rationality is of particular importance for *Refocusers.*

Refocusers reveal the image of very sophisticated, financial driven decision makers. Managerial judgement is also important for them but it plays a subordinate role to the financials. *Refocusers* are very rational in decision making. For four out of six biases *Refocusers* show the most rational approach to SID.

4.3.2 Restructurers

As already noted, the *Restructurer* in the sample of this thesis is on the verge of being a *Value Creator* as it shows certain characteristics. However, the characteristics are more congruent to *Restructurers* and the company is classified accordingly. The interview with the *Restructurer* shows that financial return is the most important evaluation measure.

> *"The most important criteria is the financial return of the investment and that the money flows to the shareholders of the company." (C5)*

The *Restructurer* operates in a highly stable environment and the market attractiveness can be considered low. The *Restructurer* is more driven by achieving financial objectives rather than reaching market objectives. The *Restructurer* is highly focused on cost leadership and tries to achieve lowest costs possible. Financial goals are important to achieve as opposed to strategic goals. The influence of shareholders is mediocre. The *Restructurer* finds itself not in a financial crisis nor performing above shareholder expectations.

In the following the results from the first half of the questionnaire about strategic and financial aspects about SID making processes of *Restructurers* are presented. *Restructurers* rather stick closely to defined procedures in SID making. Furthermore, they are using financial evaluation techniques in the early stages of SID and they are also regularly used in the final stage of the decision. Compared to the other classifications the average score has the lowest value. The analysis of capital budgeting techniques indicates that a variety of different measures were used by the *Restructurer*, both economic and accounting ratios.

Classification	**Capital Budgeting Techniques**
Restructurers	NPV (1x), APV (1x), Pay-back (1x), ARR (1x), Accounting Ratios (1x)

Table 11: Restructurer Capital Budgeting Techniques

It must be highlighted that the evaluation of SID is left to the judgement of top-management. On average this is the highest score together with the *Value Creator* which scored the same.

> *"Although the most important aspect is to generate financial profits the analysis and evaluation of project is based on managerial experience" (C5)*

A strategic investment proposal will not be rejected if its expected financial return does not meet the requirements for return on investment. The *Restructurer* highly agrees that an investment project will be rejected if financial return requirements are met but it does not meet the expectations and intuition of top-managers. Among the other classifications this is the highest average score. For the final evaluation of an investment project the managerial judgement is more important than the financial analysis. The answers of the questionnaire about the role of top-management reveals the same picture as the interview.

These keywords are used to describe the SID making process of the *Restructurer* and a holistic approach of different factors comes to mind. The following keywords are data taken out of our questionnaire: "*Networking, finding interesting takeovers, observing, making contact, waiting, remote analysis of empirical values, sales figures, gut feeling - when a purchase opportunity arises: taking over".*

The findings of strategic and financial factors of the *Restructurer* so far imply a similar picture to *Market Creators*. Additionally, the role of managers and managerial experience is of even more importance than for *Market Creators*. The results show that the *Restructurer* does not put that much focus on financial aspects.

The *Restructurer* agrees with a score of six to the *Anchoring* statement. Given the fact that *Restructurers* and *Refocusers* might face higher controls by shareholders it is reasonable to assume, that these companies put more emphasis on reassessing financial appraisals. This is particularly applicable for the *Restructurer* who furthermore acts in a difficult market situation. The average score of the *Restructurer* is the highest among the other classifications and implies that it assesses financial estimates very rationally during the SID process. Surprisingly, the *Restructurer* strongly disagreed with the statement about *Affect Heuristic* although one might assume that companies in cut-throat markets and high shareholder influence should lay more focus on rationality in SID. The interview with the *Restructurer* shows that the role of the CEO in combination with gut feeling and managerial judgement is highly important.

> *"The decisions are basically made by the CEO who is basing his decision on managerial judgement and gut feeling" (C5)*

However, one could also conclude that the incorporation of personal preferences of the management team was the reason why the *Restructurer* has this kind of characterisation now. The analysis of the open questions of the *Restructurer* reveals that *gut feeling* is part of the evaluation of possible acquisition projects and that the company operates in a traditional market. That further shows the prevalence of the *Affect Heuristic* in SID for this classification. Restructurers are aware of the threat of *Group Thinking* and that SID processes companies endeavour an open form of discussion about investment projects. However, compared to the other classifications the *Restructurer* scores the lowest value. The *Restructurer* does not fall in the trap of sunk costs. The future assessment is of more importance than the past. Compared to the other classifications the same applies as for *Group Thinking*. The average score is the lowest among the classifications.

The *Restructurer* also conducts a financial analysis even if a project seems to be very successful. The finding might imply that the *Confirmation Bias* is prevalent in the assessment of SID by the *Restructurer*. The score of three implies that during its investment decision process, multiple options or other alternatives are not fully evaluated in an objective and fact-based way even if the current investment proposal seems to be the best. The interview shows how the *Restructurer* has handled acquisitions in the past.

> *"The company was very attractive because it has grown strongly over the last couple of years with interesting revenue increases of 20 MEUR [...] we realized that the integration would be very difficult. At the end the decision was based on how much revenue can we add to the group and not so much on profitability? Because of that decision, I would say that the decision was rather driven by experience and gut feeling and not so much by financial analysis." (C5)*

This quote is ambiguous. On the one hand the *Restructurer* stated that financial returns are the most important aspects when it comes to SID making. On the other hand, the way to arrive at that decision is based on managerial experience and gut feeling by the CEO and not financial analysis.

In summary, the findings in this master thesis indicate that the *Restructurer* has a very holistic approach of assessing strategic investment projects. Of particular importance for the *Restructurer* is the role of top-management and managerial judgement that is more important than the financial analysis. Analysing the scores about biases and heuristics show an ambiguous approach to rationality. The *Affect Heuristic* is very much prevalent for the *Restructurer* revealing that personal preferences are indeed very important. On the other hand, the *Restructurer* is very much aware of *Anchoring*. However, it shows the lowest scores for three out of six *biases* and *heuristics* among all classifications. Although the scores imply that the *Restructurer* still behaves rationally their degree of rationality is one of the lowest.

4.3.3 Market Creators

The *Market Creators* in our sample operate on average in a high dynamic environment and in attractive markets. Furthermore, *Market Creators* are generally speaking slightly more financial oriented as opposed to reaching market objectives. *Market Creators* position themselves based on our sample as focusing on differentiation strategies to distinguish themselves from competition. Moreover, *Market Creators* tend to focus more on achieving financial control instead of having a strategic planning style in assessing performance. Shareholder influence is low and shareholders expect the firm to be in a financial safe position while outperforming expectations.

Market Creators do not stick closely to defined procedures in SID making. Furthermore, *Market Creators* are using financial evaluation techniques often in the early stages of SID and they are also regularly used in the final stage of the decision. NPV, pay-back and IRR techniques are most commonly used by *Market Creators*. However, table 12 shows also lots of accounting ratios in addition to pay-back techniques.

Classification	**Capital Budgeting Techniques**
Market Creators	NPV (6x), pay-back (5x), IRR (3x), PE-multiple (2x), Sensitivity (2x), Accounting Ratios (1x), Annuity (1x)

Table 12: Market Creators Capital Budgetting Techniques

It must be highlighted that the evaluation of SID is left to the judgement of top-management. A strategic investment proposal will be rejected if its expected financial return does not meet the requirements for return on investment. Only one answer implies the opposite. Surprisingly, compared to the other classifications, *Market Creators* have the highest average for this statement. It seems that although *Market Creators* focus on strategic aspects, financial hurdles for investments are in place. *Market Creators* agree that an investment project will be rejected if it does not meet the expectations and intuition of top-managers, even if the financial requirements for return are met. Only one answer implies the opposite. On average this was the lowest score among all classifications. For the final evaluation of an investment project the managerial judgement is more important than the financial analysis.

The analysis of the quantitative questionnaire findings so far show an ambiguous picture of *Market Creators*. Their investment evaluation process is rather loosened with high influence of top-managers. However, financial analysis is an important part in assessing strategic investment projects.

Analysing the open questions in the questionnaire and follow-up interviews show that the use of financial analysis techniques can also be manipulated to achieve certain outcomes as one respondent stated:

> "*A NPV calculation can be manipulated. Simply change the parameters on the end value and you have double the value…" (C6)*

Another statement shows that both strategic and financial aspects are considered in SID:

> "*Find balance between improvement market position (e.g. market share) and financial return with eye on long term position and profitability of the company. Not short term focus, but still a lot of attention for different risks and scenario analysis", "promising profit, strategic market positioning, trust", "most investments processes are customer driven when it comes to product development and entering new markets." (C6)*

Market Creators seem to have a "hands-on" mentality when it comes to financial analysis as the quote of manipulating NPV calculations shows. Furthermore, if strategic considerations outweigh financial considerations they are more important, especially in the situation of acquiring another company.

> *"The reason why we managed to get this acquisition was because Henkel was competing with us. Either the acquisition went to Henkel or to us. We went to a board member and told them we need this. Then we went to the commission, then you can have anything you want in your NPV but when a board member agrees and the commission, it does not mean anything." (C6)*

The interview participant stated that if a board member can be convinced to agree on investing in a strategic project, this is of even more importance than a positive NPV.

> *"My big problem with NPV is that you change 1% somewhere and the values are influenced. It should be in the end value it should have a perpetual growth of 1% or 2% and depending on what work you have." (C6)*

Considering the SID making process the interview participant confirmed a very procedural process.

> *"Yes it is very procedural. Every month the commission meets to present your case as the commission allows you to make an appointment one month before the commission meets and if you miss the date to the appointment you miss the commission." (C6)*

Furthermore, strategic considerations within SID making processes are of particular importance for assessing the value of a new investment.

