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Navigating the Landscape of Strategic Investment Decisions

A qualitative study investigating factors influencing the individual decision-maker during the SID process.

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Abstract

Title: Navigating the Landscape of Strategic Investment Decisions

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Key words: Strategic investment decision, managerial judgment, economic rationality, decision making behavior, uncertainties

Purpose: The purpose of this study is to investigate factors influencing the individual decision maker during the process of SIDM.

Methodology: The research approach of this study is qualitative and of exploratory nature. A literature review was conducted. Secondly, empirical data was collected via semi-structured interviews. The empirical data was then put in relation to the theory in order to answer the research question.

Theoretical perspectives: The theoretical perspective of the study is based on existing literature within the field of SIDM. The literature review is focused on the characteristics of SIDM, the process of SIDM, managerial judgment and economic rationality and factors of SIDM.

Empirical Foundation: The empirical data of the study was gathered through semi-structured interviews with nine professionals within the field of SID.

Conclusions: The decision maker tends to be more influenced by managerial judgment and previous experience, but there is a clear need for economic calculations in the early stages of the process. The decision maker is influenced by several contextual factors, both the ones they can control and those outside their power.

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Introduction

1.1 Background and problematization

Strategic investment decisions (SID) are a frequently discussed topic in business research. SID is of great importance for an organization to achieve long-term strategies and gain competitive advantages (Emmanuel, Harris & Komakech, 2010). Examples of strategic investment decisions are new business processes, mergers and acquisitions, implementation of new technologies, entering a new market with a new line of products or services etc. (Alkaraan & Northcott, 2013). There are two main keys in the strategic investment decision; evaluating the strategic fit and the economic value added by the investment (Grant & Nilsson, 2019).

Problem decision makers are exposed to when making strategic investment decisions is to manage uncertainty that is connected to the decision (Alkaraan, 2020, Elmassri, Harris and Carter, 2016; Emmanuel, Harris and Komakech, 2010). Economic rationality assumes that the decision maker can access all the relevant information when making decisions, but the reality is that it is difficult for a decision maker to access and gather all the relevant information that is needed to make an informed decision (Emmanuel, Harris and Komakech, 2010; Elmassri, Harris and Carter, 2016). Managerial judgment, the experience and intuition of the decision makers is a crucial factor when aligning the investment with the strategic dimensions of the organization (Grant & Nilsson, 2019). The management control view means that the different level of seniority and experience and that the access to relevant information is limited during different stages of the SID process which means that the need of using managerial judgment is more present (Emmanuel, Harris and Komakech, 2010).

King (1975) and Harris (1999) contribute to the literature by showing how strategic investment decisions follow a process consisting of several stages which can be more or less formalized within an organization. Elbanna (2007) argues that the context of the SIDM process will have an impact on the process. The context includes firm specific characteristics, characteristics of the decision and the decision maker and the external environment (Elbanna, 2007). During the different stages of the processes, economic rationality and managerial judgment will be more or less present (Emmanuel, Harris and Komakech, 2010). Emmanuel, Harris and Komakech (2010) also means that the decision makers are individuals that are operating within an organizational context.

Already existing research tends to focus on capital budgeting techniques (e.g., Alkaraan & Northcott, 2007). With the criticism against economic rationality in mind, it can be stated that SID is not only about economic considerations but also contextual settings affecting the decision making (Imran & Rautiainen, 2022).

The economic rationality in investment appraisal approaches do not take any contextual factors into account (Elmassri, Harris and Carter, 2016). Contextual factors such as political or social influences and subjective judgements are isolated from the decision making. Individuals might bring unique insights, experiences, and perspectives that will not be fully captured in calculations, hence managerial judgment, intuition, and experience come into play, as well as the dynamic interaction of group members (Pettigrew, 1973; Grant & Nilsson, 2019). Additionally external market-related instabilities, human related information and decision biases are factors that might create significant challenges in the investment process as they are hard to predict (Haka, 2006). Isolating these factors from decision-making increases the risk of missing valuable perspectives that would not be possible to capture in calculation, and furthermore influencing the performance of the organizations (Alkaraan, 2020; Elmassri, Harris and Carter, 2016)

Previous literature also indicates that the extent to which financial or strategic considerations are dominating in the SIDM process differs (Butler et al, 1991). The difference in what information to rely on when participating in the SIDM process, is a result of several contextual factors. According to already existing literature, several factors influence the SIDM process. This process tends to be modified by individual decision makers which can result in the most rational decision being dismissed (Brouthers, Andriessen and Nicolaes, 1998). The individual decision maker tends to prioritize certain information when faced with uncertainty and complexity, which is characterizing SID, and can result in the individual decision maker to overemphasize some information when underestimating other information. It is necessary to understand the factors that are influencing what information the decision maker is relying on.

Within the existing literature, focus has been placed on general aspects of decision-making on an organizational level (Alkaraan & Northcott, 2013). Not as much literature is exploring potential contextual factors that affect the individual decision maker throughout the SID process. Neither to what extent these factors are influencing what information the decision maker tends to rely on. Therefore, this study aims to investigate factors that influence the individual decision makers during the SIDM process.

1.2 Purpose

The purpose of this study is to investigate factors that influence the individual decision maker throughout the SIDM process. The main focus is to analyze the different participants' experiences from being a part of different SID processes with support by the literature and by this determine some of the factors that are influencing the individual decision maker and how these factors affect the decision making.

1.3 Study outline

The background, problematization and purpose of the study is presented previously. Also the motivation to study is presented. The next chapter is describing the methodology of the study which is explaining how the study is designed. Following, the theoretical framework, which consists of SID, the process of SID and factors that may influence the SID process. Then, the findings from the interviews are presented in the empirical chapter. These findings are then discussed and connected to the theoretical framework. Lastly, the conclusions of the study are presented and suggestions for further research are presented.

Methodology

2.1 Research approach

The research approach of this study is qualitative and of exploratory nature. To answer the research question, data was collected via semi-structured interviews. The interview participants are professionals working with SIDM which are contributing to the study by describing how they are executing SIDM and potential factors that are impacting their work. The collected data was then thematized and analyzed in order to identify potential factors influencing the individual decision makers' during the SID process.

2.2 Literature review

In order to get an overview of the existing literature on the topic, a literature review was conducted. The literature was primarily found in LUB search which is an electronic database. Literature was also found in the Library of Lund University School of Economics and Management and in Google Scholar which is also an electronic database containing both books and articles. The literature that contains information about the topic and theories was found. The literature was categorized, and it provided the research with its theoretical framework. The literature consists mostly of journal articles that are peer reviewed but also of books within the field. Book sections related to the topic have been used to help to provide a comprehensive review and to enhance the scope and depth of the research topic (Wolfswinkel, Furtmueller & Wilderom, 2013).

The searching terms that were used when searching for relevant literature is found in the table below.

Sources	**Terms**
• LUSEM Library • LUB Search • Google Scholar	• “Strategic investment decision” • “Strategic investment decision making”

	• "SID Process" • "Process of decision making" • "Decision making" • "Managerial judgment" • "Economic rationality" • "Pre-decision controls" • "Post decision controls" • "Factors influencing SID"

Table 1. Sources of data and Searching terms

2.3 Design of the research

The design of the research is exploratory and semi-structured interviews and will be conducted to collect data. Conducting interviews was an appropriate way to collect data for the study since the study aims to investigate how decision-makers are evaluating information during the SIDM process and how potential factors are influencing which information the decision makers tend to rely on. To understand these evaluations and potential factors that may influence these evaluations, it is considered relevant to understand the decision making from the perceptions of the decision makers. To get different decision makers perceptions, interviews are considered the best way to collect data (Silverman, 2013). The researchers can see the different considerations done throughout the SIDM process from each decision makers' point of view by conducting interviews. By conducting several interviews with different professionals within the field of SIDM, the different decision makers can be put in relation to each other. When putting two or more social phenomena in relation to each other, it can be better understood (Bell, Bryman and Harley, 2019). The researchers can determine in which contexts the theory is applicable or not in a better way by comparing two or more cases (Bell, Bryman and Harley, 2019). By comparing the use of managerial judgment and economic rationality and other influencing factors in several cases the researchers can get a more holistic view and get a better understanding of the application of theory in different contexts. The differences and similarities that can be found between the different cases are therefore used in order to deepen the analysis further.

2.3.1 Selecting the interview participants

To select interview participants that are suitable for the study, certain criteria were determined. The criteria's that were determined was based on the needs to answer the research question. To be suitable for the study the individuals need to be professionals that in some ways have been participating in several strategic investment decisions. The individual should have at least five years of experience within the field of SID. The individual must also be operating within the context of an organization which means that the individual must be employed and conduct SID as a representative of an organization.

To find participants that were willing to participate in the study we searched for people in multiple ways. By reaching out to the information email to some companies a contact was established, often with the HR department, which sent us to potential interviewees that matched the determined criteria. Another way of finding participants was through LinkedIn where people with job positions such as "CFO", "Controller", "CEO" and similar were contacted. The titles were also translated into Swedish which is the native language of the researchers. A third way of creating contacts was by asking already established contacts if there were any relevant colleagues to them that could be potential participants. To get in contact with the potential interview participants an early contact was established by reaching out to them via email. The email contained information about the research and information regarding the extent of the participation.

