Department of Business Administration

BUSN79 – Degree project: Accounting and Finance

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# Strategic Investment Conceptualization:

## The power of experience and knowledge in the programming of decisions

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# Executive Summary

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| **Keywords:** | Strategic Investment Decisions, Strong-Structuration Theory, Programmability, Uncertainty, Covid-19 |
| **Purpose:** | The purpose of this paper is to investigate one of the seven characteristics proposed by Northcott and Alkaraan (2007): the characteristic of non-programmability. This paper responds to the call for a nuanced understanding of how companies are programming strategic investment decisions (Alkaraan, 2016, p. 520). |
| **Methodology:** | This study uses a qualitative inductive research approach. The purpose is fulfilled by conducting multiple case studies. The data collection method primarily involves interviews conducted with individuals involved in strategic investment decision-making. The Strong Structuration Theory was used in the analytical strategy to help analyze the collected empirical data. |
| **Theoretical perspectives:** | The paper expands upon the theorized concepts of programmability proposed by Alkaraan (2016). A holistic approach to these decisions is taken as different contingencies influence strategic investment decisions. The paper considers uncertainties of the emergent business environment, strategy, and the intuition, knowledge, and experience of decision-makers as contingencies affecting companies' ability to program decisions. |
| **Empirical foundation:** | The qualitative data for this study was gathered through a semi-structured interview process conducted with five individuals involved in strategic investment decision-making. |
| **Conclusions:** | This study unveils companies' different methods of programming their strategic investment decision-making processes. The efficiency of these methods is impacted by the uncertainty of the emergent business environment and the company's strategy. These methods can help companies better foresee and conceptualize some of the aspects of strategic investment decisions. This study contributes toward a holistic understanding of the decision-making process. |

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André Lådö

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## 1. Introduction

The world and the business environment are rapidly changing. Western countries' once relatively stable business environment has become more uncertain and risky. Marked by the beginning of the Covid-19 pandemic, companies are affected by disruptions in delivery chains, long delivery times, and component shortages. These factors are affecting companies either directly or indirectly. Russia's invasion of Ukraine has further exaggerated the global uncertainties as companies have ceased their operations in Russia in the wake of the invasion. Rising inflation, fluctuations in commodities, and raw material prices have further challenged companies wanting to make successful investment decisions. Companies have started to reevaluate their strategic investment decision making processes, as their old methods are no longer optimal for assessing the risks of the emergent business environment. As new methods are being developed, these can help companies better optimize and conceptualize the outcome of these decisions and thus increase their chances of mitigating the emergent risks and uncertainties to have a successful outcome of their decision-making.

Coping with the ambiguity and uncertainty associated with strategic investment decisions in the emergent business environment is a critical practical problem decision-makers face when making successful strategic investment decisions (Alkaraan, 2020; Elmassri, Harris & Carter, 2016; Emmanuel, Harris & Komakech, 2010). These decisions are inherently challenging due to this uncertainty, which is unavoidable. Since many different contingencies and structures influence these decisions, it is difficult to gather all the necessary information about a potential investment opportunity (Elmassri, Abdelrahman & Elrazaz, 2020). Subsequently, the strategic investment decision-making process cannot be properly understood unless we understand the environment of the decision (Carr, Kolehmanien & Mitchell, 2010; Kahneman & Klein, 2009; Elbanna & Child, 2007).

All companies desire a decision-making process that would result in a successful decision outcome. However, success involves an element of uncertainty and risk. Strategic investment decisions commit an organization to a new strategic direction - i.e., the organization's strategy is partly shaped by its investment decisions. Strategic decisions commit organizational resources that could otherwise be invested in other strategic projects. Devoting resources to a project carries a varying degree of risk, and the opportunity cost of these decisions is consequently high (Wilson, Branicki, Sullivan-Taylor & Wilson, 2010). Decision-makers could make successful investment decisions by chance (Kahneman & Klein, 2009); however, due to the possible risks, it is not desirable to make a decision purely based on luck. Companies that, instead, can conceptualize some of the outcomes of these decisions could potentially mitigate some of the associated risks and prevent organizations from committing resources to a project that could potentially become detrimental to the company's future success.

Unlike operational decisions, strategic decisions cannot be executed using a routine or a protocol since these decisions are by default non-programmable and unusual. Subsequently, few previous examples are available to follow as guidance in this process, and the outcome of these decisions cannot readily be conceptualized (Northcott & Alkaraan, 2007). Mergers and acquisitions, joint ventures, introducing new product lines, entering new markets, and improvements in business technologies are all examples of strategic investment decisions (Alkaraan, 2020; Alkaraan, 2016; Northcott & Alkaraan, 2007).

The proposition made by Northcott and Alkaraan (2007) in the literature is that all these strategic investment decisions have seven distinct characteristics in common, which differentiates these decisions from operational decisions. The strategic investment decisions are substantial, complex, long-term, competitively oriented, uncertain, subjective, and non-programmable.

Our paper closely follows the aspects of strategic investment decisions used and outlined by the seven characteristics proposed by Northcott and Alkaraan (2007). Our research will draw upon the theorized concept presented by Alkaraan (2016) that if a company has the knowledge and experience of pursuing similar investment opportunities, then its strategic investment decisions could partly become programmed through leveraging the experience and knowledge decision-makers have acquired from previously made non-programmed decisions. Subsequently, some of the outcomes of these decisions could be foreseen and conceptualized in advance. In our study, a programmed or semi-programmed decision is defined as a decision that can be executed using a routine or following previous examples of strategic investment decisions, consistent with previous studies (Alkaraan, 2016; Northcott & Alkaraan, 2007).

However, previous projects might not provide sufficient guidance in this process, especially if the project is innovative, thus relying on the intuition of the decision-maker (Emmanuel, Harris & Komakech, 2010). Competitive advantages could be gained for companies that are better at conceptualizing the outcome of strategic investment decisions than their competitors. As suggested by Porter (1995), the management needs to implement a strategy that assists in creating a fruitful and valuable position for the organization. The company's strategy could influence how some companies are better at programming their decisions than others. By programming aspects of these decisions, the company could more rapidly commit organizational resources toward projects that the company conceptualizes to be successful and thus gain a competitive advantage.

The purpose of this paper is to investigate one of the seven characteristics proposed by Northcott and Alkaraan (2007): the characteristic of non-programmability. This paper responds to the call for a nuanced understanding of how companies are programming strategic investment decisions (Alkaraan, 2016). Consequently, this research will address the following research question:

*How are companies that are particularly focused on strategically growing their business able to program parts of the strategic investment decision-making process while others may not be able to?*

Following this introduction, the methodological considerations are presented in chapter 2. Chapter 3 depicts previous literature on strategic investment decisions, their characteristics, and the contextual factors influencing the rationality of these decisions. The findings of this study are presented and analyzed in chapter 4. In chapter 5, the findings are discussed and compared with findings from previous research. The conclusion is presented in chapter 6, summarizing the outcome of the research conducted in this paper, highlighting the contribution to existing theory, and showing delimitations and implications for future research.