> *"It is difficult to answer but of course the more you know the market and the dynamic. Then you better understand if the investment makes sense or not. If not we try to get additional advisors to confirm." (C6)*

Market Creators are aware of *Anchoring* in SID. Only one *Market Creator* disagreed with the statement. The occurrence of *Affect Heuristic* is twofold. Half of the *Market Creators* answered that SID are made without personal preferences. All *Market Creators* agreed while only one *Market Creator* slightly disagreed with a score of three with the statement about *Group Thinking.* Hence, one can assume that decision makers are aware of the threat of *Group Thinking* and that companies endeavour an open form of discussion about investment projects. Only one *Market Creator* disagreed with the statement about *Sunk Cost Fallacy*. The future is more important for *Market Creators* than the recognition of similar past investments. Only one *Market Creator* disagreed with the statement about *Overoptimism*. The results show that *Market Creators* do assess different investment projects even if they have found one of particular interest. Only one disagreed with the statement. The results imply that the *Confirmation Bias* is not a threat for *Market Creators*.

In summary, *Market Creators* deliver the impression of focusing on both strategic and financial aspects with particular focus to strategy in their SID processes. Top-Managers play a very important role in these decisions and financial analysis can be altered to achieve certain outcomes. The majority of companies in this master thesis stated that managerial judgement is more important than financial analysis of investment projects. Considering all examined biases and heuristics *Market Creators* make SID rationally. Compared to the other classifications their averages for the behavioural finance statements lie in the very middle of all scores without any important deviations.

4.3.4 Value Creators

The *Value Creator* operates in very stable business environments and the market attractiveness is mediocre. The *Value Creator* is very much driven by a strong market orientation and tries to achieve competitive advantage through differentiation strategies. However, their performance is assessed against financial targets. Furthermore, the *Value Creator* is operating above shareholder expectations and with low influence on decision making.

The *Value Creator* does not stick closely to defined procedures in SID making. One can follow out of this result that SID procedures are rather informative than strictly defined. The *Value Creator* is using financial evaluation techniques in the early stages of SID and they are also regularly used in the final stage of the decision. Table 13 shows a small amount of techniques used by the *Value Creator*.

Classification	**Capital Budgeting Techniques**
Value Creators	NPV (1x), Pay-back (1x), Sensitivity (1x)

Table 13: Value Creators Capital Budgetting Techniques

However, similar to the *Restructurer* their scores for these statements are the lowest among the classifications. It must be highlighted that the evaluation of SID is left to the judgement of top-management. A strategic investment proposal will be rejected if its expected financial return does not meet the requirements for the return on investment. The *Value Creator* highly agrees that an investment project will be rejected if financial return requirements are met but it does not meet the expectations and intuition of top-managers. For the final evaluation of an investment project the managerial judgement is more important than the financial analysis. Among all classifications this is by far the lowest score, implying that managerial judgement is of huge importance. These findings so far imply that the *Value Creator* focuses to a great extent on strategic considerations made by management than on financial analysis.

The findings show that *Anchoring* might be an issue for the *Value Creator.* The *Value Creator* disagreed severely with the Anchoring statement. Given the fact that the *Value Creator* acts in line with shareholder expectations one can assume that controls are lower. Hence, these findings are reasonable. The *Value Creator* strongly disagreed with the statement about *Affect Heuristic*. The reason for that might be the same as for the *Anchoring Bias*. The *Value Creator* is very much aware of the threat of *Group Thinking* and one might conclude that the *Value Creator* endeavours an open form of discussion about investment projects. The *Value Creator* does not fall in the trap of sunk costs. The future assessment is of more importance than the past. The *Value Creator* also conducts a financial analysis even if a project seems to be very successful. Since the *Value Creator* acts in harsher markets it is reasonable to assume that financial analysis is still important. The findings might imply that the *Confirmation Bias* is prevalent in the assessment of SID by the *Value Creator*.

Additionally, to the questionnaire we followed-up with an interview to get further insights on the SID process of the *Value Creator*. The analysis reveals some kind of other picture than the pure assessment of the questionnaire. It seems that the *Value Creator* is indeed focusing to a greater extent on financial analysis while having in mind that business is made with people and that experience in an industry is also important.

> *"I'd say that sort of I come from a fairly traditional rational analysis [...] management level at the company and are very sort of data driven and relying on analytics and logical sort of rational analysis." (C2)*

Furthermore, the interview reveals that the *Value Creator* indeed focuses on rational decision making that is based on data and relying on analytics.

> *"In the end, it's I mean, we sit there in the room discussing, meeting the sellers and [...] looking into the company that we are thinking of buying in, and then suddenly there's a lot of sort of psychology and there's a lot of relations sort of undone and not so tangible sort of knowledge that goes into the equation." (C2)*

> *"[...] it's a bit difficult to describe [...] the pure analytics meeting in the reality that business is done in between people." (C2)*

These quotes also show that experience, people and intangibles are important aspects that are considered.

> *"[...] my experience after being in this business for 20 plus years is that personal preferences matter [...] they tend to sneak into the equation and decision process" (C2)*

This statement implies a rather twofold approach of making decisions:

> "*Facts and analysis meets gut feeling based on decades of doing business in our market". (C2)*

But it also becomes clear that rationality and managerial judgement should not be evaluated separately. As the interviewee states that managerial experience was developed over years by conducting sophisticated financial analysis.

> *"What is gut feeling and what are personal preferences really, to some extent, after 20 plus years in this business, I think that I might say that part of my gut feeling is the result of prior rational analysis." (C2)*

Moreover, rational decision-making could be linked with the educational background of the decision-makers as the *Value Creator* (C2) states in the interview:

> *"The large part of the management team and the company, overall company, have a scientific background. So, our CEO has a PhD in political science. And we have out of 150 employees, I would say we have 20 or so PhDs and sort of higher precision." (C2)*

To sum up the findings presented so far one can assume that the *Value Creator* is very sophisticated in assessing SID. Based on financial analysis, managerial judgement and experience is incorporated in the decision. Their approach to rational SID making is ambiguous. The *Value Creator* favours an open form of discussion reducing the threat of Group Thinking. For three out of six biases and heuristics the score is the lowest score. However, the analysis of the interview reveals that the *Value Creator* is aware of irrationalities that in some situations are needed to arrive at a sound decision about investment projects in particular when another company should be acquired. In total, they base their decision on rational decision making.

4.4 Industry Comparison

So far the thesis has analysed the characteristics of the four classifications. After doing this, the similarities and differences across the three selected industries are shown. As introduced in the beginning of this chapter the industries are grouped to:

- Manufacturing/Energy/Wholesale (ManuEnerWhole)
- Publishing/Media/Technology (PubMediaTech)
- Consultancy/Service Business (Consul/Service)

Picturing the three different industries in the framework shows how the different industries distinguish from each other. By far the most diversified industry is the Publishing/Media and

Technology sector. Nearly all four classifications are represented in this industry. The Consultancy and Service sector can be mostly classified as *Market Creators*. Only one company of that sector is classified as a *Refocuser*. The Manufacturing/Energy and Wholesale sector divides its companies between *Refocusers* and *Market Creators*.

Three of the five companies from the Publishing/Media and Technology sector represent the book publishing industry, with two publishing houses from Germany and one from Sweden. Publishing houses operate in a rather unattractive market segment. Two publishing houses focus on differentiation while the last one focuses on cost leadership. However, all three are controlled towards financial goals. Publishing houses perform on average according to shareholder expectations and shareholders have a rather strong influence.

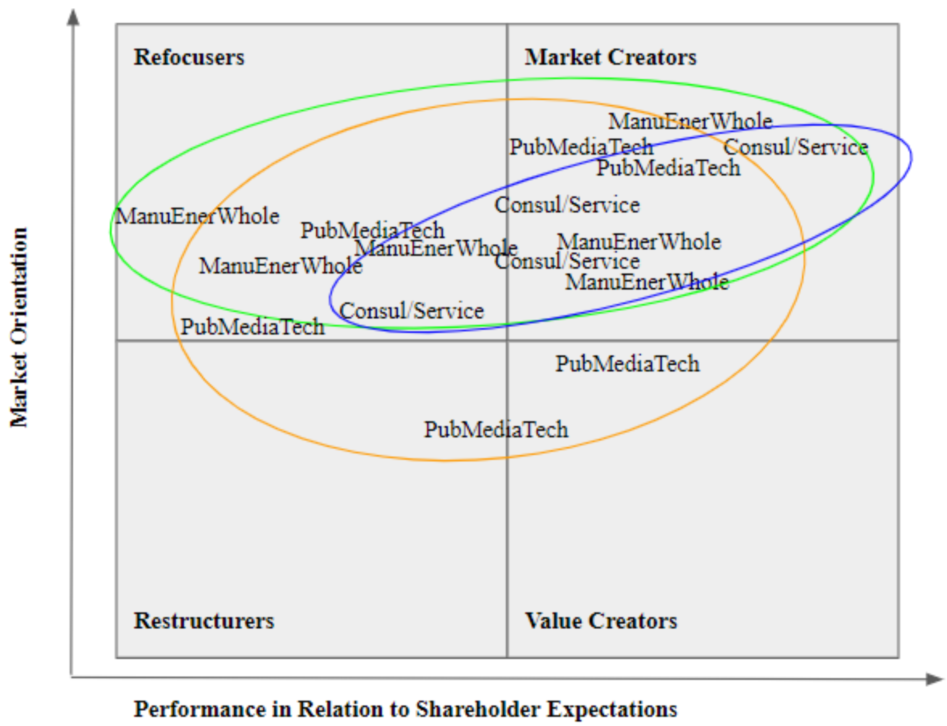

Figure 4: Classification of Different Industries

Comparing the German and the Swedish Market the Swedish publisher focuses very much on strategic aspects like differentiation and achieving market objectives compared to the German publishing houses.

Although one might assume that differences in these industries are small the findings of this thesis reveals that publishing houses are indeed quite diversified. However, similarities between the *Value Creator* from Sweden and the *Restructurer* from Germany can be identified. The analysis revealed that both companies show very similar characteristics when it comes to financial and strategic aspects of SID. Also, when it comes to behavioural finance aspects important characteristics can be identified. Both highly agreed that personal preferences are indeed incorporated in SID implying a rather irrational way of making these decisions. Furthermore, the findings suggest that both publishing companies are exposed to *Confirmation Bias* since alternative investment possibilities are not investigated if the two believe that they already have found a very valuable one.