The desired size of the sample is to interview until theoretical saturation is achieved. It is nearly impossible to know how many interviews are needed before theoretical saturation is achieved (Bryman, Bell & Harley, 2019). Furthermore, it is not clear to see when or if theoretical saturation is achieved (Bryman, Bell & Harley, 2019). Due to the extent of the research, it was decided that between eight and ten interviews was reasonable. This number of interviewees is considered reasonable since the amount of data collected is comprehensive enough to be able to analyze and answer the research question. The number of interviewees is not too extensive to handle considering the limited time of the master thesis. In the end, nine participants were able to participate, and a theoretical saturation was achieved.

2.3.2 Data collection

The data was collected via semi-structured interviews. Since there is an interest in the interviewee's point of view, less structured interviews were conducted which gives room for more flexibility for the participants to share what they think is important and relevant (Bryman, Bell & Harley, 2019). Richer and more detailed information is desired which a semi-structured interview allows (Bryman, Bell & Harley, 2019).

The interview guide with structured questions was established. The questions in the interview guide are mainly based on the theoretical framework. The interview guide provides a base for the interview, but the semi-structured interviews allow the interviewees to fill in with other information that is considered relevant. It also allows for the interviewers to leave out some of the questions in the interview and to ask other follow up questions than the ones written in the interview guide. It is important to the research that the interviewees can freely describe their decision making. The free descriptions enable an analysis of what factors are affecting the decision making which helps to the research question. The interview guide was also categorized into different themes. These themes were based on literature. The three themes that were used to categorize the interview guide were the process of SID, managerial judgment and economic rationality and factors that influence the decision making.

When conducting the interviews, the interviews are recorded for the researchers to be able to go back and listen to the collected information again. The relevant information got transcribed and presented in the empirical chapter.

In the table below, the participants are presented with their job position. Some of the interviews were held via video conference and others were held via physical meetings.

Job Position	**Interview**	**Years of experience**	**Abbreviation**
Finance Manager	Video conference	20	I1
Controller	Video conference	20	I2

M&A Director	Physical meeting	25	I3
Master Data Manager	Physical meeting	10	I4
Master Data Director	Physical meeting	20	I5
CEO	Physical meeting	15	I6
CFO	Physical meeting	15	I7
CEO	Video conference	20	I8
Operations Director	Physical meeting	15	I9

Table 2. The Participants of the semi-structured interviews.

2.4 Empirical data

2.4.1 Presenting the empirical data

The empirical data is presented in different themes. The themes are the same as used in the interview guide. The first theme is dealing with the SID and the process of SIDM. The second theme is dealing with the use of managerial judgment and economic rationality and the third with different potential factors that may influence the decision making. The transcribed answers of each interview participant were categorized into these themes and consisted of several sub-themes based on both the theoretical chapter and frequently appearing answers. Both the direct question and follow-up questions were considered when categorizing the empirical data to each theme. To be able to code the empirical data, the theoretical framework of the study provided the means of each theme and made it possible to connect the answers with each theme.

2.4.2 Analyzing the empirical data

To analyze the empirical data, a thematic analysis has been done. A thematic analysis is a way to analyze the collected data by finding themes in the interview answers (Bell, Bryman and Harley, 2019). The thematic analysis will be both theory-driven and data-driven which means that themes will be identified in both the theory chapter and the empirical data (Braun & Clarke, 2006). The analysis will be following certain steps as presented by Lester, Cho & Lochmiller (2020). The steps will not be followed step by step, rather it will be used as a guide and the steps will be done but not in the exact order as presented in the article. Since the first and the second step is referring to the presentation of the empirical data, the analysis will start with the third step, which is becoming familiar with the collected data (Lester, Cho & Lochmiller, 2020). This is done by reading through the structured material which is an initial analysis of the findings in the transcribed data. During the initial analysis of the structured data, the researchers are taking notes of thoughts and interpretations of the material, which is consistent with the next step of the process (Lester, Cho & Lochmiller, 2020). The data is then coded by connecting the data to a certain theme, which is consistent with the fifth and sixth step of the process presented by Lester, Cho & Lochmiller (2020). The themes will together form the analysis.

2.5 Research quality

To ensure the quality of the research, some measures have been taken. Reliability and validity are criteria that are closely related to the quality of the research (Bryman, Bell & Harley, 2019). There are alternative criteria of which qualitative research should be evaluated according to; trustworthiness and authenticity (Bell, Bryman and Harley, 2019). These alternative criteria arises from the critics that the relevance of reliability and validity differs in qualitative research compared to quantitative research.

The interviewees will be asked to read the findings after the interviews are conducted. By letting the interviewees read the findings and correct potential inadequacies it can be ensured that the findings reflect the social world who were studied. The interviewees will be asked to validate the transcribed interviews to ensure that the perceptions of the researchers are according to the reality. By doing this, the credibility of the study can be ensured which is one of the criteria that needs to be achieved in order to ensure the trustworthiness of the study (Bell, Bryman and Harley, 2019).

The social context will be well described, and important details will be carefully described in order to ensure transferability to the study. To fully understand the social context of the studied object makes it possible to draw conclusions of findings in another social context than the one that is studied (Bell, Bryman and Harley, 2019).

Ethical considerations will be considered when conducting the research which will ensure the confirmability of the research which means that the researcher is acting in good faith and that personal values will not be affecting the findings of the study (Bell, Bryman and Harley, 2019).

2.6 Limitations

Bryman, Bell & Harley (2019) mentions that not all literature think that the multiple case-study is a beneficial approach since the researchers tend to not focus enough on the context, rather it focuses on how cases can be contrasted.

One of the limitations of the study is the sample size of the participants in the interviews.
One of the main reasons that the sample size is limited is the fact that the target participants are people with high status within the organizations they are operating in which means that many requested participants did not have the excess time to participate in the study. The target participants are mainly people within the finance field with high status and strong ability to make decisions. To exemplify, the requested participants were mainly CEO, CFO, Finance Managers etc.

All the participants were placed in Sweden and also have Swedish as their native language. One potential limitation with conducting the interviews in English may be the language confusion. This confusion and potential misunderstanding can lead to the answers not being expressed as clearly as it would have been when speaking the native language.

Another limitation with the study is the fact that the literature is not covering all the existing literature but only the literature that is considered to be most relevant to the study. The researchers can be biased towards the chosen literature that is considered relevant. It can also be argued that the literature review can be continued in eternity since there is always new research that is published which can be relevant to the study.

2.7 Ethics

Ethical considerations have been taken into account when conducting the research. Bryman, Bell & Harley (2019) describes four areas of ethical considerations in business research; harm to participants, informed consent, invasion of privacy and deception. When contacting the research participants an email was written with information about the research and the extent of the participation. The persons that were contacted were able to reject the request if they did not have time to participate or did not want to participate based on other factors. To be able to reject the request because of for example stress, lack of time etc. minimizes the risk of harming the participants. The initial email and the conversation before booking the interviews also makes sure that the participants give informed consent because the participants are well-understood with what the participation means. The interviewees will also have access to the interview guide before the interview is conducted. This enables the interviewee to prepare and be well-understood about the interview's scope. Also, all the interview participants are anonymous. The participants will be named after a certain code to be able to separate the different interviewees answers in the presentation of empirical data. The code will consist of an "I" which stands for Interviewee followed by a number. In the methodology chapter, the participants will be listed by their job position and the code the participants are assigned. The name of the organization the participants are working at will not be stated. All the collected data is anonymized in order to guarantee anonymity of the participants. To avoid deception, the participants were informed with the purpose of the study both in the introducing contact but also during the interview. The participants were also asked to give consent before the researchers started the recording of the interview, which made them aware of the recording before start.

3. Theory

3.1 Strategic investment decisions

Strategic Investment Decisions (SID) are described by Alkaraan & Northcott (2007) as investments that change the strategic direction of an organization. Capital investment projects can be either of operational or strategic nature. Operational investments can be described as decisions with every-day nature where the decision maker is aware of both risks and outcome. Strategic projects, on the other hand, are characterized with high levels of risk, difficulties to quantify outcomes and having long-term impact on the performance of the corporation. Examples of strategic investments are mergers and acquisitions, development of new product lines and introduction of advanced business technologies (Alkaraan & Northcott, 2007; Emmanuel, Harris and Komakech, 2010).

The characteristics of Strategic Investment Decision-Making processes can be defined as substantial, complex, uncertain, non-programmed, subjective, long-term and an aim to gain competitive advantages by changing the strategic direction (Alkaraan & Northcott, 2020). The investments are complex and involve multiple departments of the organization. The long-term characteristic refers to the investment contributing to accomplishment of the long-term goals of the organization. Strategic investments are unusual and non-programmed which means that they are new to the organization and therefore there is no previous experience or policies to rely on. The investments are also substantial because of the commitment of resources and the fact that they are intended to achieve future goals. The fact that the outcomes of the investments are hard to estimate, the level of uncertainty is high. The level of uncertainty is closely related to the high number of committed resources (Alkaraan & Northcott, 2007).