The researchers were inspired to conduct research on strategic investment decisions after participating in the course BUSO83 - Strategic Investment Decisions during the Accounting and Management Control track at Lunds University. The concepts of the seven characteristics of strategic investment decisions were discussed, and the researchers discovered a profound interest in this emergent and contemporary topic in the wake of the Covid-19 pandemic and other contingencies in current world affairs.

## 2. Methodology

*In this chapter, we focus on the methodological choices made in this paper. First, a discussion of the research approach that has been chosen is motivated and discussed. Secondly, the research design and the design of the cases for this study are shown, followed by a detailed description of the data collection and the analytical strategy. The limitations of the research approach and the quality are evaluated. Finally, the ethical considerations of the research approach are outlined and considered.*

### 2.1 The research approach

The research approach of our study is divided into four logical steps, addressing how we came up with our research question and how we answered it. Firstly, a literature review on strategic investment decisions was conducted. Secondly, our analytical strategy was developed, and the empirical material was gathered. Thirdly, the empirical material was analyzed. Finally, we used our findings to develop the theory and contribute to a better understanding of the programmability of the strategic investment decision-making process.

#### 2.1.1 The theoretical proposition

According to Bryman and Bell (2011), the first step when studying a phenomenon is to conduct a literature review. Therefore, the first step in our research approach was to conduct a literature review to gain a holistic view of the contemporary literature on strategic investment decisions. Only peer-reviewed articles were used and retrieved from databases such as LUBsearch and Google Scholar for this process. We used a couple of search words to identify these articles; these were used in conjunction with each other and separately: *Strategic investment decisions, Strategic investment decision-making process, capital investment decisions, investment decisions, programmability,* and *Strong Structuration Theory*. This was performed to identify the existing literature on strategic investment decisions and identify potential gaps in the literature.

Moreover, in the literature, seven distinct characteristics of strategic investment decisions have been proposed by Northcott and Alkaraan (2007) in order to distinguish these decisions from operational decisions. These characteristics are: 1) *Non-programmed and unusual*, 2) *Substantial*, 3) *Complex*, 4) *Long-term*, 5) *Competitively oriented*, 6) *Uncertain*, and 7) *Subjective*. A deeper understanding of these characteristics can help decision-makers conceptualize the outcomes of these decisions and make the process more effective, leading to more successful decision-making. This paper studied one of these characteristics - the characteristic of *non-programmed and unusual*.

We expanded upon the theorization surrounding programmability proposed by Alkaraan (2016). Some companies might be able to make their strategic investment decisions more programmed by leveraging the experience and knowledge decision-makers have learned from previous non-programmed projects (Alkaraan, 2016). Further, how the strategic investment decision-making process is influenced by its environment, the company's strategy and the decision makers' intuition are unexplored areas of the strategic investment decision-making process. The research has only looked at specific aspects of these issues (Haka, 2007) - i.e., these aspects have not been addressed holistically, and how these different aspects together might affect the strategic investment decision-making process. A holistic approach to investigating the process is a potential way to enrich the analysis and understanding of these decisions (Alkaraan, 2016; Elmassri, Harris & Carter, 2016; Harris, Northcott Elmassri & Huikku, 2016; Elbanna & Child, 2007; Haka, 2007). Responding to this call for a more holistic approach, the researchers championed the concepts of the Strong Structuration Theory (SST) by Stones (2005) for the analysis of the empirical data collected as proposed by Harris et al. (2016) and Elmassri, Harris, and Carter (2016). Elamssri, Abdelrahman, and Elrazaz (2020) suggest that strategic investment decisions are shaped by all four aspects of the SST framework. This theoretical proposition conducted in the literature review formed the basis for our research question. This process was completed before the collection of the empirical material. The theoretical proposition will become the primary vehicle for generalizing the findings of this case study (Yin, 2018).

### 2.1.2 Motivation and selected approach

The study we performed was qualitative. Bryman and Bell (2011) present different research approaches; *experimental study, cross-section study, longitudinal study, case study*, and *comparison study*. For the study conducted in our paper, we had the following reasoning for our choice of research design. An experimental study requires the researchers to possess the ability to manipulate the investigated behavior (Bryman & Bell, 2011). This was an element that the researchers lacked in terms of skills and ability, and thus we excluded this alternative. Cross-sectional studies are commonly used when examining several individuals and/or organizations at a specific moment and presenting data on the population at a certain moment in time (Bryman & Bell, 2011). Our study was not an investigation attributable to a particular moment in time, and thus this alternative was excluded. A longitudinal study often requires multiple observations over a significant period (Bryman & Bell, 2011). Due to time restrictions, this approach exceeded our capabilities, and the researchers excluded this alternative. A case study approach is suitable when the study's purpose is to analyze a contemporary phenomenon within a real-time context (Yin, 2018; Bryman & Bell, 2011). A comparison study design is suggested within qualitative research because it improves and strengthens theory building (Bryman & Bell, 2011). Given the purpose of this paper, the researchers found it appropriate to conduct multiple-case studies to allow for a stronger position for establishing the circumstances that can explain whether the theories developed can be generalized and may contribute to new concepts in emerging theories.

## 2.2 The method for collecting empirical material

### 2.2.1 The sampling

According to Bryman and Bell (2011), selecting participants for our multiple case study this paper is classified as a purposive sampling method. Our sampling aims to sample cases/participants so that those sampled are relevant to the research question. When contacting potential interviewees, we sent out an information sheet containing the purpose of this paper; see Appendix 1.

Specific criteria were relevant for selecting why we included or excluded cases. We sought to interview managers with relevant experience in making strategic investment decisions for our qualitative study. These managers should be directly involved with the strategic investment decision-making process of the company and be a member of- or directly report to the business management team or the board of directors. The manager does not need to make the final decision but is involved in preparing the basis of the decisions. The title of these individuals could range from Chief Executive Officer, Chief Financial Officer, Chief Operation Officer, Vice President, Merger and Acquisitions manager, or something similar.