The Manufacturing/Energy and Wholesale sector includes two *Refocusers* and three *Market Creators*. Companies operating in these industries are exposed to a rather dynamic business environment and attractive market segments on average. Companies in this sector are not particularly driven by financial nor strategic goals. They are focusing to a greater extent on differentiation. What catches the eye is the width of the circle compromising the companies which indicates various degrees of shareholder influence.

Due to the even number of *Refocusers* and *Market Creators* this sector summarizes to a great extent the financial, strategic and behavioural finance aspects of both of these classifications with no particular outstanding finding.

The Consulting and Service sector consists of a high degree of *Market Creators*. Three out of these four companies can be classified according to this. Hence, the findings for *Market Creators* pretty much apply for this sector.

5 Discussion

Within this chapter, the previous findings are discussed. The findings are compared to literature and compared to the preliminary framework in order to draw up conclusions on a final proposed extended framework.

5.1 Validation of the Preliminary Extended Framework

The following section is divided into the four classifications of the preliminary framework. In the end the framework is updated.

5.1.1 Refocusers

The preliminary framework suggests that *Refocusers* apply a holistic approach of analysis that incorporates financial and strategic considerations similarly. This characteristic is similar to *Value Creators*, however compared to them, *Refocusers* put high emphasis on in-depth financial analysis. The findings in this master thesis come to the same conclusion. *Refocusers* agreed to the highest extent to statements about financial analysis. Furthermore, they apply among the four classifications the most procedural approach of SID making.

In this regard, one also has to consider that the influence of top-management is the weakest of all classifications. One might argue that this finding further strengthens the position of financial analysis for *Refocusers*, since top-management is rather focusing on strategic aspects. It seems that central functions for instance the finance departments have a huge influence on SID processes. The influence of shareholders is particularly strong for *Refocusers* of the sample of this thesis, which might explain the reason for high procedurality and lower top-management influence.

The preliminary framework is based on the findings of Carr, Kolehmainen & Mitchell (2010) and in their study the classification of *Refocusers* were based on two different companies. One could have argued that this sample size is too small to make any general conclusions for this classification. However, the findings of this thesis consist of six different *Refocusers* which show similar findings as suggested in the preliminary framework. At this point, one might argue that the strategic and financial aspects in the preliminary framework for *Refocusers* are reasonable.

Since financial analysis is of particular importance for *Refocusers* one might have expected that *Refocusers* would make use of rather sophisticated budgeting techniques for instance economic ratios as NPV or IRR (Haka, 2007). As Haka (1969) showed the use of NPV techniques increases firm value which is the overall goal of most publicly listed companies. The results in this thesis show that accounting ratios were more often used by *Refocusers*. The reasons for that might be that most of the *Refocusers* in this sample are not publicly listed or that *Refocusers* have difficulties calculating cost of capital, future cash flows and project length and therefore, using accounting ratios as substitutes (Chen, 2008). Surprisingly, not *Refocusers* but *Market Creators* have made the most use of techniques such as NPV and IRR. However, all classifications use a combination of financial and strategic considerations when they evaluate investments. Hence, the call by Shank and Govindarajan (1993) and Adler (2000) to combine these, is put into practice by companies in this sample.

Refocusers are very rational in decision making. For four out of six biases *Refocusers* show the most rational approach to SID. They have a procedural approach of making SID, as they are acting in rather stable environments (Dean & Sharfman, 1993). These findings do not surprise considering the sophisticated and thoroughness of financial analysis. Rational behaviour can be expressed in terms of financial analysis since its results are fact based and not influenced by managers. Although it is possible to manipulate financial analysis this thesis could not find any hints that would support that flaw. The findings in this thesis put *Refocusers* even more in the light of rationality and their approach seems to be reasonable. Furthermore, their procedural SID making processes and the low influence of top-management strengthen the argument that *Refocusers* are sophisticated financial analysts focusing on rationality. We conclude that overall the suggested characteristics of the preliminary framework can be mostly confirmed by our research.

5.1.2 Restructurers

As the original framework by Carr, Kolehmainen & Mitchell (2010) suggests that *Restructurers* show strong emphasis on financial considerations. Our research indicates the opposite, in particular that the *Restructurer* does not necessarily have a strong emphasis on financial considerations. It can be argued that the market orientation position and the performance position *Restructurers* find themselves in on the preliminary framework characterizes to let *Restructurers* make more strategic oriented decisions. The argument that our research indicates a more strategic focus could indicate that the organisations that were initially investigated by the research of Carr, Kolehmainen & Mitchell (2010) operated in a traditional environment where financial considerations were of much more importance. Years later it can be argued that the *Restructurer* has changed to be more strategically oriented in strategic investment decision-making, our research shows evidence of the *Restructurer* being more strategically oriented. The Restructurer shows that gut feeling is more important than making rationalized decisions based on our research.

Furthermore, our research shows that the *Restructurer* has indeed tight financial targets to meet according to their orientation and performance. The interview with the *Restructurer* reveals that the most important objective is to generate returns. However, the way of arriving at this objective is very much based on the decision by the CEO and its managerial judgement. This is a clear sign of the presence of *Affect Heuristic* (Kahneman, Lovallo & Sibony, 2011). This finding argues against our preliminary framework and in particular to what Carr, Kolehmainen & Mitchell (2010) suggested, because financial analysis was the most important investment criteria.

The interview furthermore revealed the presence of the *Anchoring Bias.* The described acquisition was made on the very first assumption of adding roughly 20 Mio EUR of revenue, although the due diligence has shown rather low profitability in the later assessment of the acquisition (Tversky & Kahneman, 1974; Emmanuel, Harris & Komakech, 2010)

Analysing the scores about biases and heuristics show an ambiguous approach to rationality. The *Affect Heuristic* is very much prevalent for *Restructurers* revealing that personal preferences are indeed very important. On the other hand, *Restructurers* are very much aware of *Anchoring*. However, it shows the lowest scores for three out of six biases and heuristics among all classifications. Although the scores imply that *Restructures* still behave rationally their degree of rationality is one of the lowest. These findings go against the findings of Dean and Sharfman (1993) who showed that rationality was highest for firms that faced competitive threats in the market.

It is found that the *Restructurer* acts rather irrational. This finding goes very much against the preliminary framework, which suggested a high degree of rationality for SID for *Restructurers.* As elaborated in the limitations, the sample size of this thesis incorporates only one *Restructurer* and the findings have to be evaluated carefully. The only reason for the characteristics of the *Restructurer* might be explained by the industry it operates in. Since the *Value Creator* operates in the same industry and kind of shows the same characteristics for some parts as the *Restructurer* this reason has to be considered.

Restructurers are financially considerate and focussed on meeting tight financial targets, so it startles to believe that *Restructurers* are acting irrational according to our research. As already mentioned above, the *Restructurer* in this sample does not have that higher focus on financial analysis as originally suggested by the preliminary framework. Nevertheless, its approach to SID making is still sophisticated and holistic. *Restructurers* have made plenty of use of different capital budgeting techniques. The *Restructurer* showed signs of irrational behaviour when new opportunities arise, gut feeling takes over and it can be concluded by data that gut feeling plays a role. Therefore, *Restructurers* rely on managerial judgement and experience as well. These findings are somewhat surprising because one would expect that *Restructurers* would behave the most rational among the classifications. However, it is the other way around.

A glance at the industry reveals that the *Restructurer* operates within the book publishing industry. The results of the *Value Creator* can be compared to the *Restructurer* when it comes to rationality. Both have scored fairly identical and "gut feeling" and managerial experience is important. One might conclude that these are necessities of doing business in the publishing sector.

5.1.3 Market Creator

The preliminary framework suggests that *Market Creators* focus more on strategic than on financial considerations. Our research led to the finding that our participants are considerate in their strategic and financial orientation which is also in correspondence with literature (Adler, 2000; Shank & Govindarajan, 1993; Slagmulder, Bruggeman & van Wassenhove, 1995; Van Cauwenbergh, Durinck, Martens, Laveren, & Bogaert, 1996). Moreover, managerial judgement is highly important within the *Market Creator* type. Furthermore, our research shows signs that the *Market Creators* are more oriented towards achieving strategic targets than financial targets. However, the gap between both is not that large as suggested. It is indeed concluded by our research that financial analysis does play a supportive role in assessing SID which is in accordance with the preliminary framework. Moreover, managerial judgement is still more important than purely relying on financial judgement. *"Financial analyses have a more supportive role and they are likely to be over-ridden or even manipulated by decision-makers."* (Carr, Kolehmainen & Mitchell, 2010, p. 177). This is in accordance with our data from the questionnaire and the interview respondent. From the interview and the way of answering it was clear that if the managerial judgement was more important than financial analysis for the final SID (Northcott & Alkaraan 2013; Emmanuel, Harris & Komakech, 2010). In addition, in support of this statement, the ease with which the net present value can be changed to obtain more favourable results is mentioned.

On the contrary, the preliminary framework argues that *Market Creators* show flexibility in meeting financial targets and showed that strict financial targets could be considered a hindrance towards growth. The questionnaire data contradicts this point as it shows that financial targets have to be met and that there is barely any flexibility in financial target setting. However, this does contradict with the following that the respondents view the SID process as rather loose. In essence, this can be explained as mentioned before that managerial judgement can overrule financial analysis and that financials can be tampered with in order to achieve a favourable gain. Both our findings and Carr, Kolehmainen & Mitchell (2010) showed that *Market Creators* use simplified capital budgeting techniques and favour pay-back techniques. Using these techniques can be explained from a literature point of view as they reflect better on the strategic approach and financial approach (Alkaraan & Northcott, 2006). These techniques enhance the opportunity for a better position in a growth market. However, our findings show that *Market Creators* made plenty of use of NPV techniques although they are willing to manipulate the results. This also shows a degree of irrationality as Hamada (1969) showed that the use of NPV techniques increases firm value. It might also resemble the fact that *Market Creators* operate in dynamic, growing markets with unstable cash flows where the use of NPV is not value adding (Chen, 2008).