3.2 Dimensions of SIDM

Alkaraan & Northcott (2013) identified three dimensions of SIDM; procedural rationality, strategy formulation and political behavior.

The classic economic theory assumes that the decision makers have clear objectives, have access to all relevant information and have the ability to analyze complex situations which forms the basis of procedural rationality. The procedural rationality includes formalization of the behavior in the decision-making process, what levels of managers are involved in the decision making, formal planning of SID and to what extent decision makers rely on financial evaluation (Alkaraan & Northcott, 2013). The procedural rationality is to what degree the SID-process aims to optimize the decision according to the situation (Dean & Sharfman, 1993). Dean & Sharfman

(1993) characterize the procedural rationality as an attempt to create expectations of different alternatives by collecting the information needed which is used in the final decision making.

The second dimension is strategy formulation (Alkaraan & Northcott, 2013). The strategy formulation assumes that the investment projects that are aligned with the organization's strategic goals will be desired by the decision makers. Different types of investments will have different assessment criteria in the decision-making process. King (1983) means that since the organizational strategy determines the SIDM process, most of the decision making takes place outside the formal planning. Emmanuel, Harris and Komakech (2010) also means that managers will favor projects according to their managerial judgment. Managers are also assumed to favor projects that are aligned with the organizational strategy even though the alignment is hard to grasp, and that the alignment is hard to incorporate in the cash-flow predictions (Alkaraan & Northcott, 2013).

The third dimension is political behavior (Alkaraan & Northcott, 2013). The political behavior aspect refers to organizations as political systems which in turn view organizations as a composition of people that to some extents have conflicting interests. Alkaraan & Northcott (2013) means that the power among these people during the SIDM process influences the decision making. Considering this, Alkaraan & Northcott (2013) continues to argue that it is important to have the organizational goals and strategies in mind throughout the decision-making process since the political behavior may force the decision towards the goals of the individuals rather than the organizational goals.

3.3 The process of SIDM

3.3.1 The process

Harris (1999) identified a process based on seven different steps. Ideas and opportunities are identified in the project generation phase (Harris, 1999). Preliminary assumptions form the project outline which is the second stage of the process. The primary goal of the SIDM process and the next stage of the process is an early screening where divisional executive teams decide whether to accept or reject a project proposal, and there may be an in-between, modifying and accepting category of the proposal. The process of a project proposal has in the end either to be accepted, rejected, or modified, different managers with different positions may have different opinions of the investment uncertainties hence taking different decisions (Butler et.al 1991; Harris, 1999).

The next stage of the process involves detailed assumptions which includes DCF analysis and evaluation. The divisional executive teams then decide whether to present the project appraisal paper to the group board or not. The group board then decides whether to proceed with the project or not based on their criteria which includes for example hurdle rates. The last stage of the process is the post completion audit which is conducted after the project is completed. Between each of these steps, there are feedback loops which allow for knowledge adjustments between each step (Harris, 1999). Harris (1999) means that the SIDM process is an iterative process with feedback loops and expresses the importance of the feedback loops.

King (1975) identified a process based on six different steps. The process starts with the triggering-step which is the step where the opportunity is recognized. The recognition of an opportunity comes from external insights and requires the organization to budget and plan the procedures. The next step in the process is the screening-step which is the step where it is decided whether it is worthy to invest in the new opportunity or not. The screening is influenced by both the external environment and organizational factors such as strategy, situation and structural factors. The next step is the definition-step where the analysis is generating feasible alternatives which is also influenced by the external and organizational environment. The next step is the evaluation of which is the phase where the generated alternatives are evaluated. The evaluation is based on externally published information and the internal organizational criteria. The next phase is the transmission through the organization before the last phase which is the decision (King, 1975).

Emmanuel, Harris and Komakech (2010) claims that the processes can differ from one organization to another since the processes are not always formally documented and the stages can differ from each other. During the different stages of the processes, economic rationality and managerial judgment will be more or less present (Emmanuel, Harris and Komakech, 2010).

3.3.2 Pre-decision controls

SIDM-processes distinguish between the setting of pre-decisions and post-decisions controls. Pre-decision involves a corporate capital expenditure budget and calculations of the projects that's suitable for the investments. This may influence the characteristics of investment decisions and its likely to impact upon characteristics of decisions, as only projects that meet certain criteria are considered for investment (Butler et. al 1991). A complete understanding of SID requires an analysis of the broader context in which the organization operates but it's not always easy because strategic investments involve long-term commitments and high levels of uncertainty. This makes it difficult for companies to evaluate (Northcott & Alkaraan, 2007; Elmassri, Harris and Carter, 2016).

Companies employ different types of pre-decision controls to enable effective capital investment, and these controls are crucial in ensuring that a company makes appropriate investment choices (Huikku, Karjalainen and Seppälä, 2018). SID are shaped by pre-decision controls of a known organizational strategy and a proposal that meets expected financial return can be rejected if it does not fit the firm's corporate strategy. To stay aligned with organizational strategy and to attain a position of competitive advantage, companies implement pre-decision control mechanisms before and after SID-processes. These mechanisms are used before the investment decisions takes place and can influence investment decision making before the evaluation stage by determining whether an investment project is identified as worthy of formal, financial evaluation or by setting the criteria against which the investment will be assessed and chosen, encompassing both financial and non-financial factors (Alkaraan & Northcott, 2007).

The control mechanism consists of both intellectual and organizational principles and standards, such as policies, procedures, compliance requirements, and the judgment of decision makers based on their experience and comprehensive understanding of the contextual factors of the business environment. Achievement of integration between an organization's strategic investment initiatives and its overall strategy serves as a crucial pre-decision control, influencing managerial behavior during the early stages of SID practices. Since many strategic investment decisions are unique and not repeatable, the information required to evaluate them is also likely to be distinct. Successful SID practices require the use of a large amount of information, a significant portion of which is gathered and analyzed before potential capital investments are being considered. This information includes factors like strategic goal setting, risk-adjusted hurdle rates, and the design of appropriate organizational decision hierarchies (Alkaraan, 2020).

Studies have shown an extensive use of formal comparative processes and procedures, detailed budgets, a variety of capital budgeting techniques, and pre-decisions and post-decisions as control mechanisms. SID practices can be hindered by inadequate pre-decision control mechanisms, insufficient evaluation of strategic investment opportunities or incapability to attain synergy (Alkaraan, 2020).

Macroeconomic concerns continue to be important when evaluating and filtering investment prospects. Alkaraan (2020) emphasizes the importance of pre-decision control mechanisms early in the SIDM-process. It is necessary to create models that consider various macroeconomic scenarios and assumptions about internal and external parameters. These assumptions may include projections for economic growth, commodity prices and exchange rates. To comprehend the elements that influence SID practices and align them with the organization's strategy it’s also important to give more attention to the design of pre-decision controls and the crucial role of strategic management accounting tools instead of the conventional financial analysis technique this is because once the investment aligns with the strategy it sets the expected managerial behavior (Alkaraan, 2020)

3.3.2.1 Dynamics of pre-decision control

Changes in companies’ financial situation, strategic and organizational conditions have indicated an increased emphasis on pre-decision controls such as policies, procedures and routines. Research has indicated that companies adjust their pre-decision controls to align their strategic investment decisions with their overall strategy, in response to shifts in both external and internal environmental conditions (Huikku, Karjalainen and Seppälä, 2018).

Huikku, Karjalainen and Seppälä (2018) investigate how different factors, increased financial pressure, changes in strategic orientation and changes in management might increase the emphasis on pre-decision controls. Their study highlights important correlations between financial pressure, exploitative orientation, change in management, and pre-decision controls. Changes in both external and internal environmental factors, such as competitive environment, organizational structure, and strategy, causing companies to increase adaptations to pre-decision control (Huikku, Karjalainen and Seppälä, 2018).

Results of Huikku, Karjalainen and Seppälä (2018) study shows that companies tend to put more emphasis on pre-decision controls when facing financial pressure but also an increased tightness on pre-decisions when facing financial pressure. Changes in management, more specifically change of managers that are closely involved in the strategic investment decision making process, leads to an increased focus on pre-decision controls. This change also leads to increased formalization of procedures and a tightening of pre-decision controls.
Pre-decision controls in managing financial pressure, exploitative orientation, and change in management. It suggests that pre-decision controls can be adapted to respond to these changes and ensure effective decision-making processes (Huikku, Karjalainen and Seppälä, 2018).

3.3.3 Post-decision controls

Post-decision controls refer to the monitoring and evaluation of the performance, project account and post-audit. These controls will set the performance criteria related to a decision (Butler et.al 1991). Post-decision controls are used during the later stages of the investment process (Huikku, 2011; Huikku & Lukka, 2016). The level of success achieved through capital investment has a significant impact on a company's ability to achieve its strategic objectives. Post-completion auditing (PCA) of capital investments can provide useful feedback that can enhance the effectiveness of both current and future investments (Huikku, 2011).