### 2.2.2 Empirical data collected from interviews

The primary source of empirical material for this study was the interviews with individuals working in the strategic investment decision-making process. Bryman and Bell (2011) described that the interview process when conducting qualitative research is often less structured. However, some structure is still needed. We chose a semi-structured approach, following the definition by Bryman and Bell (2011). The authors state that this interview method aims to predetermine the main questions or themes to be assessed prior to interviewing; the risk of being limited to the predetermined questions in the interviewees' answers decreases with a semi-structured approach. Jack and Kholeif (2007) stated that the Strong Structuration Theory imposes a discipline to ask more penetrating questions. The four aspects of the Strong Structuration Theory were used as themes when the interview questions were formulated. We used the Strong Structuration Theory to examine the external structures influencing strategic investment decisions. The SST framework was also employed to explore the decision-maker's knowledge, experience, and intuition in the strategic investment process. This framework offers a helpful lens for understanding how managers interpret and react to emergent external structures and subsequent outcomes.

The predetermined questions, together with an information sheet regarding the purpose of the study, were sent out in advance so that the interviewees could prepare prior to the interview and contribute to the study. Sending the questions beforehand allowed the other party the opportunity to create well-composed answers with information that they would like to enlighten (Yin, 2018). The structural questions can be found in Appendix 2. The semi-structured approach allowed for follow-up questions depending on the direction of the interview and left sufficient room for the interviewee's expressions of opinion regarding the strategic investment decision-making process at their company. These informal questions enabled gathering information from answers, including personal opinions and interpretations. According to Bryman and Bell (2011), this strategy allows the respondent to use their own words, which in some cases will result in more qualitative data. Therefore, composing the interviews on a semi-structural basis gives the study more completeness in data collection and reliability. Further, it is crucial that the interviewer poses clear questions and allows the respondent to take time to answer the question at their own pace.

To increase the report's validity, Yin (2018) stresses that recordings of the interviews will strengthen the report. Recording the interviews facilitated the ability to distinguish relevant empirical data, and the risk for misinterpretation was decreased when recording the interviews. We decided to use recordings to strengthen the report's reliability following these benefits. The interviews were transcribed after each interview, and the anonymized transcriptions can be provided upon request if contacting either of the researchers.

The interviews were conducted between April 23 and May 20th. Most of the interviews took place digitally, and the reason behind this is attributable to the ongoing situation with Covid-19 and our relative distance to those agreeing to participate in our study, therefore preventing us from conducting the meetings physically. We would, of course, have preferred only to conduct on-site interviews, as it provides better conditions for reacting to and interpreting the respondent's facial expressions and body language (Bryman & Bell, 2011). With only conducting online interviews, Zoom became our main communication channel. The interviews were held in English and ranged between 27 and 45 minutes in length, with an average time of 34 minutes.

In preparation for the interviews, a large amount of data for each examined organization was gathered and interpreted. The report has not presented this data, but it allowed the researchers to master the technical and industry-specific language and better understand the respective company. This was done to enable more in-depth formulations and in-depth discussions from the interviewees (Brinkman & Kvale, 2014). Further, Yin (2018) stresses that the interviewer must be well informed and show genuine interest in the respondent to gain meaningful information. Otherwise, the respondent will not be receptive to presenting more qualitative information. During all of the interviews, both researchers were present.

### 2.2.3 Additional material collected

Similar to Elmassri, Harris, and Carter (2016), we position this research at the ontic level. Stones (2005) states that we should move to ontic analysis to understand a particular social phenomenon at a given time and space. These concepts are used to construct the conceptual definitions of Strong Structuration Theory at the abstract level encompassing all structures, agents, times, and spaces. Since our study focuses on decision-makers in the emergent business environment with increased levels of uncertainty caused by the Covid-19 pandemic and Ukraine crisis, we found this setting appropriate. Jack & Kholeif (2007) showed that the ontic level facilitates the researchers to perceive the inclinations and practices of the agent. SST primarily constitutes a model for empirical research in established contexts by linking the ontic to a meso-level framework via bridging (Elmassri, Harris & Carter, 2016; Coad & Herbert, 2009). To employ this deep-ontic research, we enlisted a combination of document research, website research, and focused semi-structured interviews. Although, the primary empirical material collected was the information from the semi-structured interview. Since our research was to investigate intuition, knowledge, and experience and how they respond and react to external structures, the researcher found limited use of financial reports. A study into decision-makers thought processes and rationalities could not be captured within hard accounting numbers.

The key to understanding external forces within our study was to clearly understand the two major disruptions affecting global markets in the contemporary period; the COVID pandemic and the Ukraine war. The researcher looked into how our interviewees' respective countries and companies reacted to the situation. Additionally, we looked for other information that could place external pressure on the companies when we requested interviews. Aside from the interview data obtained, the researchers also drew upon other sources of information; Organizational financial reports, current new reports regarding the companies in focus, and information on the companies' websites. By obtaining information from organization outlets, the researchers could corroborate the data obtained in the interviews, allowing the researchers to triangulate aspects within the data analysis. Additionally, given the SST lens that is purposely applied throughout the study, the documents and companies' websites played an important role in contextualizing the organization and agent in focus. These documents reviewed are not presented in the appendix as they were used as a means for the researchers to gain a deeper understanding of the organization prior to conducting the interview.

### 2.3 The method for analyzing the data collected

According to Yin (2018), case studies may easily become stalled at the analytical stage if the study lacks an analytical strategy. The analytical strategy of this paper was chosen before collecting the data and guided the analysis to ensure that the data was analyzable after being collected. The Strong Structuration Theory has been suggested to be used when researching strategic investment decisions. The theory can hold a greater promise than either the Grounded Theory or Practice Theory towards unpicking the complex social processes of human interactions (Harris et al., 2016). Despite the call for a more holistic theorization of strategic investment decisions, the Strong Structuration Theory has not yet been extensively used in research conducted on the strategic investment decision-making process (Elmassri, Abdelrahman & Elrazaz, 2020; Harris et al., 2016; Elmassri, Harris & Carter, 2016). Subsequently, there was a lack of guidance on applying this as an analytical framework to strategic investment decisions.

The Strong Structuration Theory analyzed the empirical material collected from the case studies. Our analytical strategy revolved around the quadripartite nature of the Strong Structuration Theory (SST). The four aspects of the SST framework consist of 1) *External structures,* 2) *Internal structures,* 3) *Active agency,* and 4) *Outcomes.* The internal structures are divided analytically into two components: 1) *the conjecturally specific knowledge of external structures* and 2) *the general-dispositional or habitus* (Stones, 2005). These different aspects will form how we will analyze the data. We identified four general themes in the empirical data collected based on the questions asked during the interviews. These themes were based on the aspects of the SST framework. If the person interviewed discussed one of these themes, we coded these sections with color. From the transcribed material, we extracted quotes that we used to identify the various themes and how they related to the literature, SST framework, or emergent themes. These emergent themes included; uncertainty, strategy, and the heuristics and intuition of decision-makers. This method helped us identify similarities and differences between the data and the literature on strategic investment decisions.