In relation to financial synergies, it is stated by Carr, Kolehmainen & Mitchell (2010) that *Market Creators* show a bold attitude towards incorporating synergies. In our opinion, this is due to that synergies are more complex which makes it much harder to manipulate in order to gain a favourable outcome. It is rather more effective to gain a positive result which is needed if the SID needs to be justified to management or a corporate finance commission as our interviewee mentioned. According to our empirical data there are hardly any comparisons to be found during the different geographical regions. All the answers are relatively similar. Furthermore, within the segments it is interesting to see that the industries cluster nicely together on providing similar results. Except between the consultancy industry there can be significant differences found in the way of analysis. There are three companies present. One of them (C8) has only one employee which shows significant differences in the way financial analysis is constructed and more gut-feeling is conducted. On the other hand, the other two companies operating in the same industry show similar characteristics throughout the data.

Furthermore, the findings in this thesis show that *Market Creators* focus on accomplishing strategic goals, relying on managerial judgement, and experience. These findings highly resemble the term *strategy formulation by* Northcott and Alkaraan (2013). The findings also suggest that managers favour projects that suit their expectations, intuitions and what fits best to the strategy of the company (Northcott & Alkaraan, 2013).

The findings in this thesis are to a certain degree in line with what can be expected from the literature review. Considering all examined biases and heuristics *Market Creators* make rational SID. In regard to *Market Creators* the occurrence of biases and heuristics lied in the very middle of all scores without any important deviations. *Market Creators* are aware of biases and heuristics. Our findings indicate that decision-making is rational and not irrational as assumed previously. However, the altering of financial analysis is highly irrational and a strong hint that reality can be changed to what is expected by *Market Creators*.

The *Group Thinking* bias which resembles unanimity and fear (Kahneman, Lovallo & Sibony, 2011) in group decisions is highly present within the *Market Creators*. Due to the high possibility of changing financial variables or opting for managerial judgement, groups can propose certain investments in the initial stage and proposing optimal NPV positives. Later in the final stages of SID, when the investments have to be evaluated and NPV is much lower than initially expected, the bias of *Group Thinking* can be enhanced as the proposal project group does not want to be thought badly of by top management or a corporate finance evaluations committee. Furthermore, the *Confirmation* and *Overoptimism Bias* are present within the *Market Creators* since the high degree of managerial judgement could be that financial analysis is neglected.

Moreover, as our interviewee (C6) mentioned that competition was threatening with purchasing a valuable acquisition. Managerial judgement was the decisive factor in acquiring this organization. Thus, enabling a confirmation and overoptimism bias. The opinion is created that *Market Creators* solemnly rely on managerial judgement and that it overrules financial judgement in any way. The interview furthermore showed the presence of Affect Heuristic, as the CEO really wanted to acquire that company (Kahneman, Lovallo & Sibony, 2011).

Market Creators fall in the danger of overoptimism due to not looking at the complete picture when analysing new SID. Highly interesting is that the phenomena of overoptimism caused by managerial judgement is rather irrational but through our research data it shows that *Market Creators* are highly rational.

5.1.4 Value Creators

The findings in this thesis show that the *Value Creator* is the one with the least procedural approach in SID making among all classifications. One explanation for that is most likely the looser control by shareholders. Together with *Market Creators* the procedural approach is the lowest. However, since only one *Value Creator* is part of the data in this thesis the generalisability is low. The reason for that might be other contextual factors like firm size, country, and industry. Since the firm size is rather small this factor might explain that difference. Smaller firms tend to have less procedural approaches than bigger companies, because they do not have to centralize that much decision making. Additionally, processes can be defined less strictly since people involved are smaller than in companies.

The comparison to other publishing houses in this sample shows that all three publishing houses in this sample have low procedural approaches to SID. One might follow out of this that publishing houses have low procedural approaches and furthermore, that there might be similarities between Germany and Sweden in this industry. The third publishing house in the sample is classified as a *Refocuser* and shows the highest rationality as expected. However, the respondent evaluated the market environment more attractive than the other ones. Publishing markets are in itself divided into different sub-markets and one explanation could be that the *Refocuser* acts in a more attractive sub-market than the other publishing markets. Nevertheless, the performance falls behind expectations of shareholders.

The findings in this master thesis show that the *Value Creator* employs a holistic approach to strategic and financial considerations in SID making. Furthermore, the findings are similar to the preliminary framework which states that the *Value Creator* focuses on both financial and strategic aspects and tries to incorporate both aspects into thorough investment appraisals. The *Value Creator* stated that NPV, pay-back and sensitivity financial budgeting techniques are used. This comprehensive use of techniques accompanies the sophisticated approach of the *Value Creator* to assess investment projects. Although the sample size consists of only two Swedish companies the thesis suggests that also small Swedish companies are using sophisticated budgeting techniques and that small companies have followed up to big companies and have become more sophisticated over the years (Sandahl & Sjögren, 2003; Daunfeldt & Hartwig, 2014). Analysing the Germany companies in that sample and the use of capital budgeting techniques we can conclude that German companies are indeed using NPV techniques regularly and that they have closed the gap to the past (Carr, 2005). The findings about capital budgeting techniques in this thesis are comparable to the findings of Carr, Kolehmainen & Mitchell (2010). The four different classifications made use of both accounting and economic techniques. Mostly used were NPV, IRR and pay-back techniques. However, *Refocusers* have made more use of accounting techniques which is different to the findings of Carr, Kolehmainen & Mitchell (2010).

However, the findings of this thesis also suggest an ambiguous picture of the *Value Creator* that is difficult to capture and classify. The quantitative findings in the questionnaire reveal that financial analysis is less important compared to other classifications. Furthermore, decision making processes are less procedural and the *Value Creator* has strongly stated that managerial judgement is more important than financial analysis for the final decision. One might conclude at this point that low shareholder influence might be the reason for that but the semi-structured interview with the *Value Creator* draws a different picture. The approach of the *Value Creator* is indeed highly sophisticated and lies a strong focus on rational, financial decision making. Hence, it is surprising that managerial judgement is the most important factor in the final decision.

The *Value Creator* said the basis of the decision making process is a rational financial analysis that is accompanied by irrationality and decision makers of other companies for instance in the case of an acquisition. The *Value Creator* shows a combination of both gut feeling and meeting facts and analysis. Furthermore, the *Value Creator* stated that gut feeling and managerial judgement has been developed over 20 years of market experience and thorough financial analysis over the years. This statement shows that decision makers might have started to decide only on financial analyses in their early careers and shift towards managerial judgement if patterns in financial analysis and firm characteristics can be spotted over the years that develop gut feeling. Without taking into account the time decision, one might conclude a rather irrational behaviour if gut feeling is part of decision making. Hence, one should not make conclusions too fast if gut feeling is part in decision making. If gut feeling was built on years of financial analysis this rather irrational approach becomes highly valuable. It can be concluded that rationality in decision-making might be linked with the educational background of the decision-makers as this could be concluded from the semi-structured interview with the *Value Creator*.

From a behavioural finance point of view the *Value Creator* highly reveals the image of both reflective and intuition thinkers (Kahneman, Lovallo & Sibony, 2011). Reflective in most aspects of evaluating investment projects and intuitive when gut feeling is part of the investment appraisal. The rational approach of the *Value Creator* might lead to the conclusion that biases such as *Overoptimism, Group Thinking and Confirmation Bias* are low. It does not seem that the *Value Creator* would make a fast and unreflective decision when they invest their money long term.

Nevertheless, to grasp the characteristics of the *Value Creator* is difficult. At this point however, one might conclude that their approach to SID is not less sophisticated than *Refocusers* although one might expect that because of lower shareholder influence. *Value Creators* deliver the picture of sophisticated and reflective decision makers. Their approach is very much driven by procedural rationality as defined by (Dean & Sharfman, 1993) and further examined by (Northcott & Alkaraan, 2013). Dean and Sharfman (1993) found that rationality was the highest for firms in competitive markets and when external control was limited. This is exactly what characterises the *Value Creator* in this thesis.

The sample size of this thesis prohibits further investigation of the *Value Creator* for instance by comparing the findings to other industries or countries and even other *Value Creators* itself. Nevertheless, this thesis argues that the findings of the mixed method approach are comprehensive and create a good picture of a *Value Creator*.

5.2 The Revised Framework

In section 3.8 the researchers showed a preliminary extended framework built on the framework of Carr, Kolehmainen & Mitchell (2010). As part of our research the structured literature review is considered a finding and based on the literature a preliminary extended framework was created. After gathering our empirical data the literature based framework can be tested and validated with the gathered empirical data. Interesting to note is that it can be concluded that literature predicts or shows certain theories that are believed to benefit in practice. However, our data suggest some gaps between theory vs. practice and that not all the theory applied actually works in practice. The adjusted extended framework is an improved version based on a combination of literature and empirical data. The orange text shows improvements from the preliminary literature framework found in section 3.8.

Moreover, the added rationality and bias findings are marked in blue and are adjusted from the original. Lastly, in our preliminary framework the added dimension of *"Increased managerial judgement vs. rationality"* is taken out of the final framework. This is due to the fact that our empirical findings could not show and support our reasoning for updating and including the dimension. Mainly, because the *Restructurer* did not show a rational but a rather irrational behaviour, that was even more irrational than that of the *Market Creators*.