According to Huikku (2011) information from e.g., PCA can be utilized for organizational learning to facilitate the planning of future investments, prevent previous mistakes, and identify processes that can be repeated for upcoming investments. Additional PCA can be used to measure the performance of the investments, provide feedback, and enhance the accuracy of investment evaluations, and assess the performance of management.

Even with the benefits of PCA, there are some problems. According to Huikku (2011) the study identifies three problems. Technical, organizational, and Economic problems. Technical problems refer to issues such as separation of incremental cash flows, estimating future cash flows, difficulties in planning material and changes in business environment. Economic problems can be related to the actual cost of implementing PCA while organizational problems refer to reluctance of people to conduct PCA. The study shows that the main reason for conducting PCA is organizational learning and that the major benefits of PCA are related to organizational learning.

3.4 Economic rationality

The definition of rationality according to Alkaraan & Northcott (2006) is to characterize the efficient decisions in terms of achieving the objectives. The decision makers are assumed to have the ability to define the objectives, to forecast all feasible outcomes of the decision and to think rationally when choosing the most appropriate action in order to achieve the objectives (Alkaraan & Northcott, 2006). The economic rationality in using these investment appraisal approaches do not take any contextual issues into account. Contextual factors such as political or social influences and subjective judgements are isolated from the decision making (Elmassri, Harris and Carter, 2016). Dean & Sharfman (1993) means that the logic behavior in trying to achieve goals is characterized by rationality. This view on SID is not consistent with the fact that strategy is a dynamic concept that is influenced by several factors (Elmassri, Harris and Carter, 2016). Grundy & Johnson (1993) means that using simple quantitative investment appraisal approaches to make complex decisions is not rational.

3.5 Managerial judgment

Managerial judgment involves decision-making based on a manager's experience, intuition, and knowledge, rather than relying solely on data or formal analytical methods. Individuals may feel uncomfortable with using intuition as a decision-making approach because it can be challenging to process information without access to all relevant facts. However, managers must balance both logic and intuition to guide their organization through the unknown business territory, in which SID plays a crucial role (Harris, 2009) It is assumed that the relevant information is easily accessible and that managers acknowledge its importance. The process of managerial judgment is considered passive since utilizing the appropriate analytical technique ensures a definite outcome of either acceptance or rejection (Emmanuel, Harris and Komakech, 2010).

However, research suggests that decision-makers often rely on simplified assumptions, how information is presented, and shared agreements to make decisions, which may not always align with the assumptions of economic rationality. This has important implications for the field of managerial judgment and highlights the need to explore alternative decision-making models that consider these factors (Emmanuel, Harris and Komakech, 2010). The involvement of a potentially large number of managers in an organizational setting can lead to information asymmetry, where there is a difference in the information available to managers and their superiors. This can occur due to the bounded rationality of each individual's experiences, as suggested by Simon (1987). This means that each individual has limited capacity to process and evaluate all available information, leading to differences in their judgments and decisions (Emmanuel, Harris and Komakech, 2010).

When the SIDM process is embedded in an organizational setting, the situation becomes more complicated and dynamic. This differs substantially from the economic model, which emphasizes analysis and evaluation. In the management control view of the SIDM process, managers with different functional skills occupying different levels of seniority can participate at different stages of the process (Emmanuel, Harris and Komakech, 2010).
However, it is debatable whether all managers will have access to relevant information and agree with each other's judgments. In this more realistic setting, the exercise of managerial judgment gains greater significance. Managers must rely on their experience, expertise, and knowledge to make decisions, even when faced with limited information and potentially conflicting opinions from other managers. Consequently, there is a need to examine the true nature of decision-making problems from the perspective of the actors involved. This means understanding the

limitations and biases that can affect the decision-making process for each individual manager (Emmanuel, Harris and Komakech, 2010).

3.6 Influencing Factors on Decision Making

Research has shown that there are several factors that influence the strategic decision-making process and that individuals tend to modify the outcome of the process so that the most rational strategic decision may not always be taken (Brouthers, Andriessen and Nicolaes, 1998).

Butler et al. (1991) examines the investment behavior of managers engaged in the process that affect the investment decision. In their study they consider different modes. First mode, computational decision-making, also mentioned as economic rationality in Alkaraan & Northcott, (2007) study, is where the investment decision is primarily derived from various calculations, this includes techniques such as DCF, ROI and other similar techniques. Second, judgmental decision making occurs even if managers have facts and calculations to rely on, the decisions ultimately involve considering intangible factors that are not easily quantifiable. Third mode in the theory is bargaining, which includes the type of decisions that occurs when the decision considers views of the involved parties and when the decision is weighed up by compromise. The fourth decision type arises when nobody of the participants knows how to proceed, and it could be resolved by either luck or by someone taking hold of the situation and making the decisions through inspiration (Butler et al. 1991). When faced with uncertainty and complexity, decision-makers may prioritize certain information and overlook other relevant information, potentially resulting in overemphasizing some factors and underestimating others (Emmanuel, Harris and Komakech, 2010). According to Emmanuel, Harris and Komakech (2010), decision-making can be affected by factors such as heuristics, framing, and consensus, which challenge the assumptions of economic rationality.

3.6.1 The context of the SIDM-process

The SIDM process can’t be analyzed properly without analyzing the context of the SIDM process (Pettigrew, 1973). Elbanna & Child (2007) argues that the context of the SIDM process will have an impact on the process. The context includes firm specific characteristics, characteristics of the decision and the decision maker and the external environment.

Different from the studies conducted by Dean and Sharfman (1993) and Papadakis, Lioukas and Chambers (1998), the model presented by Elbanna & Child (2007) is not only investigating the individual contextual factors, but the overall impact different contexts have on rationality in SIDM processes. The type of problem that needs to be solved will affect to what extent economic rationality and/or managerial judgment will be used in the decision-making process (Simon, 1987). Papadakis, Lioukas and Chambers (1998) present empirical evidence that the decision-specific characteristics is an important factor in determining the rationality in the SIDM process.

The decision-specific characteristics include three different aspects: the individual characteristics of the decision maker, the internal context of the organization and the environmental factors (Elbanna & Child, 2007). The decision-specific characteristics will be categorized into three characteristics. The first characteristic is the *decision importance* which implies that decision-makers may deal with decisions in different ways if the decisions are not of the same importance. The second characteristic is *decision uncertainty* which refers to decision specific uncertainty which is argued to form the base of the decision making. The third characteristic is the *decision motive* which refers to how the decisions are categorized as an opportunity or a crisis by the decision makers which argues to affect the rationality in the decision making (Elbanna & Child, 2007).

The external environment characteristics include two different aspects: environmental uncertainty and environmental hostility-munificence (Elbanna & Child, 2007). Environmental uncertainty refers to two different perspectives: international uncertainty and strategy perspective. The international perspective includes macroeconomic and political instabilities, and the strategy perspective refers to uncertainties within sectors such as technologies, competitors and changes in demand. Previous studies argue that environmental uncertainty affects the level of rationality in the decision-making process. The other characteristic within the external environment is the *environmental hostility-munificence* which is considered as a factor to understand strategic behavior (Elbanna & Child, 2007).

One of the aspects in the firm characteristic perspective is the *Organizational performance*. Organizational performance refers to an organization's performance, both financial and non-financial, compared to other organizations with the same contextual factors during the period of the decision-making process. The organizational performance can affect to what extent decision makers use economic rationality. The impact can be seen from different perspectives where a good performance can enable the firm to use economic rational models even though it is costly. But on the other hand, a previous bad performance can give incentive to rely on rational models since there is no room for a bad investment decision. Another aspect of the firm characteristics perspective is the *firm size* where mature and large firms may have more formal processes which can be argued to increase to what extent decision makers use rationality in the decision making process (Elbanna & Child, 2007).

The decision makers have less control over the environmental variables than the internal firm characteristics.

3.6.2 Uncertainty in decision making

Uncertainty is a factor that might challenge strategic decision-making as it can make rational evaluation of outcomes difficult and inaccurate. Verbeeten (2006) defines uncertainty as the difference between the information currently available and the information required to make a decision. Strategic investment decisions often involve uncertainty, which can have unpredictable consequences that significantly impact a company's long-term viability and for which complete information is usually unobtainable. Given the uncertainties posed by political, macroeconomic, and financial risks, decision-makers face formidable challenges. Therefore, companies must give attention to the Strategic Investment Decision Making (SIDM) process, which recognizes high risk, uncertainty, and complexity as fundamental characteristics of investments and considers macroeconomic issues as critical factors when assessing potential investments (Alkaraan, 2020).

In the SIDM process, uncertainty is an inevitable element, making it complex to assess the validity of available information. In certain cases, obtaining all the required information to evaluate an investment opportunity may not be feasible (Alkaraan, 2020). This presents a significant challenge for decision-makers, as cognitive limitations and limited risk analysis may result in decisions that are more reliant on "risk as feeling" (Elmassri, Harris and Carter, 2016; Alkaraan, 2020).