We began our data analysis by analyzing the agent's perceptions of the *external structures* affecting the decision-maker. We then expand upon the *internal structures* of the agent in focus. Finally, we analyzed how the decision-maker draws upon the external and internal structures in the decision-making process in the *active agency* and the subsequent *outcome* and to what extent these contribute to the decision-maker's ability to program decisions.

### 2.4 Criteria for judging the quality of the research

Case studies are often criticized for being too subjective (Yin, 2018). To ensure that the case studies made in this paper do not become too subjective, we will address the criteria championed by Yin, 2018 in which four logical tests can judge the quality of the research conducted; 1) *Constructing validity*, 2) *Internal validity*, 3) *External validity,* and 4) *Reliability* (Yin, 2018). In the subsequent sections, we address these four tests and our achievements.

The first criteria of Constructing validity is fulfilled if multiple sources are used to validate something. In this study, we have used a variety of sources in order to make conclusions based on the data collected. These sources include interviews of multiple individuals making strategic investment decisions and documents such as annual reports and other documents. According to Yin (2018), this ensures that a chain of evidence is made.

This second criterion of Internal validity judges the quality of causal relationships established by the study's findings. Yin (2018) exemplifies this as incorrectly concluding that there is a causal relationship between x and y without accounting for some third event, z, which might affect y. Subsequently, if the investigation fails to acknowledge this third event, the research design has not dealt with the threat of internal validity. We acknowledge that there are potential events and factors that this paper has not covered that could influence the studied phenomenon.

The third criterion of External validity addresses the problem of knowing whether the study's findings could be generalized across social settings (Yin, 2018). Since qualitative research typically entails the intensive study of a small group of individuals sharing specific characteristics, the findings tend to be oriented to the contextual uniqueness and aspects of the social world studied (Bryman & Bell, 2011). Having a theoretical proposition and supporting the findings with previous findings on the topic can help generalize the findings from the case studies, which is a method suggested by Yin (2018). Multiple case studies were conducted; thus, we will replicate the same phenomenon under different conditions, further adding to the generalizability of the findings.

The fourth criterion of Reliability concerns whether the study results are repeatable. This ensures that if later researchers follow the same procedures described by an earlier researcher, they can come to the same findings and conclusions (Yin, 2018). Subsequently, all design choices made in our study have been documented and addressed in the method chapter. The data collection method, analysis, interview questions, interview transcripts, and other relevant material to the process are accessible in the appendices of this paper. We acknowledge that it is impossible to "freeze" a social setting and the circumstances of the initial study. Subsequently, if later researchers were to follow the same procedures as documented and described in this method chapter, they might not be able to repeat the results of this study.

### 2.5 Research limitations

When conducting research, it is crucial to know how the methodical choices influence the study's outcome. An inductive qualitative case study has drawbacks which will be discussed in the following sections. The four criteria discussed in the previous chapter will be used to evaluate the quality of the research approach given the research limitations; these consist of 1) *validity*, 2) *internal validity*, 3) *external validity,* and 4) *reliability.* Based on these four criteria, the researchers acknowledge three different themes of limitations concerning the empirical findings: 1) *the limitations of the collection of the empirical material*, 2) *the limitations of the interview process,* and 3) *the limitations of the analytical strategy.*

The first of our limitations concerns the collection of the empirical material. This paper's data collection is compromised due to the time restriction and sample size. According to Bryman and Bell (2011), the key idea behind theoretical saturation is to sample until a category has been saturated with enough data. Given the time restrictions of this study, we were only able to conduct five interviews with one individual at each company. By interviewing only one person at each company, the study's outcome might risk violating both the criterion of validity and external validity. However, since the interviews were conducted with different individuals working in different industries, positions, and countries, the findings of this study could be generalizable across different social settings since a variety of sources were used to validate the empirical material collected.

An additional limitation of our collection of the empirical material is the bias of only using LubSerach and Google Scholar as databases when retrieving different articles to be used throughout our paper. This would cause a latent bias as the researcher might have gained access to other papers and research on strategic investment decisions if other databases were also used.

The second of our limitations concerns the interview process. Conducting interviews poses some inherent challenges and limitations, especially if the interviews are conducted online and in another language than the native tongue of the interviewee or the interviewers. All interviews were conducted in English; however, the parties involved in the interview process had varying proficiency in English. Three interviewees have English as their first language, and the rest only have it as their second or third language. Thus idioms, expressions, and multiple meanings might have affected the outcome of the study since these are differently used in the English language. However, Some of the risks were reduced since one of the researchers has English as his first language, but the residual risk was kept in mind.

An additional limitation of our interview process concerns access. The research approach of this study relies upon having access to people, organizations, and potential documents. The access to these individuals in the upper echelon of different companies was limited. The researchers were denied access to many of these individuals and had to rely on interviews with individuals further down the echelon. If granted access to individuals in the upper echelon and internal documents, the outcome of this study could have been different.

The third of our limitations concerns the analytical strategy of this paper. As a research team, we had no previous understanding or experience of the complexities of the Strong Structuration Theory prior to conducting this study. How this theory was used throughout this paper might risk violating the reliability criteria. There are biases in how the researchers used the SST framework. Due to the lack of guidance on employing this framework as an analytical strategy, the researcher followed the work conducted by Harris et al. (2016) and Elmassri, Harris, and Carter (2016) as guidance when formulating the analytical strategy and the structured questions. How the researchers interpreted and emphasized the different aspects of this framework could have influenced the outcome of the study - i.e., the researchers of this study might not have interpreted the aspects of the SST framework in the same way as other researchers have done and will do in the future. Interpretation of the SST framework has implications for future researchers seeking to repeat the results of this study in the future.

An additional limitation of the analytical strategy concerns the risk of not capturing all aspects that could influence strategic investment decisions and companies' ability to program these decisions, thus risking violating the internal validity criteria. The researchers acknowledge that the scope of this study does not capture other influences; however, by employing the SST framework as an analytical strategy, a more holistic approach to investigating strategic investment decisions is attained compared to other studies conducted on this topic.

However, a common theme in the interviews was that the strategic investment decisions were made by a group of individuals rather than one manager - e.g., an investment committee, the board of directors, or the executive team made the final decision. The researchers could subsequently only capture snapshots of the strategic investment decision-making process as iterated by the person interviewed.

The programmability of strategic investment decisions progresses over a longer period and involves multiple individuals at different stages, influencing the outcome of these decisions. These individuals contribute toward a programmed decision as they use their knowledge and intuition of their respective expertise and experiences as they are consulted prior to the final decisions to pursue a strategic investment opportunity.