> *The findings in this thesis show a stronger focus on financial analysis than on strategic considerations for* ***Refocusers****. Furthermore,* ***Refocusers*** *show the lowest degree of influence on SID by managerial experience and judgement. The results of financial analysis are more important than managerial judgement. The top-management influence on SID is the lowest compared to the other classifications. In combination to that* ***Refocusers*** *show the highest degree of rationality. For four out of six biases we have investigated* ***Refocusers*** *scored in the most rational way. The findings in this thesis suggest that there is a connection between financial analysis and rationality. The findings confirm mostly the suggestion in the preliminary framework.*
>
> ***The Restructurer*** *reveals a different picture in the data of this thesis than expected and suggested by the preliminary framework. Financial analysis seems not to be of that high importance compared to the other classifications. Rather the influence of top-management and managerial judgement are strongly involved when it comes to SID. Although the* ***Restructurer*** *decides on average rationally, biases and heuristics are prevalent. For three out of six biases and heuristics, the* ***Restructurers*** *shows the lowest degree of rationality compared to the other classifications. Compared to the suggested preliminary framework The* ***Restructurer*** *has revealed a rather contradicting image, because the financial analysis is not that important. However, one has to consider the small sample size of Restructurers in this thesis and the results have to be evaluated carefully.*

*Our findings suggest that the process of decision making of **Market Creators** is indeed rational and not irrational as assumed. Market Creators show a medium degree of rationality. They are not irrational but also not the most rational among the four classifications. However, the altering of financial analysis is highly irrational and a strong hint that reality can be changed to what is expected by Market Creators.*

*This thesis draws an ambiguous picture of **Value Creators.** Both financial and strategic considerations are important for Value Creators. However, financial analysis is more important than strategic analysis according to our findings. Their approach of analysing investment projects is sophisticated and based on rational financial analysis. However, biases exist to some degree and managerial experience based on long-term industry experience is incorporated into decision making. **Value Creators** create the image of very sophisticated decision makers.*

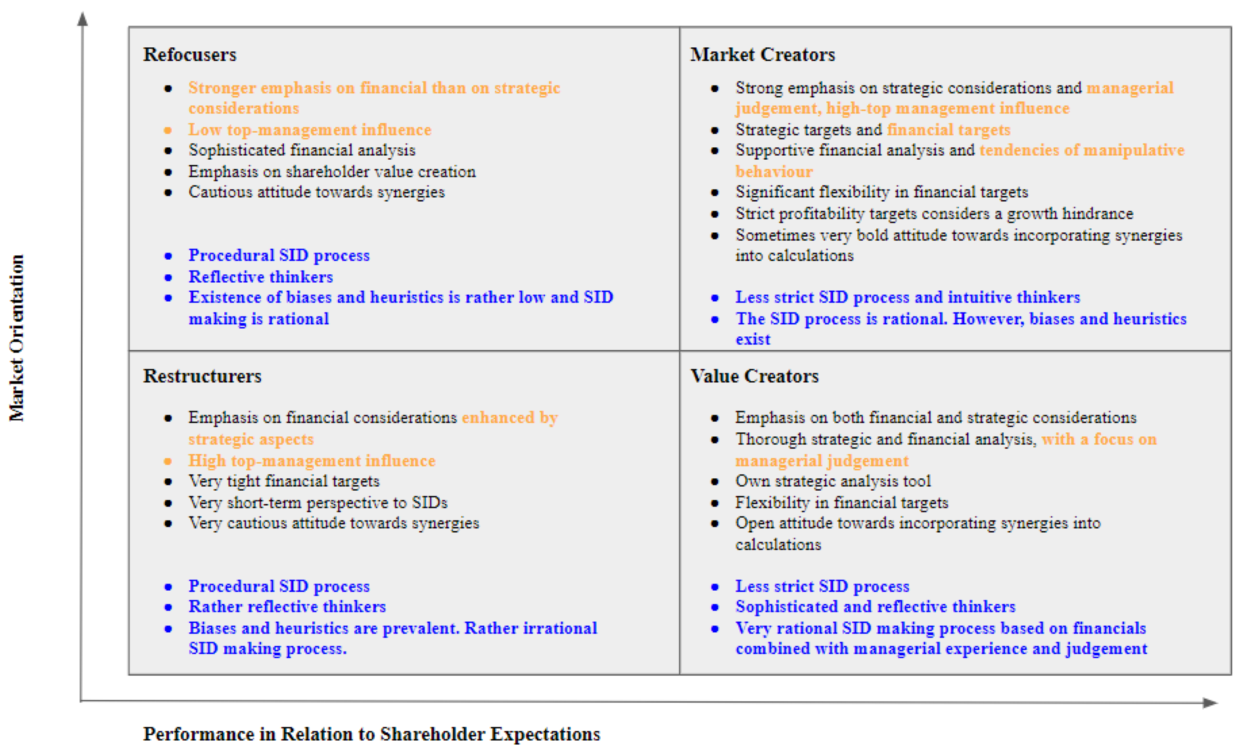

Figure 5: The Final Extended Framework

Since, the data consists of only one *Value Creator* the results have to be evaluated carefully. The image of *Value Creators* in this thesis might be only explained because of industry characteristics. The findings in this thesis could not verify increased managerial judgement vs. rationality beginning from the bottom left of the framework to the top-right. The findings show that *Refocusers* and *Value Creators* have the highest degree of rationality in their SID making processes.

6 Conclusion

In this chapter we demonstrate what contribution our paper is giving to research. Moreover, the limitations of the thesis are explained and suggestions for future research are proposed.

6.1 Contributions

The contribution of this thesis is an update of the framework developed by Carr, Kolehmainen & Mitchell (2010) and an enhancement of the four classifications with behavioural finance aspects. We found that the four classifications in the revised framework can be used to explain differences of SID in corporate contexts. However, the findings of this thesis might suggest that there is no clear line between financial vs strategic orientation between the classifications as originally argued by Carr, Kolehmainen & Mitchell (2010). It is correct that *Market Creators* show the highest strategic orientation, but all three other classifications show somewhat similar focus on financials with only marginal differences.

We were able to answer the research question by identifying the degree of rationality and in particular biases and heuristics in SID and its connection to strategic and financial considerations. This master thesis enhanced the framework by Carr, Kolehmainen & Mitchell (2010). The framework is now capable of better understanding the differences in SID in practice. In the research landscape this thesis can be understood as a bridge between biases and heuristics in decision making and SID in corporate context. Since, most of the literature about behavioural finance has focused on individual decision making in capital markets we examined the presence of biases and heuristics for SID of corporations.

This thesis identified differences and similarities for the SID within industries by making use of the extended framework. In particular, the publishing industry in Germany and Sweden was examined. Furthermore, this thesis updates the use of capital budgeting techniques in Germany in Sweden.

6.2 Limitations

The findings in this thesis for *Restructurers* and *Value Creators* must be evaluated carefully, since only one company showed these characteristics respectively. The described characteristics might not resemble particularly the classifications of *Restructurers* and *Value Creators* but rather the publishing industry from which both companies are from. Furthermore, due to the small sample size findings for the classifications cannot be generalised. This also applies for the findings for the different industries and capital budgeting techniques used.

As it is already described in the methodology section biases and heuristics belong to the field of psychology. The usual approach of conducting research in this field is done by experimental settings where the participants are examined also in connection to their environment and situational setting. The approach of assessing the occurrence of biases and heuristics by questionnaires and interviews is biased in itself. Firstly, the framing of the questions might be misunderstood by the participants which results in wrong results and conclusions. Secondly, the degree of biases and its particular characteristics are difficult to assess. Furthermore, direct questions in personal interviews about biases are biased too. Psychological concepts as biases and heuristics in decision making of humans are not made consciously. They are rather rooted in intentional and unintentional thinking performed unconsciously by the brain. The findings in this thesis are therefore only indicators about the degree of rationality in business contexts.

6.3 Future Research

For future research it would be beneficial to further test the framework that we have developed in this thesis to get further information about how rationality is part of SID. In particular, the degree of rationality for the different classifications needs to be verified and enhanced to better understand SID in corporate context. As mentioned in the limitations, our data had only one *Restructurer* and one *Value Creator*. However, for future purposes, it would be of particular interest to focus more on these categories. Additionally, the research conducted by Carr, Kolehmainen & Mitchell (2010) was based on only two companies in the *Restructurer* area and three in the *Value Creator* area. We argue that these two classifications should be examined in more depth and might be reshaped as our assumption is that they might be outdated.

In the future, it would be beneficial to test our findings and create a larger sample. Moreover, the conclusions that were made could have slightly differed if the data was more saturated. Furthermore, it would be of interest to examine other biases and heuristics in the context of SID.

References

Adler, R. W. (2000). Strategic Investment Decision Appraisal Techniques: The Old and the New, *Business Horizons*, vol. 43, no. 6, p.15.

Alkaraan, F. & Northcott, D. (2006). Strategic Capital Investment Decision-Making: A Role for Emergent Analysis Tools?: A Study of Practice in Large UK Manufacturing Companies, The British Accounting Review, vol. 38, no. 2, pp.149–173.

Alkaraan, F. & Northcott, D. (2013). Strategic Investment Decision-Making Processes: The Influence of Contextual Factors, *Meditari Accountancy Research*, vol. 21, no. 2, pp.117–143.

Alpert M., and H. Raiffa (1982), "A Progress Report on the Training of Probability Assessors," in D. Kahneman, P. Slovic and A. Tversky, eds., *Judgment Under Uncertainty: Heuristics and Biases,* Cambridge: Cambridge University Press.

Barberis, N. & Thaler, R. (2002). A Survey of Behavioral Finance, Working Paper, 9222, National Bureau of Economic Research, Available Online: http://www.nber.org/papers/w9222 [Accessed 21 April 2020].

Bell, E., Bryman, A. & Harley, B. (2019). Business Research Methods, Fifth edition Emma Bell, Alan Bryman, Bill Harley., Oxford University Press.

Boedeker, R. R., Hughes, S. B. & Paulson Gjerde, K. A. (2011). Capital Investment Decisions: Moving beyond Traditional Financial Models, *Journal of Corporate Accounting & Finance (Wiley)*, vol. 22, no. 3, pp.53–61.

Brownlie, D. (1985). Strategic Marketing Concepts and Models, *Journal of Marketing Management*, vol. 1, no. 2, pp.157–194.

Bryman, A. & Bell, E. (2011). Business Research Methods, 3. ed., Oxford University Press.