Elmassri, Harris and Carter (2016) argue that in highly uncertain environments, non-financial considerations and objectives take precedence when evaluating potential investments. This is because capital budgeting techniques are deemed unreliable and, to some extent, "broken" in terms of decision-making rules. Identifying and evaluating uncertainties related to long-term investments is a challenging issue for decision-makers. The uncertainties can vary from factors like cash flow estimation to more complex issues such as complementarities among investments and opportunity cost. Uncertainty arises due to the inability to predict external market-related instabilities and internal firm-related factors. Asymmetric information among market participants leads to market imperfections, which make investment appraisal difficult. Furthermore, internal firm uncertainties arise due to relationships among investments over time, human-related information processing capabilities, agency problems, and human decision biases. These factors pose significant challenges in the investment appraisal process (Haka, 2006).

3.6.3 Heuristics

Kahneman and Tversky (1979) introduced prospect theory that explores how decision-makers behave in the face of uncertainty. Their research has revealed a notable pattern where managers tend to prioritize certain relevant information while disregarding other relevant information, leading to a distortion of rational economic analysis within the realm of human information processing (Kahneman and Tversky, 1979).

When faced with uncertainty, decision-makers often employ heuristics, such as intuition, industry experience, and "rules of thumb," to aid in the decision-making process. For example, if a decision-maker considers past losses when evaluating future options, it may lead to a different decision being made. Heuristics, such as relying on "rules of thumb," intuition, and industry experience, are frequently used to cope with uncertain scenarios. However, this approach can also lead to bias (Emmanuel, Harris and Komakech, 2010). Bazerman (2002) states that managers determine the frequency, probability, or possible causes of an event by the extent to which they can easily recall instances or occurrences of that event from memory. Decision-makers also compare new opportunities to a reference point based on their personal knowledge and experience, a process called anchoring and adjustment (Bazerman, 2002).

3.6.4 Framing

Strategic investment decisions made by managers can be influenced by what Brouthers, Andriessen and Nicolaes (1998) states, their economic and social background, education and work experience. Framing is another type of cognitive bias that relates to how decision makers react to the same information presented or framed in different ways (Tversky & Kahneman, 1986).

The term "framing" refers to how managers present information regarding a potential project and how they apply their own preferences when processing such information, which can result in bias towards initial or more recent information or maintaining the status quo. People's responses to the framing of a prospect may vary depending on their risk tolerance and whether the risks are communicated positively or negatively (Harris, 2009).

Framing is influenced by the presentation of the choice problem, as well as the decision maker's norms, habits, and expectations. Prior to evaluation, the decision maker may also perform operations such as canceling out common components and eliminating options that are deemed dominated by others (Tversky and Kahneman, 1986). People may prioritize certain information over others when making decisions due to their own self-interest, which can lead to variations in the importance of information among individuals and across different time periods. Framing, on the other hand, can be a tool to steer decision making by setting the boundaries for what information is considered relevant and disregarding alternative perspectives (Emmanuel, Harris and Komakech, 2010).

3.6.5 Consensus

According to Emmanuel, Harris and Komakech (2010) the combination of heuristics and framing in any uncertain decision-making highlights challenges of gaining agreement between members of a management group or project team. Consensus draws attention to group composition and the dynamic interaction of group members. The ad hoc ways in which managers seek to influence others and the various means of reaching consensus are pertinent to understanding decision making involving multiple managers (Mintzberg, Raisinghani and Theoret, 1976; Pettigrew, 1973; Schweiger, Sandberg and Ragan, 1986).

Emmanuel, Harris and Komakech (2010) suggests that when heuristics and framing are employed in uncertain decision-making scenarios, reaching agreement among members of a management group or project team can become a complex process. In this context, achieving consensus requires attention to the composition of the group and the interactions between its members. The techniques that managers use to influence others, as well as the methods employed to reach consensus, are important for comprehending decision-making processes that involve multiple managers. Consensus in group decision-making involves sharing and interpreting information to reach agreement on a proposal, while accepting cultural norms and corporate priorities. It does not require agreement on every aspect of the decision but allows for a cognitive consensus to be reached (Emmanuel, Harris and Komakech, 2010). Strategic decisions can be influenced by the relation between top managers and other organizational members, i.e., Politics. Politics refers to the observable, but often covert actions done by executives to enhance their power to influence the decision in order to secure the outcome of the strategic decisions they believe are the best, or at least aligned with their own interest (Brouthers, Andriessen and Nicolaes, 1998).

To arrive at a consensus, managers can exchange information and perspectives in various forms such as formal and informal meetings, or even through political lobbying. Different stakeholder groups may express their opinions, whether they are officially consulted or not (Harris, 2009).

The use of Managerial Judgment & Economic Rationality

4.1 Process

4.1.1. Phases of the SIDM process

The findings during the interviews shows that several interviewees were mainly focusing on the initial stage of the process when answering the question to walk us through the process they were following when making SID. This phase was described in different ways depending on which interviewee that was responding but the outcome of the first stage of the process was similar. The initial stage of the process was an identification and initiating step where the need for a new investment is identified. The need for a new investment can be identified in different ways. The main reason that a need is identified is for the organization to have the right capacity to fit the strategy that is put in place to gain competitive advantages. It is also stated that the initial stage of the SIDM process can be based on judgment in terms of finding an investment opportunity.

> *"You define a strategy and if you do it right it should be well thought out and you try to anticipate what competences you need to win against your competitors or where you want to be in, say like five years or something like that. When you have created that picture, you compare it with where you are today. And it can also be where your geographic location is and where the growth will be.*" - I3

Another part of the SIDM process that is commented by several interviewees is the last stage of the process, the stage after the implementation where the outcome is compared to what was expected of the decision. It is stated that there is a need for evaluation of the outcome after the implementation of the decision that is following up both the financial aspects but also non-financial aspects and the overall process of the decision. Thus, it is not done properly. After every investment that is conducted, there are lessons to be learned that can have an impact on future investment processes.

There is also a difference between whether the interviewees participate in the entire SIDM process or just participate in some of the stages. Some of the interviewees describe their position as being only in the last step of the process, which is the final decision making. They are presented with all the material from the previous stages and from this, their own perspective on the investment, they are making the decision. The interviewees that describe being a part of only the last stage of the process are mainly higher-level managers. Other interviewees that are lower-level managers describe that they are participating throughout the entire process and describe being a part of the process from the initiating phase until the implementation stage which is the phase after the decision is made.

Different from the other interviewees, I2 describes being a part of the process where the economic calculations are considered. The interviewee describes how the planning and analyzing stages of the process is where the economic valuations and figures are created which will contribute to the final decision making and whether they should present it to the board. The calculations are then presented to the high-level management which in turn have a decisive vote in the investment decision.

4.1.2 Formalization of the SIDM process

The formalization of the SIDM process refers to the extent of which the process is following a certain model and if the process exists in some type of steering document. The formalization of the SIDM process was more present in some of the organizations than in others. Some of the interviewees describe how the decision-making process looks the same within the organization. The calculations in the analysis phase are similarly done which means that every investment is presented in the same way to the decision makers. There are also clear templates and formalized steering documents that show how each investment process should proceed. These documents also contain tollgates on each step that can be used as a checklist during the process.

> *"Yes, it is the same for everyone. But there are different kinds of investment decisions but there is a clear process to follow. The board would be insane if you presented differently with different methods to calculate. It is obvious to follow the same principles. You can't calculate DCF in one way one day, and in another way the next day."* - I3

"The process is very formalized. The process is called Business Transformation and there are six steps; Initiate, Analyze, Design, Plan, Develop and lastly Implement. Each step consists of several tollgates that are also formalized and the same within the entire organization, worldwide."- I4

Different from the other interviewees, one interviewee describes how the SIDM process is less formalized and adjusted according to which type of decision is about to be taken. The process tends to look similar each time, but it is not formalized as in a steering document or template.

4.2 Managerial Judgment & Economic Rationality

When participating in SIDM, different kinds of information form the final decision. When asking the interviewees what type of information they mainly rely on when making decisions they responded in both similar and different ways. During the analysis stage of the SIDM process there is a clear need for an economic calculation and financial analysis. This step is totally dominated by economic rationality. All the participants point out the need for an economic analysis like this. In other words, all the interviewees agreed on the importance of clear economic calculations. These economic calculations consist of numbers such as NPV, Pay-back time, IRR, ROI. The financial evaluation is dominated by economic rationality.

Differently from the interviewee that describes economic calculations as the most important factor, another interviewee describes how the economic calculation, and the economic rationality is only one part of the information that forms the basis for the decision. The economic rationality is not sufficient by itself in SID considering its complexity. The economic calculation is forming the basis for a discussion dominated by intuition and gut feel rather than forming the entire decision. This discussion is not controlled by processes or templates which gives decision makers a chance to discuss the rational information and balance this information with gut feel, judgment, intuition, and previous experience. The final decision is described to be more dominated by gut feel, experience, and intuition, but it only reaches this point of the process if the economic calculations are considered acceptable.