Since multiple case studies were conducted, the results of this study are generalizable, but the researcher acknowledges that the criterion of external validity as proposed in chapter 2.4 in the methodology is violated. Without the time restriction, longitudinal case studies involving several different managers in different companies over a relatively extended period could further enrich the analysis of how managers program strategic investment decisions. Conducting a longitudinal case study would increase the external validity criteria, leading to more generalizable results as the researchers could ask more questions in real-time. The theoretical saturation could also be improved as more data is collected in a longitudinal case study.

### 2.6 Ethical considerations

It is important to be aware of and address ethical concerns of conducting research. Our research supports the position of Bryman and Bell (2011) that it is important to address all ethical considerations in all stages of conducting business research (Bryman & Bell, 2011). These studies involve both people of interest and confidential information in one way or another. Thus, it is particularly important to be aware of and address ethical issues when conducting field research. Bryman and Bell (2011) discuss four main areas to consider in ethical principles: 1) whether there is *harm to the participants*; 2) whether there is a lack of *informed consent*; 3) whether there is an *invasion of privacy*; 4) whether *deception* is involved.

When initial contact was made with the interviewees, an information sheet regarding the purpose of this study, who we were, why they were offered to participate in the study, and what information was to be collected was provided. The four areas of ethical principles discussed by Bryman and Bell (2011) were covered in the information sheet. The information sheets were provided to ensure that the participants were informed about the study and could decide whether to participate in this study or not.

Research that is likely to harm the study participants is clearly unacceptable. Thus, the confidentiality of records and anonymity of accounts needed to be considered and respected (Bryman & Bell, 2011). Subsequently, the information provided by the person interviewed was handled with care. We chose to anonymize the interviewees and the companies used in our case study. We discussed how we would refer to the interviewee and the company throughout our paper during the interview process. We also asked for permission to record the interview. All quotations were ultimately anonymized for uniformity within the report. In order to protect the data collected from unauthorized access or usage, any documents, recordings, or other confidential information containing personal information, were only accessed by the researchers and were destroyed upon completing this paper. All the measures mentioned above and research design choices were made to ensure that potential ethical issues were considered when conducting this study.

## 3. Literature Review

*In the following section, the literature on strategic investment decisions is reviewed. We draw upon contemporary literature on the subject that traces the origin of our research question. A potential gap in the research is identified in this section and will be returned to in our case study in the following chapters. This chapter is based on the following sections: An introduction to the characteristics of strategic investment decisions, a review of the holistic approach to studying strategic investment decisions, and followed lastly by the external and internal structures that affect the rationality of these decisions.*

### 3.1 The characteristics of Strategic Investment Decisions

Every day, companies make new decisions. These decisions range from being more operational and those which are more strategic. Since operational decisions are less risky, managers can readily conceptualize these, and the decision-makers likely understand the outcome well in advance. Operational decisions are closely associated with the company's current operations - e.g., expanding a current line of business or replacing existing assets.

On the contrary, strategic investment decisions initiate a new, innovative, and risky endeavor for the organization. The outcome of these decisions is not readily conceptualized by managers since there are no previous examples to follow for guidance when making these types of decisions. These decisions are closely related to the company's strategy and, once made, will commit the company to a new strategic direction (Northcott & Alkaraan, 2007). Due to the ambiguity and the importance of these decisions, a deeper understanding of these is inherently practical for decision-makers to comprehend the strength and weaknesses of a company's current investment decision-making process (Alkaraan, 2016).

Seven distinct characteristics have been proposed in the literature to conceptualize these decisions (Northcott & Alkaraan, 2007). This literature review will utilize these seven characteristics championed by Northcott and Alkaraan. These seven characteristics provide a conceptual framework for understanding strategic investment decisions. The researchers first gained familiarity with these seven characteristics during the course BUSO83 - Strategic investment decisions. The views and interpretations of the characteristics have been influenced by the concepts and ideas presented during that course. These seven characteristics are not to be viewed as separate addressing different aspects of the strategic investment decisions but instead to be viewed as intertwined. A deeper understanding of these characteristics can make a company's decision-making process more effective and successful.

These seven characteristics are summarized by Northcott and Alkaraan (2007, p.200) below, including an explanation/interpretation of them:

1. *Non-programmed and unusual* - there are no previous examples of similar decisions to follow as guidance when making strategic investment decisions.

2. *Substantial* - they require a significant commitment of organizational resources, and the opportunity cost of these decisions is consequently high.
3. *Complex* - they tend to influence- and be influenced by multiple factors and require diverse expertise and knowledge.
4. *Long-term* - they have a profound impact on the firm's long-term activities and performance and are intended to help a firm achieve its long-term goals.
5. *Competitively oriented* - they are intended to maintain or enhance the firm's competitive position by developing new products or market opportunities, exploiting technological developments, or enhancing production flexibility and efficiency.
6. *Uncertain* - the outcome of these decisions can be difficult to determine since the decision-maker's knowledge of the potential costs and benefits is often incomplete; thus, the outcomes are often hard to conceptualize.
7. *Subjective* - these decisions are influenced by the values and expectations of those who determine the organization's strategy.

According to Northcott and Alkaraan (2007), non-programmability challenges decision-makers due to the lack of prominent previous examples for decision-makers to follow in the strategic investment decision-making process. When faced with this challenge, the decision-maker will try to factor familiar and structural elements into the decision-making process and effectively make these decisions more programmed (Mintzberg, Raisinghani, & Theoret, 1976).

Despite the ambiguity of these strategic investment decisions, some decision-makers could foresee the outcomes of strategic investment decisions with some certainty, given that the decision-maker has experience of similar past investment decisions (Alkaraan, 2016; Harris, 2014). This suggests that the strategic investment decisions, despite being non-programmed, may become programmed when the decision-makers' experience is transferred from one investment opportunity to another (Alkaraan, 2020; Alkaraan, 2016). Alkaraan (2016) theorized that intuition and knowledge shape the decision maker's view of a potential Strategic investment decision by simplifying heuristics.

### 3.2 The Strong Structuration Theory (SST)

We contend that there is a lack of a holistic approach to investigating strategic investment decisions. A deeper, more nuanced, and holistic understanding of how strategic investment decisions are influenced by factors such as uncertainty, the company's strategy, and the decision makers' cognition is an unexplored area of strategic investment decision-making research. A holistic approach to investigating the process is identified as a potential way to enrich the analysis of these decisions - as the contemporary global business environment has become more turbulent and dynamic (Elmassri, Abdelrahman & Elrazaz, 2020; Alkaraan, 2016; Harris et al., 2016; Elbanna & Child, 2007; Haka, 2007).