Butler, R., Davies, L., Pike, R. & Sharp, J. (1991). Strategic Investment Decision-Making: Complexities, Politics and Processes, *Journal of Management Studies (Wiley-Blackwell)*, vol. 28, no. 4, pp.395–415.

Carr, C. (2005). Are German, Japanese and Anglo-Saxon Strategic Decision Styles Still Divergent in the Context of Globalization?, *Journal of Management Studies (Wiley-Blackwell)*, vol. 42, no. 6, pp.1155–1188.

Carr, C., Kolehmainen, K. & Mitchell, F. (2010). Strategic Investment Decision Making Practices: A Contextual Approach, *Management Accounting Research*, vol. 21, no. 3, pp.167–184.

Carr, C. & Tomkins, C. (1996). Strategic Investment Decisions: The Importance of SCM. A Comparative Analysis of 51 Case Studies in U.K., U.S. and German Companies, *Management Accounting Research*, vol. 7, no. 2, pp.199–217.

Chen. (2008). DCF Techniques and Nonfinancial Measures in Capital Budgeting: A Contingency Approach Analysis, *Behavioural Research in Accounting*, vol. 20, no. 1, pp.13–29.

Daunfeldt, S.-O. & Hartwig, F. (2014). What Determines the Use of Capital Budgeting Methods? Evidence from Swedish Listed Companies, *Journal of Finance and Economics*, vol. 2, no. 4, pp.101–112.

Dean, Jr., James W. & Sharfman, M. P. (1993). Procedural Rationality in the Strategic Decision-Making Process, *Journal of Management Studies (Wiley-Blackwell)*, vol. 30, no. 4, pp.587–610.

Emmanuel, Harris & Komakech. (2010). Towards a Better Understanding of Capital Investment Decisions, *Journal of Accounting & Organizational Change*, vol. 6, no. 4, pp.477–504.

Fischhoff B., Slovic, P., and S. Lichtenstein (1977), "Knowing With Certainty: The Appropriateness of Extreme Confidence," *Journal of Experimental Psychology: Human Perception and Performance* 3, 552-564.

Govindarajan, V. & Gupta, A. K. (1985). Linking Control System to Business Unit Strategy: Impact on Performance, *Accounting, Organizations & Society*, vol. 10, no. 1, pp.51–66.

Graham, J. R. & Harvey, C. R. (2001). The Theory and Practice of Corporate Finance: Evidence from the Field, *Journal of Financial Economics*, vol. 60, no. 2–3, pp.187–243.

Haka, S. F. (1987). Capital Budgeting Techniques and Firm Specific Contingencies: A Correlational Analysis, *Accounting, Organizations & Society*, vol. 12, no. 1, pp.31–48.

Haka, S. F. (2007). A Review of the Literature on Capital Budgeting and Investment Appraisal: Past, Present, and Future Musings, in C. S. Chapman, A. G. Hopwood, & M. D. Shields (eds), *Handbooks of Management Accounting Research*, Vol. 2, [e-book] Elsevier, pp.697–728, Available Online: http://www.sciencedirect.com/science/article/pii/S1751324306020104 [Accessed 22 April 2020].

Hales, G. & Mclarney, C. (2017). Uber's Competitive Advantage Vis-à-Vis Porter's Generic Strategies, *IUP Journal of Management Research*, vol. 16, no. 4, pp.7–22.

Hamada, R. S. (1969). Portfolio Analysis, Market Equilibrium and Corporate Finance, *Journal of Finance (Wiley-Blackwell)*, vol. 24, no. 1, pp.13–31.

Kahneman, D., Lovallo, D. & Sibony, O. (2011). Before You Make That Big Decision..., *Harvard Business Review*, vol. 89, no. 6, p.50.

Kumar, S. & Goyal, N. (2016). Evidence on Rationality and Behavioural Biases in Investment Decision Making, *Qualitative Research in Financial Markets*, vol. 8, no. 4, pp.270–287.

Miles, R. E. & Snow, C. C. (2003). Organizational Strategy, Structure, and Process, Stanford University Press.

Mintzberg, H., Raisinghani, D. & Théorêt, A. (1976). The Structure of 'Unstructured' Decision Processes, *Administrative Science Quarterly*, vol. 21, no. 2, pp.246–275.

Northcott, D. & Alkaraan, F. (2007). Strategic Investment Appraisal in Issues in Management Accounting, Third Edition Eds Hopper T, Northcott D, Scapens R. Prentice Hall., in *Issues in Management Accounting*, pp.199–221.

Oldman, A. & Tomkins, C. (1999). Cost Management and Its Interplay with Business Strategy and Context, Routledge.

Patton, M. Q. (2015). Qualitative Research & Evaluation Methods : Integrating Theory and Practice, 4. ed., SAGE Publications, Inc.

Porter, M. E. (1980). Competitive Strategy : Techniques for Analyzing Industries and Competitors, Free Press.

Porter, M. E. (1985). Competitive Advantage : Creating and Sustaining Superior Performance, Free Press.

Porter, M. E. (1996). What Is Strategy?, *Harvard Business Review*, vol. 74, no. 6, pp.61–78.

Robinson, S. (1978). The Directional Policy Matrix—Tool for Strategic Planning, *Long Range Planning*, vol. 11, no. 3, pp.8–15.

Sandahl, G. & Sjögren, S. (2003). Capital Budgeting Methods among Sweden's Largest Groups of Companies. The State of the Art and a Comparison with Earlier Studies, *International Journal of Production Economics*, vol. 84, no. 1, pp.51–69.

Shank, J. K. & Govindarajan, V. (1993). Strategic Cost Management : The New Tool for Competitive Advantage, Free Press.

Simons, R. (1987). Accounting Control Systems and Business Strategy: An Empirical Analysis, *Accounting, Organizations & Society*, vol. 12, no. 4, pp.357–374.

Slagmulder, R., Bruggeman, W. & van Wassenhove, L. (1995). An Empirical Study of Capital Budgeting Practices for Strategic Investments in CIM Technologies, *International Journal of Production Economics*, vol. 40, no. 2, pp.121–152.

Slovic, P., Finucane, M. L., Peters, E. & MacGregor, D. (2007). The affect heuristic, *European Journal of Operational Research,* vol. 177, no 3, pp.1333-1352

Tversky, A. & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases, *Science*, vol. 185, no. 4157, pp.1124–1131.

Van Cauwenbergh, A., Durinck, E., Martens, R., Laveren, E. & Bogaert, I. (1996). On the Role and Function of Formal Analysis in Strategic Investment Decision Processes: Results from an Empirical Study in Belgium, *Management Accounting Research*, vol. 7, no. 2, pp.169–184.

Weinstein, N. (1980), "Unrealistic Optimism about Future Life Events" *Journal of Personality and Social Psychology* 39, 806-820.

Wolfswinkel, J. F., Furtmueller, E. & Wilderom, C. P. M. (2013). Using Grounded Theory as a Method for Rigorously Reviewing Literature, *European Journal of Information Systems*, vol. 22, no. 1, pp.45–55.

Yin, R. K. (2014). Case Study Research : Design and Methods, 5. ed., SAGE.

Appendix

Appendix 1: Google Forms Questionnaire

Questionnaire Master Thesis Strategic Investment Decisions

The following questionnaire was designed to gather information for our master thesis about strategic investment decisions. Our research consists of studying driving forces behind strategic investment decisions from a finance, non-financial and behavioural finance perspective.

All information about participants and companies are handled confidentially and are later anonymised. The questionnaire will take approximately 10-15 minutes. Please answer the questions as detailed as possible.

Please reflect on your answers as you would have prior to the COVID-19 pandemic.

Thank you very much for participating!

Best regards,
Joran Bos & Max-Lennart Albrecht
Master Students Accounting & Finance 19/20
Lund University School of Economics and Management

*Required

1. Email address *

____

LUND UNIVERSITY
School of Economics and Management

2. Please enter your name. *

____

3. Please mention the name of your company. *

____

4. What is your position at the company? *

____

5. In which industry operates the company? *

6. How many employees work for the company? *

Market context of your company

Please mark on the following scales how you evaluate the current market situation in which your company operates. The scales go from 1 to 7. Both sides resemble two different conditions. In the middle, both conditions are equal and resemble a neutral answer.

7. How would you generally evaluate the business environment in which your company operates? The following aspects might help you answer the question. Stability of revenues, regulatory changes, political influences, etc. *

Mark only one oval.

	1	2	3	4	5	6	7	
extremely stable environment	◯	◯	◯	◯	◯	◯	◯	extremely dynamic environment

8. How would you evaluate the attractiveness of the market segment in which your company operates? The following aspects might help you answer the question. Are there many new entries from competitors? Is the market growing? Is it possible to earn high margins in this market? *

Mark only one oval.

	1	2	3	4	5	6	7	
very low market attractiveness	◯	◯	◯	◯	◯	◯	◯	very high market attractiveness

Strategic Orientation of your Company

Please mark on the following scales how you evaluate the strategic orientation of your company. The scale goes from 1 to 7. Both sides resemble two different conditions. In the middle, both conditions are equal and resemble a neutral answer.

9. Is your company driven by financial objectives or is it more important to achieve market objectives? *

Mark only one oval.

	1	2	3	4	5	6	7	
very strong financial orientation	◯	◯	◯	◯	◯	◯	◯	very strong market orientation

10. Is your company focusing on having the lowest cost structure as a competitive advantage or is it focusing on developing various different products/services to distinguish itself from competitors? *

Mark only one oval.

	1	2	3	4	5	6	7	
purely cost leadership	◯	◯	◯	◯	◯	◯	◯	purely differentiation

11. Is the performance of different divisions/parts/managers assessed against financial goals or is it rather focusing on how strategic targets have been reached? *

Mark only one oval.

	1	2	3	4	5	6	7	
extreme financial control style	◯	◯	◯	◯	◯	◯	◯	extreme strategic planning style

Performance in Relation to Shareholder Expectations

Please mark on the following scales how you evaluate the performance of your company. The scale goes from 1 to 7. Both sides resemble two different conditions. In the middle, both conditions are equal and resemble a neutral answer.