> *" When you've done the strategic analysis, you point down and ask yourself: How you could fill this gap. Should I try to develop this? Can I develop this? How much time will it take? When you have answered these questions, you must do an economic analysis of course, an investment calculation, which can be more or less sophisticated. Based on this you have to have an insightful discussion and it is in this discussion gut feel or managerial judgment is present. Until this discussion you just follow processes, most of the big companies have a history and well-defined processes with templates to fill in. Also, the investment calculations, how to calculate hurdle rates and other things are based on templates. And when you have it on paper, the important part is to decide which alternative is the best. It is rarely clear to see that A is better than B, or than C or D or E."* - I3

The respondent also stated that numbers do play a role in evaluating the investment opportunities but that it is more used as a "sanity check" to assess the outcomes of a potential investment based on factors such as, increased savings, reduced cost or productivity gain. The respondent was clear to state that the business case and the calculation will never tell you the true story because according to the interviewer it's only numbers in a structured format. Anything can be put into an excel sheet and the excel does not consider other aspects as competitors and continuously changes in the market.

There is also a separation between what is considered a good investment opportunity theoretically and what would be applicable in reality. To decide whether the investment is applicable in reality, some of the interviewees mean that the judgment and intuition guides the decision-maker to the most accurate decision. Experience is also one of the most important sources of information when assessing whether an investment is applicable in reality or not.

> *"Yeah, summarized, I think that with all the input figures and other input, if we summarize that, I think it ends up being a common sense, stomach feeling basing the decision. And that's, that's the normal procedure"* - I1

It was also pointed out that intuition and managerial judgment is not limited to the individual decision maker rather the collective perspective of a group. The decision is often not based on the opinion of only one person. It is a group of people that are discussing different inputs and sharing their opinions. These opinions can be based on both calculations and economic aspects but also intuition, gut feel and experience from previous investments.

4.3 Factors influencing the decision making

Several factors influence the SIDM process and therefore individuals tend to modify their decisions and the most rational strategic decision may not always be taken. As stated in the citation below, a decision cannot be based on only one calculation since there are several other contextual factors that need to be considered when conducting SID. It can be external uncertainties, law enforcements and other factors.

> *"You don't base a decision on just one number. The calculation shows a certain number that is either good or bad but you don't make a decision based on just numbers. A decision is taken in a context which consists of numbers, risk, geopolitical considerations etc. Also how well the investment is aligned with the strategic position. In some cases it can be mandatory to do an investment which means that there is no other choice than investing. For example, law enforcement. Just look at the environmental legislation. Some investment is not a question whether you want to do it or not, you just have to do it." - I3*

4.3.1 The importance of experience

One of the main factors that is described to influence the decision making is experience from previous decision making. Experience of the decision makers is an influencing factor when it comes to aligning the investment with the strategic objectives. The importance of experience is a common insight that all interviewees mentioned during the interviews. To the question whether previous experience is a big part of the managerial judgment, almost all the interviewees describe how experience is determining a big part of the decision.

It is also described that the experienced decision makers often see younger, smart people come into the organizations with a well-developed intellectual mind-set. These intellectual horse-powers are good at determining whether the investments are theoretically good. This is considered important, but even more important is the ability to know whether an investment is applicable in reality. To be able to see the applicability to reality, experience is needed.

To exemplify the importance of combining economic rationality with previous experience and managerial intuition, one of the interviewees provides the study with an explanatory case. The case refers to the on-going war in Ukraine and shows that even though an organization may have had great economic incentives to invest in a production facility close to Russia.

> *"Think of this situation, three years ago and someone says that Russia is growing like never before, and it did for real, and someone says that we need to build a production facility outside of Mongolia which is a low cost with access to the Chinese market and the Russian market. There is a tax reduction and if you would have calculated on the investment it would probably look great. But it would be a terrible decision of course.* "- I3

When making decisions with bad outcomes, the importance of learning is mentioned by several interviewees. Learning is one of the main contributors to experience. By being a part of decision making with outcomes that are both good or bad, the people involved will learn what is working in reality or not. Previous successes can lead to new successes and previous failures will be avoided in the future.

> *"Personal experience is important when making decisions. Learning from previous decisions makes you rely on experience in future decisions. You need to have the courage enough to take risks. Sometimes you need to lose in order to win in the long run. Experience is key."* - I6

It is also stated that the individual decision maker tends to trust certain people more than others in the discussion. The young, inexperienced people tend to be less relied on because of their lack of previous experience. Older people with more experience of conducting SID are more reliable and therefore may have a stronger vote in the final decision.

4.3.2. The context of the SIDM-process

Organizational performance can affect to what extent decision makers use economic rationality or managerial judgment. To the question of what factors influence the decision-making process the interviewer mentioned organizational performance as one. The market situation of the organization is one factor that determines the offensiveness of the decision making. In a situation where the organization is performing well it is easier to rely more on judgment and gut feel. The economic situation is not as important to take into consideration as if the organization is financial constrained. There is more room to apply judgment or intuition in a situation like this. The interviewees described that in bad times they tend to rely more on economic rationality. There is no room to lose money so there is a need to be more defensive.

4.3.3. Uncertainty and external factors

External characteristics such as environmental uncertainty and strategy perspective also affect the level of rationality in the decision-making process. One of the external factors that are described to affect how the decision maker is evaluating an investment is politics and geopolitical changes. This is an external factor that is out of the control of the decision maker and the organization but is affecting how the decision is going to be made.

Another interviewee mentioned that the stability of the company will not be much affected by environmental uncertainty but that they will rather use the situation to be more offensive against its competitors. When the cash situation is good in the organization, there is an opportunity to use the uncertain geopolitical environment to gain competitive advantages when the competitors are affected negatively by the uncertain environment.

Majority of the interviewees confirmed that there were factors such as macroeconomic and political instabilities that influenced the decision-making process. Inflation is mentioned to be a concern that needs to be taken into consideration in both the calculations and in the final decision. Macroeconomic factors such as inflation are considered a factor of uncertainty.

There is also a situation where new laws and regulations are enforced. This is a situation out of the decision maker and the organizations control. An external factor that is out of the decision maker's control is considered an uncertainty. It is also a factor that can't be denied or avoided by the decision maker. Even though the calculations or managerial judgment is talking against investing according to the new law or regulation, there is no possibility to not invest.

4.3.4 Heuristics

It is stated that for new long-term investments they had to take indexation into consideration, and they base the decision on previous experience.

> *"If you look at the inflation, you have to pay the extra inflation index regulated in contracts. The indexes have gone up very much so there's still numbers to base it on". - I2*

It is also stated that the final decision relies on personal knowledge, leading to common sense.

> *"You have experienced this once or a couple of times before you have gone through those kinds of investments before and you learn from it. And what we have done before becomes common sense. I would say that it is a good ingredient. And you need to kind of work with this in a structured way".* - I1

4.3.5. Framing

It is described how a discussion can point in a certain direction according to how harsh the appearance is of some participants in the discussion. The stronger people have a bigger say in a group discussion. The decisions can also be affected by the amount of conviction by the one presenting the suggestion.

> *"Like a boardroom, like decision making moments or in the group that we have discussed the decision, and usually someone is along from the organization to present we want this and then it's like a discussion in the board or in the group, and then a decision is made, but, I'm afraid it might be that the stronger people in the room might set the agenda a bit*

> *more. So yeah. And also, if the organization itself is presenting this option, they might also be more or less strong in their conviction. And so have the winning arguments to explain what would happen if we don't do this?"* - I2

I3 states that there is a tendency to evaluate the investment through the lens of their preferences and intuition. And that the expectations and preferences are what separates relevant and disregarding alternative perspectives.

> *"I've seen outcomes that have not been good when young, talented people make decisions. I have more trust in experienced people than in young talents. But sometimes experience and expectations make it harder as well. But I would not want to be without it. It is the lens you use to separate the parts of the decision."* - I3

When asked what factors are important when evaluating an investment, the interviewer (I8) responded that when evaluating the investment they apply their own preferences, and in this answer, it is the risk appetite they consider beforehand. The interviewer stated that they have a high-risk profile and that is something they always have in the back of their mind hence considering different perspectives to make a healthy decision.

4.3.6. Consensus

I2 puts weight on group dynamics in the group that are involved in the decision. To reach consensus, the interviewee describes how it can be hard to be the one to say no in a room where everyone else says yes.

> *"I would say that group dynamics probably also reflect the decisions. Because if everyone else thinks it's a good idea, it's usually hard to say, be the one to reject. So I'd say there's maybe more of the dynamic in the group than your own intuition, mainly because it might be hard to stand out and be different."* - I2

I3 describes the importance of the group that is involved in the decision to be a well-balanced group where individuals have the right experience and intuition to complement each other. The interviewee means that a well-balanced group is more likely to reach a consensus that is more accurate to what is good in reality, than a group that is unbalanced and lacks experience and intuition.