### 3.2.1 The un-holistic approach to theorizing strategic investment decisions

The research has primarily looked at how one specific aspect influences strategic investment decisions. Only considering one aspect of these decisions is inappropriate since multiple factors influence the process (Alkaraan & Northcott, 2013; Carr, Kolehmainen & Mitchell, 2010; Haka, 2007). Elbanna and Child (2007) tried to integrate different aspects - i.e., contextual factors - into a model to better understand how these factors might influence strategic investment decisions. The authors modeled the rationality of strategic investment decisions as a combination of factors influencing these decisions. Different perspectives influencing the decision were integrated into the model, including environmental factors, characteristics specific to the decisions, and company characteristics. The author further acknowledges that the characteristics of the decision-maker might also influence the rationality of these decisions, despite it not being incorporated into the model.

Despite contributing toward a better understanding of the theorization around strategic investment decisions, the model proposed by Elbanna and Child (2007) is not without its limitations. The contextual factors identified by Elbanna and Child (2007) might not be independent but rather intertwined. How these factors might be intertwined can be exemplified using the findings of Kahneman and Klein's (2009) study. The authors suggested that determining whether the intuitive judgment of managers can be trusted requires examining the environment in which the decision is made. The characteristics of the decision-maker - e.g., their ability to make an intuitive judgment of a decision - would subsequently be influenced by the environment in which the decision is made.

Since there is a lack of a holistic approach to studying strategic investment decisions (Alkaraan, 2016; Harris et al., 2016; Haka, 2007), there is a subsequent lack of understanding of why some companies are better at programming their decisions compared to others. Since *non-programmability* is a characteristic of strategic investment decisions (Northcott & Alkaraan, 2007), how companies can program decisions are influenced by the potential factors influencing strategic investment decisions - suggesting that a holistic approach would enrich the analysis of these characteristics. Strategic investment decisions are constructed by these different influences (Elmassri, Abdelrahman & Elrazaz, 2020).

### 3.2.2 The holistic approach to theorizing strategic investment decisions

In response to this call for a holistic approach to theorizing the strategic investment decision-making process, the concepts from Stones' (2005) Strong Structuration Theory (SST) have been used in order to gain a more holistic approach to the research conducted on the strategic investment decision-making processes (Elmassri, Abdelrahman & Elrazaz, 2020; Harris et al., 2016; Elmassri, Harris & Carter, 2016). Many different contingencies influence the strategic investment decision making process. Social-, political-, organizational- and contextual factors and managerial judgment shape strategic investment decisions (Elmassri, Abdelrahman & Elrazaz, 2020).

The quadripartite framework of SST was first proposed by Stones (2005) as a holistic theoretical framework where external and internal structures, agents, and outcomes are intertwined. Elamssri, Abdelrahman, and Elrazaz (2020) suggest that Stones' framework is four aspects that shape strategic investment decisions. The four aspects of the Strong Structuration Theory are 1) *The external structure,* 2) *The internal Structures,* 3) *The Active agency,* and 4) *The outcome*.

1) *The external structures as conditions of actions* - These structures are autonomous of the agent-in-focus but affect the agent (Stones, 2005, p. 84). These external structures may include corporate strategies and control systems and social, political, and cultural dimensions (Harris et al., 2016). External structures are both acknowledged and unacknowledged by the agent in focus. These might constrain the agent and enable them with opportunities and capacities (Stones, 2005, p. 109).

2) *The internal structures* - Refers to the structures within the agent. These internal structures can be further divided analytically into two components:

    a) *Conjunctionally specific internal structures* - refer to the agent's specific knowledge of a particular context which is “knowledge of interpretative schemes, power capacities and normative expectations and principles of the agents within context” (Stones, 2005, p. 91).

    b) *General-dispositional structures or habitus* refers to the experiences and values that influence the agent, naturally and unconsciously, without thinking (Stones, 2005, p. 88).

3) *Active agency* - refers to how the *agent-in-focus* draws upon their internal structures, either routinely, pre-reflective, or strategically and critically (Stones, 2005, p. 85).

4) *Outcomes* - this fourth and final aspect refers to external and internal structures and events outcomes. These are the outcomes of the active agent (Stones, 2005, p. 85).

According to Elmassri, Harris, and Carter (2016), the Strong Structuration Theory depicts organizations as social systems, producing and reproducing through the interaction of agents and structures. The Strong Structuration Theory suggests that understanding strategic investment decisions requires understanding the external structures influencing these decisions. According to the authors, the SST framework can also be employed to explore the managerial judgment of agents, as it helps to understand how the agents interpret and respond to the external structures.

### 3.3 Rationality of strategic investment decisions

Strategic decisions commit organizational resources that would otherwise be used for other organizational projects. Devoting resources to one project carries a varying degree of risk, and the opportunity cost of these decisions is consequently high (Wilson et al., 2010).

There are factors surrounding a decision that adds to the understanding of variance in decision-making rationality (Elbanna & Child, 2007). Strategic decisions are about the future states of affairs and are based on incomplete information. These decisions are made in a context of both uncertainty and risk. Predictive models like economic rationalism are too simplistic - since decision-makers can not rationally evaluate certain aspects of the strategic investment opportunity. Decision-makers will draw upon various information, including their intuition, prior to making a strategic investment decision (Frezatti, Carter & Barroso, 2014; Wilson et al., 2010).

### 3.3.1 The uncertainty of the environment

Some outcomes of strategic investment decisions could be foreseen with some certainty, especially when the decision-maker has knowledge and experience of making similar decisions in the past. Other outcomes of these decisions are, on the contrary, less foreseeable and would thus stay within the realm of "uncertainty" (Alkaraan, 2016; Harris, 2014). Decision-makers need to account for external factors such as; political, macroeconomic variables, technological and financial risk, and uncertainty (Alkaraan, 2020). However, the future cannot be accurately anticipated, and strategic investment decisions must be made with only limited information about these uncertainties.

Environmental uncertainty is rarely formalized in the strategic investment decisions making process. An explanation provided in the literature is that most studies on strategic investment decisions are conducted in "western" countries, whereas the external structures are assumed to be more stable  (Elbanna & Child, 2007; Elmassri, Harris & Carter, 2016). However, given the current business environment, uncertainty is unavoidable, making it challenging to gather the necessary information about a considered investment opportunity (Elbanna & Child, 2007; Harris al., 2016; Elmassri, Harris & Carter, 2016). Coping with the ambiguity and uncertainty associated with these decisions is a critical practical problem decision-makers face (Alkaraan, 2020).

The early stages of the Strategic investment decision-making process require modeling under macroeconomic scenarios and internal and external parameters assumptions. This could include assumptions about economic growth, commodity prices, exchange rates, and political and financial risk (Alkaraan, 2020). The environmental uncertainty surrounding a strategic investment decision is beyond the control of a decision-maker; however, decision-makers need to anticipate these uncertainties since external factors influence the decision.