12. Do your shareholders regard the company to be in a financial crisis at the moment or is it performing above expectations of shareholders? *

Mark only one oval.

	1	2	3	4	5	6	7	
severe financial crisis	◯	◯	◯	◯	◯	◯	◯	performance above expectations

13. Do your shareholders have a strong influence on decision making in the company and on the future orientation of the company? *

Mark only one oval.

	1	2	3	4	5	6	7	
very high shareholder influence	◯	◯	◯	◯	◯	◯	◯	very low shareholder influence

Strategic Investment Decision Making Process in Your Company

Please mark on the following scales to what extent you agree on the following statements. The scales go from 1 to 7. Both sides resemble two different conditions. In the middle, both conditions are equal and resemble a neutral answer.

Definition: Strategic Investment Decision

Strategic investment decisions as investments that commit the organisation to a new strategic direction. Strategic investments involve significant long-term financial commitments, slow-to-materialise benefits and high levels of uncertainty. Examples of strategic investment decisions are development of new products, adoption of new production technology or production lines, entering new markets, M&As, asset restructuring, enhancement of production capacity or marketing competency, and etc.

14. In our decision-making process, we stick closely to the defined procedures and we do not deviate from this process. *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly disagree	◯	◯	◯	◯	◯	◯	◯	strongly agree

15. Financial evaluation techniques are often used in the early analysis of strategic investments and are important in our decision-making process. *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly disagree	◯	◯	◯	◯	◯	◯	◯	strongly agree

16. Financial evaluation techniques are regularly used in the final choice of strategic investments. *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly disagree								strongly agree

17. The evaluation of strategic investments is left to the judgement of top management. *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly disagree								strongly agree

18. A strategic investment proposal will be rejected if its expected financial return does not meet the minimum requirements of return on investment set by the company. *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly disagree								strongly agree

19. A strategic investment proposal whose expected financial return meets the minimum requirements of return on investment can be rejected if it does not satisfy the expectations and intuition of the top managers. *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly disagree								strongly agree

20. When the final decision about strategic investments is made, the financial analysis is a more important factor than managerial judgement (management experience, intuition, individual assessment of the situation, etc.). *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly disagree	◯	◯	◯	◯	◯	◯	◯	strongly agree

21. Financial estimates about future returns of the investment project are constantly reassessed and questioned. *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly disagree	◯	◯	◯	◯	◯	◯	◯	strongly agree

22. The evaluation of strategic investments is conducted without consideration of personal preferences of the decision-maker. *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly disagree	◯	◯	◯	◯	◯	◯	◯	strongly agree

23. Disagreement between the people involved in the strategic investment decision process can be addressed openly when it comes to decision-making even if this disagreement results in conflict *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly disagree	◯	◯	◯	◯	◯	◯	◯	strongly agree

24. For the evaluation of strategic investments the future conditions are more important than the results of similar past investments *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly disagree	◯	◯	◯	◯	◯	◯	◯	strongly agree

25. Even if a project seems to be very successful a comprehensive financial analysis is conducted. *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly disagree	◯	◯	◯	◯	◯	◯	◯	strongly agree

26. In our investment decision process, multiple options or other alternatives are fully evaluated in an objective and fact-based way even if the current investment proposal seems to be the best. *

Mark only one oval.

	1	2	3	4	5	6	7	
strongly disagree	◯	◯	◯	◯	◯	◯	◯	strongly agree

27. What financial analysis techniques are used by your firm to analyse strategic investment projects. Tick the boxes. *

Tick all that apply.

- [ ] Net Present Value
- [ ] Internal Rate of Return (IRR)
- [ ] Annuity
- [ ] Earnings multiple (P/E)
- [ ] Adjusted Present Value (APV)
- [ ] Pay-back
- [ ] Accounting Rate of Return (ARR)
- [ ] Sensitivity Analysis
- [ ] Accounting Ratios

Other: [ ] ____________________

Further questions

The following two questions are designed to help us get valuable insights into the strategic investment decision-making process of your company.

Definition: Strategic Investment Decision

Strategic investment decisions are investments that commit the organisation to a new strategic direction. Strategic investments involve significant long-term financial commitments, slow-to-materialise benefits and high levels of uncertainty. Examples of strategic investment decisions are development of new products, adoption of new production technology or production lines, entering new markets, M&As, asset restructuring, enhancement of production capacity or marketing competency etc.

28. If you had to describe the strategic investment decision process at your organisation, what would be the most important aspects and characteristics? *

29. Please give examples of strategic investment decisions in the last years and coming ones for the future *

30. If you have any observations or comments that could be relevant for our research, please mention them down below.

Appendix 2: Overview of answered respondents

How would you generally evaluate the business environment in which your company operates? The following aspects might help you answer the question. Stability of revenues, regulatory changes, political influences, etc.	How would you evaluate the attractiveness of the market segment in which your company operates? The following aspects might help you answer the question. Are there many new entries from competitors? Is the market growing? Is it possible to earn high margins in this market?	Average Market Context	Is your company driven by financial objectives or is it more important to achieve market objectives?	Is your company focusing on having the lowest cost structure as a competitive advantage or is it focusing on developing various different products/services to distinguish itself from competitors?	Is the performance of different divisions/parts/managers assessed against financial goals or is it rather focusing on how strategic targets have been reached?	Average Strategic Orientation	Market Orientation	Do your shareholders regard the company to be in a financial crisis at the moment or is it performing above expectations of shareholders?	Do your shareholders have a strong influence on decision making in the company and on the future orientation of the company?	Performance in Relation to Shareholder Expectation	In our decision-making process, we stick closely to the defined procedures and we do not deviate from this process.	Financial evaluation techniques are often used in the early analysis of strategic investments and are important in our decision-making process.	Financial evaluation techniques are regularly used in the final choice of strategic investments.	The evaluation of strategic investments is left to the judgement of top management.	A strategic investment proposal will be rejected if its expected financial return does not meet the minimum requirements of return on investment set by the company.	A strategic investment proposal whose expected financial return meets the minimum requirements of return on investment can be rejected if it does not satisfy the expectations and intuition of the top managers.	When the final decision about strategic investments is made, the financial analysis is a more important factor than managerial judgement (management experience, intuition, individual assessment of the situation, etc.).	Financial estimates about future returns of the investment project are constantly reassessed and questioned.	The evaluation of strategic investments is conducted without consideration of personal preferences of the decision-maker.	Disagreement between the people involved in the strategic investment decision process can be addressed openly when it comes to decision-making even if this disagreement results in conflict	For the evaluation of strategic investments the future conditions are more important than the results of similar past investments	Even if a project seems to be very successful a comprehensive financial analysis is conducted.	In our investment decision process, multiple options or other alternatives are fully evaluated in an objective and fact-based way even if the current investment proposal seems to be the best.		Industry	Classification
6	2	4	4	6	3	4,3	4,2	2	7	4,5	2	3	2	7	7	3	1	2	3	7	7	1	1	C1	ManuEnerWhole	Market Creator
2	3	2,5	6	6	2	4,7	3,6	5	6	5,5	2	4	4	6	5	7	2	2	2	6	6	3	2	C2	PubMediaTech	Value Creator
6	3	4,5	5	3	5	4,3	4,4	4	2	3	3	2	2	5	6	5	3	5	6	6	5	5	5	C3	ManuEnerWhole	Refocuser
5	3	4	4	6	3	4,3	4,2	2	3	2,5	3	6	6	6	5	3	3	5	6	7	5	6	6	C4	PubMediaTech	Refocuser
2	2	2	3	2	2	2,3	2,2	3	4	3,5	3	4	4	6	2	7	3	6	1	4	5	4	3	C5	PubMediaTech	Restructurer
6	5	5,5	6	5	6	5,7	5,6	4	6	5	3	5	5	6	5	6	3	5	3	3	3	5	5	C6	ManuEnerWhole	Market Creator
5	4	4,5	3	5	2	3,3	3,9	3	1	2	2	6	6	3	2	6	2	5	6	5	7	6	4	C7	ManuEnerWhole	Refocuser
5	6	5,5	4	6	5	5	5,3	6	7	6,5	2	3	4	6	6	4	4	4	2	6	6	4	4	C8	Consul/Service	Market Creator
6	5	5,5	2	5	3	3,3	4,4	6	3	4,5	2	6	5	3	3	5	3	6	5	6	6	6	6	C9	ManuEnerWhole	Market Creator
3	5	4	4	5	4	4,3	4,2	6	1	3,5	4	5	4	7	5	4	4	5	5	6	4	5	4	C10	Consul/Service	Market Creator
6	6	6	2	3	2	2,3	4,2	2	6	4	2	4	6	6	6	6	3	5	5	5	6	6	6	C11	Consul/Service	Market Creator
6	7	6,5	4	2	3	3	4,8	2	1	1,5	6	6	6	5	6	7	5	7	6	6	7	7	6	C12	ManuEnerWhole	Refocuser
3	5	4	3	6	2	3,7	3,8	5	1	3	6	6	6	4	6	4	5	2	6	6	6	6	5	C13	Consul/Service	Refocuser
5	5	5	2	5	2	3	4	3	2	2,5	2	6	4	5	5	6	3	5	3	6	3	3	3	C14	PubMediaTech	Refocuser
6	6	6	5	6	4	5	5,5	6	3	4,5	4	3	6	4	5	5	3	6	5	6	6	4	6	C15	PubMediaTech	Market Creator
6	6	6	4	5	2	3,7	4,8	5	4	4,5	2	5	5	5	3	3	2	5	6	6	5	3	2	C16	PubMediaTech	Market Creator

Appendix 3: Transcribed Interviews

Transcribed interview C2:

Interviewer: Written about the open questions in the end, because you said facts and analysis meets gut feeling based on the case of doing business in our market. Can you maybe give us further information about that? What you mean by my gut feeling and facts and analysis? Are you combining these two things?