> *And in these cases, you need to have a room of well-balanced people that have experience and intuition to be able to separate what looks good on paper and what is good in reality.* - I3

> *"To come to a point where all people in the boardroom agree to a decision, a discussion takes place where all perspectives are presented. This discussion is important because the outcome is the final decision."* - I6

5. Discussion/Analysis

5.1 Managerial judgment and economic rationality

The main finding of this study shows that managerial judgment is more or less present in all stages of the SIDM process, which is consistent with the findings of Emmanuel, Harris and Komakech (2010). The analysis or evaluation stage of the SIDM process is a stage where all interviewees execute an economic analysis which is dominated by economic rationality. This economic analysis contains different measures such as NPV, IRR, ROI, pay-off. These are used in order to see whether the investment is profitable or not and how long the time horizon will be until the investment will pay off. All the interviewees agreed on the importance of clear economic calculations and explained that without clear economic calculations there would not be a business case to present to the board and the investment would be rejected. The findings thus are implicating that the economic calculation is just forming the basis for a discussion, which is dominated by intuition and gut feel, rather than acting as a final factor for the entire decision and that the discussion is based on managerial judgment and not based on processes or templates. The discussion is taking the economic calculations into consideration, but the calculations and numbers are just a part of the discussion. Thus, the economic rationality is balanced with gut feel, judgment, previous experience and intuition. When the decision-making process is getting closer to a final decision, the economic calculations are already approved earlier in the process, and therefore the managerial judgment is more present. The final decision is more dominated by intuition, experience and judgment. Thus, the economic calculations are described to be used as an approval-function which allows for the judgment-based discussion. The discussion is held with a group of people, often a steering group or a board. The findings of the study also implies that intuition and managerial judgment is not limited to only one individual, rather the collective perspective of this group of people. The intuition and experience of each individual decision maker is presented and discussed, and the discussion ends up with forming the best possible final decision based on the different experiences and intuitions.

The theory proposed by Elmassri, Harris and Carter (2016) suggest that in highly uncertain environments, non-financial considerations, and objectives take precedence when evaluating potential investments. This is because capital budgeting techniques may be considered unreliable and ineffective in such contexts. Majority of the findings showed that calculation of an investment is usually presented to open a dialog for the investment proposals, and it's stated that when taking decisions under uncertain times they focus on non-financial factors and calculations are more of a “sanity check”. Furthermore, the findings show that the business case and calculation will never tell you the true story, it might resemble that there is a need for a deeper level of knowledge required to understand the decision than just relying on the numbers presented. Whilst number and calculation are important aspects of analyzing the business case, according to our findings it may not capture the full complexity and context of the decision.

In this regard, one of the limitations of relying only on business cases and numbers when making decisions is the exclusion of other factors such as market dynamics and the competitive landscape. These factors can be seen as harder to quantify and may require a deeper understanding that goes beyond the numbers.

This reflects non-financial considerations over relying solely on capital budgeting techniques and in our opinion to some extent supporting the theory’s argument that traditional capital budgeting techniques might be "broken" in terms of decision-making rules. The finding shows that it’s not completely ineffective since it's seen as a starting point for discussion, but it might be in the sense that the decisions are not heavily relying on economic rationality during uncertain times.

5.2 Experience

Another main finding during the interviews is the importance of using previous experience to navigate throughout the SIDM process and making sure that the decision is aligned with the strategy from the beginning. Furthermore, all interviewees agree on the importance of experience during the decision-making process. When the access to the information needed to make an informed decision is less present, there is a need to use managerial judgment and previous experience (Emmanuel, Harris and Komakech, 2010). Grant & Nilsson (2019) means that experience and intuition is an important factor when aligning the investment with the strategic direction of the organization, which is consistent with the findings of the study. The result from the interviews shows a need to include managerial experience in the decision making. There is a need to combine the theoretical perspective with what is applicable in reality, which is done by using experience. To find the balance between relying on theoretical knowledge and managerial experience, it is important to have a well-balanced mix of people throughout the process that can complement each other's opinions. Depending on the level of experience, the use of managerial judgment or economic rationality will differ. Experience is therefore a factor influencing the individual decision maker during decision making.

The study emphasizes that experience from past investments and incorporating that experience into decision-making is crucial. It is also stated that the experience becomes common sense and that it’s important to work with this experience in a structured manner. The statements from our findings are in aligned with the theory from Bazerman (2002), which states that managers determine frequency, probability, or possible causes of an event by the extent to which they can easily recall occurrences of that event from memory. The concept of applying heuristics can be viewed as a practical approach that extends the use of structured experience to improve decision-making, like a "rule of thumb."

5.3 Decision making behavior

The decision-maker is influenced by factors such as different decision makers' preferences, experiences, and intuition. These factors can lead to changes in decisions and affect the level of rationality involved in decision-making.

Tversy (1986) describes framing as a cognitive bias that relates how managers tend to react to the same information presented or framed in different ways. The theory of framing states that when managers present information regarding an investment and when they apply their own preferences when processing the decision. The result of this is that it creates a bias towards more or initial information but also a tendency to maintain the status quo. Managers' response to the framing of an investment may vary depending on their risk tolerance (Harris, 2009).
Our findings indicate a preference for experienced individuals over less experienced individuals when it comes to processing a decision. This preference, in relation to the theory, can be seen as an indication of framing a bias. Furthermore, the interview states that the trust in more experienced individuals, suggesting that their experience will serve as a lens in decision making and consequently increasing the potential of eliminating proposals of less experienced. In relation to the decision makers preferences, Emmanuel (2010) states that people prioritize certain information over others due to their own self-interest and that framing can be a tool to steer the decision making by setting the boundaries for what information is relevant and ignoring alternative proposals. Our findings on this show that using experience as a preference and as a lens to separate the proposals in our opinion can be seen as a filter to eliminate proposals that are not in line with the preference.

Besides experience the results have shown that power dynamics, senior people in the organization, tend to have stronger conviction and persuasive arguments. People with higher and stronger positions may have more control and a higher voice of which information is emphasized and how alternative perspectives are addressed. This result aligns with the theory that personal characteristics and self-interest can impact the decision making. It highlights the individual’s ability to communicate the potential impacts of not choosing a particular investment effectively and convincingly that led to that individual and that the individual’s ability to express the potential consequences of not pursuing a particular option may influence the decision towards their favor. This is also a clear sign that the framing is influenced by the presentation and that the decision maker may cancel out and eliminate options that are dominated by others (Tversky and Kahneman, 1986).

Even though the importance of experience is highlighted throughout the interviews, it is also acknowledged that having expectations and experience can sometimes make the decisions more challenging. This indicates an awareness of the biases that can arise from relying solely on experience, preferences, and expectations. The findings of the study implies that experience can contribute to different decision makers responding differently to the same information, which can be interpreted as a situation of framing (Tversky and Kahneman, 1986).

On the contrary, one of the interviews acknowledges their risk-taking tendency and that they need to consider this aspect when making decisions. This shows awareness of their preferences, more specifically their risk preference. The result shows a self-awareness and an understanding of potential biases connected to the individuals risk preference. To not create bias or status quo a second opinion from individuals with different risk profiles is needed. The result from the interview goes against Harris (2009) statement that preferences might create a bias. Reason for this might be that individuals' personal characteristics and self-awareness could potentially moderate the influence of framing bias.

The group dynamic is also considered important, and the findings shows that it can be difficult to be the disagreeing voice in a group where everyone agrees. This statement aligns with a theory from Emmanuel, Harris and Komakech (2010) that states that achieving consensus in decision-making involves navigating group dynamics and the challenges of expressing differing viewpoints. The findings also state that it is important to have a well-balanced group where individuals have the right experience and intuition to complement each other. Similar is mentioned by Emmanuel, Harris and Komakech (2010), to reach consensus it requires interaction between its group members and the need for different perspectives to contribute to decision-making processes.

5.4 Organizational performance

The findings of this research indicates that the performance of the organization in which the individual decision maker is operating is affecting the individual decision maker. The context of SID is necessary to understand to be able to analyze SID properly because the context has a significant impact on the SIDM process and the firm specific characteristics are a part of the context and more specifically, the organizational performance. The theory suggests that organizational performance can have an impact on whether the decision maker uses economic rationality or managerial judgment when making a decision (Pettigrew, 1973; Elbanna, 2007).

Our research strengthens the theory that organizational performance plays a crucial role in the decision making. The findings shows that decision making is dominated by managerial judgment and common sense in a situation where the organizational performance is better compared to other organizations that are operating in the same contextual environment during the same period. The interviews revealed that the offensive decision making is based on managerial judgment rather than economic rationality because they aim to gain and maintain competitive advantage and that they have an appetite to do so without the organization getting hurt.

The findings in our research shows that organizational performance is a factor affecting the offensiveness when making decisions. In times when the organizational performance is good compared to the competitors, there is room to take on more risk and be more offensive. To be more prone to take risks and being more offensive means that the outcome is less certain. In our opinion the positive organizational performance can be seen as a cushion to the organizations and allowing them to take setbacks and losses.

5.5 Uncertainty and external factors

Uncertainty and external factors that are out of control of the individual decision maker is also a factor that are influencing the decision maker. Uncertainty in decision making refers to the difference between the available information and the required information to make an informed decision (Verbeeten, 2006). The findings of this study highlight the importance of taking external factors into consideration when assessing a potential investment opportunity. External factors of uncertainty appear to be a vital part that makes the decision-making process difficult. It is challenging for decision makers to identify and evaluate uncertainties because it is out of their control.