Their research on corporate managers making strategic investment decisions in post-revolution Egypt (Elmassri, Harris & Carter, 2016) highlighted that decision-makers are impacted by the uncertainty of external structures when making strategic investment decisions. Under uncertainty, non-financial considerations and objectives might take precedence over technical accounting measures. The adoption and implementation of technical accounting methods might be challenging under uncertainty. The authors suggest that making strategic investment decisions under uncertainty is context-specific and individual.

Under extreme uncertainty - i.e., when economic, political, and social factors are neither stable nor predictable - strategic investment decision-making is complex due to the radical nature of change. Rational evaluations of outcomes of such decisions are also complicated and inaccurate. Since Strategic investment decisions are proposed to be sensitive to both the context and that of the decision-maker, the judgment and heuristics of the decision-maker become interesting to analyze to understand how to make effective decisions under the influence of uncertain external structures (Elmassri, Harris & Carter, 2016).

The importance of knowledge of the industry and the market is essential when making subjective judgments about the riskiness of strategic investments under uncertainty (Alkaraan, 2020). A high level of domain expertise can amplify the effectiveness of intuition relative to that of a more analytical approach (Dane, Rockmann & Pratt, 2012). The more frequent and consistent interaction with the environment - i.e., regularly making strategic investment decisions - fosters implicit learning and knowledge. The outcomes of decision-making in zero-validity environments are effectively unpredictable. A stable environment, on the contrary, is characterized by high validity, fostering the development of intuition. Decision-makers might still be able to make successful judgments and decisions by chance, even though the environment is unpredictable (Kahneman & Klein, 2009).

### 3.3.2 The influence of strategy on strategic investment decisions

To understand the consequences of strategic investment decisions, an understanding of a company’s strategy is required. Strategic investment decisions commit an organization to a new strategic direction - and these decisions would both shape and reflect the strategy of a company (Northcott & Alkaraan, 2007). Strategic decisions shape a company's strategy by committing resources that could otherwise be invested in other strategic opportunities. Devoting resources to one project carries a varying degree of risk (Wilson et al., 2010). Strategic decisions reflect a company's strategy since the outcomes of these decisions are guided by the company's strategic goals (Northcott & Alkaraan, 2007).

Organizations need to monitor, alter and evolve new strategic positions continuously. The strategic position can be characterized as developing and maintaining a competitive advantage (Porter, 1985; Porter, 1996). In order to achieve a strategic position, management must put forth a strategy that assists in creating a position that is both unique and valuable for the organization (Porter, 1995). The organization's strategy is ever-present in the strategic investment decision process as it frames how the proposed projects will be evaluated, therefore influencing these decisions. This research can be further interrupted into the true differences between strategy and strategic position.

An organization's strategy would be the means to achieve the organization's strategic position or “end-goal.” The strategic position desired by the organization would be the organization's destination, and the strategy would then be the non-financial and/or financial considerations interrupted to direct the organization to this position. Therefore, the strategic position desired by the organization would be an external structure to the agents-in-context. The strategy formulation of an organization is the process where decisions are made on the strategic investments that aim to accomplish the goals of the company (Northcott & Alkaraan, 2013). The strategic formulation is a byproduct of the decisions made by the agents in context towards achieving this desired position and would be positioned in the conjunctionally-specific internal structures. This argument is made since management must make decisions in a group where a political structure of bidding and bargaining can occur (Pettigrew, 1973) and where different managers may have different interpretations, experiences, and preferences as to how to properly approach the desired strategic position of the organization based on their cognitive limitations (Simon, 1957; Cyert & March, 1963).

The contemporary approach to research conducted on strategic investment decisions has experienced a shift from a focus on using capital budgeting techniques (Alkaraan & Northcott, 2007; Abdel-Kader & Luther, 2008) to a more comprehensive and subjective strategic based focus (Carr & Tompkins, 1996; Alkaraan & Northcott, 2007; Carr, Kolehmainen & Mitchell, 2010). Chen (2008) states that financial-focused considerations lead to poor estimates and analysis when increased levels of uncertainty arise as calculations become less useful. This shift in the strategic investment decision-making research stems from the inherent shortcomings of the traditional financial evaluations techniques as they fail to assess how the strategic investments contribute to the corporate strategy of an organization (Alder, 2000; Butler et al., 1991, Chen, 2008), and the calls of SIDM processes to focus on more contextual approaches within the research (Haka, 1987; Slagmulder, Bruggeman & Wassenhove, 1995; Verbeeten, 2006).

While many researchers called for the incorporation of strategic and financial consideration in the SID process (Shank & Govindarajan, 1993; Alder, 2000; Slagmulder, Bruggeman & Wassenhove, 1995), it was Boedeker, Hughes, and Paulson Gjerde (2011) who called for the blended use of strategic reasons with financial considerations when making Strategic Investment decisions. In this approach, decision-makers would use financial methods to identify the best decision options and then select the option best aligned with the overall organizational strategy. A secondary approach is to add a weighting system to the analysis scores since strategic measures are not readily comparable to financial outputs. Alternatively, Carr, Kolehmainen, and Mitchell (2010) developed a matrix that shows how firms' strategies should be aligned depending on shareholder expectations and the market in which they are operating. The Carr, Kolehmainen, and Mitchell (2010) matrix details how ‘market-creators’ should be more strategically aligned since the decisions, and the organization's objectives are strategically focused. Market-creators tend to have fewer restrictions from financial benchmarks or goals. The same matrix details how “restructurers,” i.e., organizations with low shareholder expectations and contracting markets, should be more financially focused. Strategic considerations are thoroughly argued and now taken into the decision-making process, and most SID frameworks have incorporated this.

The research on strategic decision-making frameworks is vast. The process of strategic investments, first hypothesized by King in 1975, conceptualized into a model by Harris (1999), primarily outlined the steps in the decision-making process. This research was expanded on by Harris (1999). Harris‘s (1999) model goes through the steps of the decision-making process but also incorporates feedback loops. The feedback loop's purpose is to incorporate learning for the decision-makers. In Alkaraan and Northcott's (2007) paper on strategic investment decisions, they had the element of pre-control mechanisms to help guide the decision-maker and make decisions that are strategically aligned and financially aligned with the company's strategic financial missions or goals.

Building off the concept of the strategic formulation from Alkaraan and Northcott (2013), this aspect is characterized by the high use of company strategic focuses with managerial judgment and experience. Emmanuel, Harris, and Komakech (2010) find that managers often heavily favor projects that match their intuitions and expectations, confirming their internal thought processes and biases. Further, a strategy formulation perspective states that decision-makers will favor investment projects they perceive as consistent with organizational strategy, despite these projects' strategy-promoting elements being vague and difficult to incorporate into the financial analysis (Romelaer & Lambert, 2001). Capital investments that match the defined strategy of the company and fit the manager's expectations can be viewed as more important than financial considerations (Alkaraan & Northcott, 2013).