C2: Oh, oh, that's a tricky question. Okay, I'd say that sort of I come from a fairly traditional rational analysis and I mean, I have a major in economics and some in math as well. So I'm very sort of as a person and I think that goes for a number of us that sort of management level at the company are very sort of data driven and relying on analytics and logical sort of rational analysis.

But in the end, I was especially thinking of sort of our acquisitions that we're buying we bought the sort of been acquired and emerged a number of smaller publishing companies in the last couple of years. And in the end, in the end, it's I mean, we sit there in the room in room discussing, meeting the sellers and the meeting these sort of the, the various looking into the company that we are thinking of buying in, and then suddenly there's a lot of sort of psychology and there's a lot of relations sort of undone and not so tangible sort of knowledge that goes into the equation and it's and it's an it's a bit difficult to this maybe describe but unexplained but it's sort of it's it's the rational The pure analytics meeting the reality that business is done in between people have you have to work along together? And so they're there. I think that's maybe that's what's behind. That's I think that's behind by sort of the wording in my answer is.

Interviewer: Perfect. Thank you very much. That was very helpful. And I want to ask you another question about the statement you made, I can read it again, and it's true. The valuation of strategic investments is conducted without consideration of personal preferences of the decision maker and you disagreed with that statement. So I guess that is kind of in line with what you have stated before. But preferences so do you think that you as decision makers, that your personal preferences are part of your decision making? Maybe you think about an acquisition object?

C2: I think that once again, in my answer, I try to be as honest as possible. And it would be very easy to say that my personal preferences are never part of the equation. But but my experience after doing being in this business for 20 plus years is that personal preferences matter, they said, they tend to sneak into the equation and decision process, even though of course, we tried to. And I mean, the maybe the easiest example for that is when hiring, but hiring I maybe we shouldn't call that a sort of strategic investment but I mean, when hiring that it's always difficult to sort of keep your personal preference Out of the, of that.

Yeah. And, and even though we say this to each other and research remind us remind each other this the importance of being sort of not being affected those preferences. I'd say that anybody saying that those preferences are not part of the decision there. I would call them naive, but maybe a bit blind. And I think that maybe that's what you what you find in that answer once again, and of course, make our I say that the, the, this is this is these are really interesting questions, because what is gut feeling and what are personal preferences really, to some extent, after once 20 plus years in this business, I think that I might say that Part of my gut feeling is the result of prior rational analysis and sort of a I. So that these sort of my quick answer to a question might be sort of just that a quick answer to the question is. If but if you go back and analyse my answer, you'd say that you'd reach the same conclusion using a Morse that logic stepwise sort of approach to the problem are interesting.

Interviewer: Yeah. So it goes hand in hand at some kind of combination of both and yeah, we with your long working experience, kind of have the first gut feeling and then the financial analysis maybe reveals the same picture.

C2: Yeah, yeah, maybe that's but if I were to say anything, sort of twist my arm and say, I mean, is the gut feeling or the more Rational analysis, systematic rational analysis more dominant force in the company, I'd say the rational analysis is, is the dominant sort of way of doing it, doing things and, and comparing our business haven't sort of been without competitors and other companies in sort of in the within the area or this area of business. I would say that we are considered to be the most sort of system systematic logic and rational decision making company in the whole business. Okay. And yeah, and I think that, that, to some extent would be I'm not I don't know if I confuse things here with that, answer. But I'd say that, the large part of the management team and the company, overall company have a scientific background. So, our CEO has a PhD in political science. And we have out of 150 employees, I'd say we have

20 or so PhDs and sort of higher precision. So, so sort of side effects. Yeah, academic sort of the level and the experience of sort of academic work and then research is somewhat extreme, I'd say. At least the compared to our competitors.

Interviewer: Yeah. Well, thank thanks very much for your participation that called. And I think we already finished at that point is where the points were a little bit unclear for me and for us and where we would like to reach out to you to get further information. And that was very helpful. And yeah, thank you very much for participating.

C2: My pleasure, and good luck and I'm very much looking forward to having a look at the final product

Interviewer: We will send over the final final thesis once it's finished.

C2: Thank you very much

Transcribed interview C6:

Interviewer:
Hello, this is Max

C6: So, how is your master thesis progressing?

Interviewer: Yeah, it works. It's okay. I think we're making progress. It's about Yeah, strategic investment decisions. And yeah, I'm, I'm currently studying in Sweden. And yeah, it was quite interesting Master program. It started last year around August and we'll go to end of May. And yeah, it was a one year program in finance accounting and my specialization was in corporate finance. And all the master thesis is not so much about corporate finance, rather, a little bit more management, accounting, financial decision making and that stuff and I'm writing it together with my classmate, Joran from the Netherlands. So it’s a degree project that is done together. And yeah, first of all, thank you very much for participating. And it was very, very interesting what you put in and also your, your comment on the use of NPV techniques and that stuff. And it would be very, very interesting for us if you could explain maybe a little bit how you do it at BASF. And yeah, maybe, maybe give us further information about your quote that Yeah, NPV is more used for how do you say it for defining or for, for an argument later on, so But, I don't know, you framed like it's more important to make a strategic decision and to look what the competitors doing then looking at the numbers.

C6: But you know there are two things. One thing is what should be done and how it should be done

Interviewer: Yeah, yeah, that is true

C6: Two different things. And the more or any other tool that you can have. My big problem with NPV is that you change 1% somewhere and the values are influenced. It should be in the end value it should have a perpetual growth of 1% or 2% and depending on what work you have. For example you work around 8% or something like this which is very difficult companies then the values double. So what then some companies use the same word for all investments some companies use one depending of what sector of business it is. For example in my sector 3D we use a wacc of 15% and if we are rather critical we use 8 or 9 percent. Which actually makes sense. Then, when you use a WACC of 15 then the end value does not change so much.

Interviewer: That's right. A WACC of 15% is quite high. Is it because that your business is kind of, yeah, it's a growth business more risky?

C6: Yeah exactly, 3D is new. Basically we have a corporate finance team. Who look for which investment? Which field does it fit? They welcome to market of companies in business. Investment in one Strange. Because take an investment firm it is okay but if you are one company you look at where is your money at your company. Good because that is the market it does not good tool.

Interviewer: That's true. And so you have a corporate finance team and so, how is it how many how many rounds Do you and do you have when you make a decision? So first to make some kind of proposal or and then you go it goes on and on probably right new analysis are conducted on and on or how is it? Can you can you say something?

C6: It depends, its one thing if you are talking about an acquisition Okay. We have a finance commission any investment in the company has to go through this commission even if it is 4 billion the president of the organization. Every single proposal has to go to through commission which then put the seven people in commission like a strategy manager etc.

Interviewer: Okay, so it's. Can you say that it's a rather procedural approach

C6: Yea it is very procedural. Every month the commission meets to present your case as the commission you to make an appointment one month before the commission meets and if you miss the date to the appointment you miss the commission. Commission going through the corporate finance team. People working in corporate finance we've there are not depending on us. The corporate finance guys are not reporting to me they report to corporate finance. However, they take all the assumptions from them. Live case assumptions in the end I can tell the story I want.

Interviewer: Yeah, that's true.

C6: I'm just going to tell us we just did an acquisition last year for an organization for the market.
The reason why we managed to the get this acquisition because XX was competing with us. Either the acquisition went to XX or to us. We went to a board member and told them we need this. Then we went to the commission, then you XX have anything you want in your NPV but when a board member agrees and the commission it does not mean anything.

Interviewer: So it is also a lot about bargaining within the company?

C6: It's not bargaining but aligning and buying the board members.

Interviewer: Okay? That's very interesting.

C6: Basically, you have to get a position proven to start negotiation, and to do due diligence then you do everything and then you have a formal process of due diligence on the report and the business. And then you go again to the commission.

Interviewer: It's interesting. And maybe one last question if you do you make a lot of use of your management experience about your experience in the in the sector? Or is it rather that you that you focus on their competitive factors? If you maybe sum it up in one sentence? If that's possible, if you can sum it up or is it rather every every project is different. There is no standard approach. However, yeah, long term investment is then analysed.

C6: It is difficult to answer but of course the more you know the market and the dynamic. Then you better understand if the investment, makes sense or not. If not we try to get additional advisors to confirm.

Right now we are about to do an acquisition in 3d printing. Today we only do plastics and today we look into metal. We have contacted consultants of metal 3D printing if this is a good thing or not?

Interviewer: I See? All right.

C6: The acquisition we are looking into right now. The company does a turnover of two hundred thousand euros and in 2 years they want to achieve 5 million euros. You need to make basic financial analysis. It is going to be different if you do an investment in some organisation where you know your X percent of the market the price. The NPV will be much more precise then.

Interviewer: Okay, yeah that was that was very interesting Thank you. Thanks very much for the call and for participating and Yeah have a nice day and

C6: If you have any questions. I think it is an interesting subject.
Interviewer: Yeah, thank you. I will do that. I will do that. Okay.
See you

C6: Bye

Transcribed interview C5:

Interviewer: Are strategic factors or the results of financial analysis more important in the final investment decision?

C5: The most important criteria is the financial return of the investment and that the money flows to the shareholders of the company. The decisions are basically made by the CEO who is basing his decision on managerial judgement and gut feeling. Although the most important aspect is to generate financial profits the analysis and evaluation of project is based on managerial experience.

Interviewer: Do you think that the decision making process is rather rational or is it driven by gut feeling?

The publishing house is basing their decisions pretty much on the experience in the publishing sector. I want to give you an example so you can better understand it. We acquired a company last year ago. The company was very attractive because it has grown strongly over the last couple of years with interesting revenue increases of 20 MEUR. The acquisition of the firm would have brought the whole company to one of the most important market players. This was very important for our CEO who has tried to grow the company and to strengthen its market position. However, the due diligence of the company was rather mediocre. After checking processes of the acquisition target we identified low synergy potential, which we thought would be there in the beginning. We realized that the integration would be very difficult. At the end the decision was based on how much revenue can we add to the group and not so much on profitability? Because of that decision, I would say that the decision was rather driven by experience and gut feeling and not so much by financial analysis.