A main finding within external factors of uncertainty is a situation where there is no alternative but to invest a certain way. This situation can be about law enforcement, or a certain regulation comes into effect. In this situation it is irrelevant if the economic calculations are bad or if the gut feel is telling you to not invest, since there is a new law or regulation that forces you to invest. The findings show how an investment decision in a case like this is not determined by something else than the new law enforcement. Either the economic rationality and managerial judgment is not decisive in this case.

A situation can also be regarding a system that is no longer supported by the system provider, which means that an external part force you to change the system. I6 calls this for a "technical necessity" and describes how an investment decision will not be determined by either managerial judgment or economic rationality, instead it will be determined by an external part that more or less enforces the organization to act in a certain way.

Also, geopolitical uncertainties such as wars and pandemics are mentioned to be uncertainties that affect the individual decision makers and their decisions. Recent events that are described are the war in Ukraine and the Covid-19 pandemic. These types of uncertainties influence the individual decision maker in terms of analyzing and managing risk. These types of uncertainties also tend to influence the decision makers differently depending on other contextual factors. In a situation where the organizational performance is good and the cash situation of the organization is beneficial, the uncertain times can be a way for the individual decision maker to be more offensive in order to exploit the weaker competitors and to gain and maintain competitive advantages.

The theory from Elmassri, Harris and Carter (2016) states that the economic rationality in using investment appraisal does not overlook important contextual factors. These factors can include political or social influences and subjective judgements, which adequately are not considered in the decision-making process. In response to this theory, the findings expand on the idea that contextual uncertainties, such as wars and pandemics, are highlighted as uncertainties that have an impact on the decision maker and the decisions-making process. Geopolitical uncertainties create an environment where the decision makers must tackle unpredictable factors that can influence their decisions. The contextual factors come with volatility and complexity hence making it challenging to the decision maker to make decisions solely on economic rationality.

5.6 Findings influencing future decisions

The findings during the interviews are telling that there is a clear lack of doing these types of post decision activities. For organizations to achieve their strategic goals, the level of success when conducting SID is a vital part. By doing a post completion audit, an organization can enhance organizational learning and use the PCA when planning for future investments (Huikki, 2011). The PCA should consist of previous mistakes and identify successful parts of the process that can be used during future SIDM processes (Huikki, 2011). A PCA has an enhancing function on organizational learning. Several interviews revealed that the post decision controls are not a prioritized part of the SIDM process. It is considered important to evaluate the outcome of the decision. Thus, it is rarely done and when it is done it is not done to a sufficient extent. Some of the respondents explain how a post completion control is supposed to be done according to the formalized SIDM process, but that is rarely done anyway. Some organizations don't have a formalized process that includes post decision controls and other interviewees explaining how previously conducted decisions where the outcomes of these decisions are not evaluated in a proper way.

At the same time, almost all of the interviewees agreed on the importance of experience when participating in SID. It is considered important being able to separate what is a theoretical successful investment and that is applicable in reality. This separation is done by using managerial experience according to the findings of the study. To not follow up the outcomes of previous decisions worsen the organizational learning instead of enhancing it by learning from previous actions. According to Huikku (2011), information from e.g PCA can be utilized for organizational learning which suggests that organizations can increase the experience of individual decision makers by putting more focus on post completion controls. By conducting PCA-reports and sharing these reports within the organization enables decision makers to get support in their own decision making by being able to access the outcomes of previously conducted decisions made by both themselves and their colleagues. Increasing organizational learning and by that enhancing the experience of each individual can be one factor that affects what information the individual decision maker tends to rely on. By having greater experience and being able to access other individuals' experience, it is possible that individuals rely more on experience and managerial judgment than they would without the enhanced experience.

6. Conclusions

6.1 Conclusion

The purpose of this study is to investigate factors that influence the individual decision maker during the process of SID. The results presented in the previous chapter indicate that there are several factors influencing the individual decision maker in different ways throughout the process of SID.

It can be concluded that the use of managerial judgment and economic rationality is more or less present in different stages of the decision-making process. The use of economic rationality is more present in the earlier stages of the SID process and is used more as a "sanity check", rather than forming the primary base of the decision in the later stages of the SID process. The later stages of the SID process are mainly dominated by the intuition and experience of the decision makers that are participating in the discussion. Thus, it is important to highlight that the economic calculations are taken into account, but they are not solely determining whether to invest or not.

It can also be concluded that the individual decision maker is influenced by the other individuals that are participating in the decision making. Mostly, the discussion that was previously mentioned is held within the steering group of the investment or the board. Each individual in this group of decision makers is influencing each other by contributing with their own preferences, intuitions and experiences. In this discussion, decision making behavior can be present which will affect the final decision.

The study also shows that experience from previous decision making is one of the most important factors that influences the individual decision maker when conducting SID. According to the findings of the study, experience is the factor that makes it possible to separate what investment opportunities are considered good theoretically and what is actually applicable in reality. The conclusion of this study highlights the importance of having a well-balanced mix of people throughout the SIDM-process, this to complement each other's opinion but also the use of managerial judgment and economic rationality will differ. Experience is therefore a factor influencing the individual's decision making.

The thesis identified framing as a factor that influenced the individual decision maker during the process. Individuals tend to have their own preference and rely more on experienced people which is seen as framing a bias that filters out proposals from less experienced individuals. Individuals' self-interest is a framing factor that influences the decisions, senior people have stronger conviction and can convincingly express the consequences of not exercising a particular investment in order to influence the decision in their favor. Therefore, it can be concluded that experience is not only influencing the individual decision maker, but also the discussion between several decision makers that affects the final decision. Reaching consensus with a well-balanced group of people that will complement each other by intuition and experience is a factor that will contribute to the decision-making process.

Organizational performance is a factor that will influence the decision making of the individual and the offensiveness when making the decision. It can be concluded that firms with healthy financial status will take on more risk and be more offensive against its competitors. Findings of this thesis indicates that organizations, when experiencing better organizational performance prioritize managerial judgment rather than economic rationality in their decisions. This is driven by a desire to gain competitive advantage without getting hurt.

It can also be concluded that external factors such as geopolitical uncertainties, law enforcements and macroeconomic instabilities have an impact on the decision maker and the decisions-making process. Geographical uncertainty will create a challenging environment characterized by complexity, requiring decision makers to tackle these factors. Findings show that due to this it would be challenging for decision makers to rely on economic rationality.

Factors such as law enforcement or a certain regulation will force the decision maker to invest regardless of any economic calculation or intuition that the decision maker has. Thus, uncertainty in terms of geopolitical and macroeconomic is influencing the individual decision maker.

Lastly, the study shows that future SIDs can be affected by not using each SID as an opportunity to learn. The use of post decision controls can be used to learn from previous decisions. It enables decision makers to see which decisions are successful and identify mistakes to avoid. The post decision controls are therefore not only a way to follow up previous decisions, but also a way to enhance organizational learning. It can therefore be suggested to implement formalized post completion audits in order to enhance the organizational learning and by that enhance future decision making.

6.2 Contribution

The findings of this study contribute to the literature by investigating what factors influence the decision maker on an individual level and not only analyzing what influences the decision making on an organizational level. The study identified several factors that influence the individual decision maker when conducting SID. The findings of this study also contribute to the literature by identifying how the organizational SID process influences the individual decision maker and how the design of the SID process can enhance future decision making.

The research question is answered by identifying several factors that have an impact on the decision maker and analyzing these factors and how they affect the decision.

6.3 Further research

To further investigate how the individual decision maker is influenced by different factors, extended research could be done where the decision maker is observed in each step of the SID process. This would make it possible to determine how different factors influence the decision maker in each step of the process and how the influence is affecting the final decision. This study is identifying that different factors are more or less present in different steps through the process of SIDM. To further investigate which factors are more present in different steps of the SID process would deepen the understanding of the contextual factors further.

Furthermore, the finding shows how experience is one of the most important factors that are influencing the decision maker, hence would be valuable to study how experience is used and maintained within the organization. To be able to maintain experience within the organization and transfer experience from one decision maker to another is therefore a suggestion for future research.

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Appendix - Interview Guide

The process of SID

1. What's the process for Strategic investment decisions? To what extent is the process formalized within the organization?
2. Can you walk us through the process you typically follow when making a strategic investment decision? With the research question in mind, does the use of economic rationality and managerial judgment differ in different phases of the process?
3. What are some examples of strategic investment decisions that you have been involved in?

Managerial judgment and economic rationality

4. What information do you typically rely on when making strategic investment decisions?
5. How do you gather information and data to inform your strategic investment decisions?
6. How do you assess the potential impact of external factors, such as changes in the market or regulatory environment, on a potential investment opportunity? And how do you base this in your evaluation?
7. How do your personal experiences and managerial judgements influence SIDM?
8. Do you think managerial intuition plays a big role in your organizations' strategic investment decision making? Or are decisions guided more by formal systems and analysis than by managerial judgment?

Factors influencing the decision making

9. What factors do you consider when deciding whether to rely more heavily on managerial judgment or economic rationality in the decision making process?