Using the term strategic as a strategy creates confusion since it only infers that the views are long-term and subject to the top management. Literature in this field of study seems to use the two terms interchangeably, and in this way, they fail to frame the information they are discussing clearly. When the literature states the, "We will still argue for strategic decision making as the dominant basis for investment strategy" (Carr et al., 2011, p. 175) or their strategy "will put a strong emphasis on strategic considerations in their strategic investment decision-making approach" (Carr et al., 2011, p. 171), the readers are left with a desire for clarity, leading to a better understanding of why Northcott and Alkaraan (2007) characterized strategic investments decisions as complex. The use of the term strategic as a strategy implies that the company is more conceptually focused on non-financial aspects, which require a large amount of subjective reasoning. We contend that the literature could be interrupted more clearly if the term "strategic" was substituted with "discernative"; signaling to the reader that the organizational strategy is formed in a context that is subjective to the top management's interruption of the organization's desired strategic position and lies outside the spectrum of financial rationale. This fits the notion that strategic decisions shape and reflect the organization's strategy (Northcott & Alkaraan, 2007). The strategic position desired determines the framing of the potential investment decision, and the decision creates the steps toward achieving this desired position. Strategy is the linchpin outcome of this important discernative process.

Since an organization's strategic and financial position goals determine what decisions and key performance indicators are evaluated in strategic decision-making, the decision-makers must understand the organization and industry in which they are operating prior to evaluating an opportunity. Understanding an organization's strategic position goals guides and influences the decision-maker's evaluation and determines which decisions are ultimately considered and voted on by the top management network in the Strategic Investment decision-making process.

### 3.3.3 Heuristics and intuition in decision-making

The subjective judgment and intuition of the decision-maker are crucial to understanding strategic investment decisions. The decisions reflect the influence of external and internal structures, which have influenced the decision. Strategic investment decisions cannot be abstracted as objective decisions based on investment appraisal.

Heuristics are simple but efficient rules decision-makers use when making strategic investment decisions. These rules or “rules of thumb” help decision-makers form judgments about strategic choices when solving strategic problems. Heuristics help decision-makers transfer some strategic assumptions from one investment opportunity to another (Alkaraan, 2016). Hence some of the outcomes of strategic investment decisions could be conceptualized with some certainty prior to making the decision, given that the decision-maker has experience of making a similar decision in the past (Harris, 2014). Alkaraan’s (2016) findings suggest that if the decision-maker has experience in successfully assessing a non-programmed strategic investment decision, the decision-maker could make these decisions more programmed by using heuristics.

Tversky and Kahneman (1974) developed the study of heuristics in decision-making. The authors studied how decisions are made when the element of uncertainty is present. The research indicated that decisions differ when the point of reference is altered, as decision-makers would reconsider options when past performance was an added element to future evaluations. The researchers demonstrated that heuristics was a problem-solving approach that employs a practical method that is not guaranteed to be optimal or rational but is sufficient for reaching an immediate, short-term goal or approximation. Heuristic methods can speed up the decision-making process when finding an optimal solution is impossible or impractical and ease the cognitive load on the decision-maker (Warren-Myers & Heywood, 2010). Emmanuel, Harris & Komakech (2010) state that intuitions, paired with experience, could be categorized as heuristics and are a means to deal with elements of uncertainty. The use of heuristics might lead to biases through selective recollection, leading to discrepancies in how different managers assess the same project and what information they find most relevant in the process (Emmanuel, Harris & Komakech, 2010).

Emmanuel, Harris & Komakech (2010) investigated how managers at hotels throughout the United Kingdom were using rules of thumb. The researchers found that top management put a premium value on managerial experience and intuition and valued it higher than the financial considerations. Another study by Carr & Tompkins (1996) evaluated the management of automobile part manufacturers in the United Kingdom and Germany and discovered a preference for industry knowledge over financial analysis.

Decision-makers who have expertise in making certain strategic investment decisions pursue opportunities that match a familiar situation - e.g., previously made strategic investment decisions. However, if the opportunity is unfamiliar, the decision-maker will gather more information and evaluate the situation further before deciding whether to pursue the opportunity or not. Managers use their rule of thumb, intuition, and knowledge to form their views about a strategic investment opportunity through exercising their heuristics (Alkaraan, 2019). However, determining whether the intuitive judgment of managers can be trusted requires examining the environment in which the decision is made (Kahneman & Klein, 2009). Understanding subjective judgments and intuition is crucial to coping with the external and internal structures influencing strategic investment decisions (Elmassri, Abdelrahman & Elrazaz, 2020).

Chen (2008) postulates that uncertainty makes financial analysis harder to rely on and that non-financial aspects are substituted when financial considerations cannot be relied upon. The financial analysis becomes less reliable because of uncertainty, and strategic decisions inherently require more managerial judgment (Emmanuel, Harris & Komakech, 2010). The rule of thumb, intuition, and knowledge of managers appears to guide successful strategic investment decisions when some aspects of the decision are uncertain.

Grant and Nilsson (2020) discuss how managers learn and gain experience in their research. Through both fast learning and slow learning/thinking, managers can learn from past experiences to apply to new experiences, using a form of eristics. These heuristics can be leveraged by managers with different experiences in new situations. Alkaraan (2020) discusses simplifying heuristics, in which experience from one project can be applied to future unknown projects. Through this learning process and guidance from previous projects, decision-makers can leverage their prior experience from past decisions and outcomes to apply to new and unknown situations. Alkaraan (2016) also notes that there is a possibility that firms with strategic alignment can make more programmable strategic investment decisions. In an uncertain world where managerial judgment is leveraged to a greater extent and strategic investments/decisions require higher levels of managerial judgment, it can be considered that firms with a strategic focus on growth have a more effortless ability to make programmable decisions when it comes to capital investments, in line with the consideration and research of initial car firms that are focused on growth or not as Concerned with financial outcomes. Organizations focused on growth and uncertain situations can rely more heavily on managerial experience and judgment.

Wu (2022), while researching to uncover the differences between Chinese and Western fund managers and their preferences for an intuitive cognitive thinking style. While operating under Leonard, Scholl, and Kowalski's (1999) idea that individuals may have a dominant or preferred cognitive thinking style, while the demand of the situation influences decision-making behavior, Wu (2022) found that Chinese fund managers relied more heavily on intuition than financial analysis due to the increased uncertainty stemming from poor information and fraudulent accounting practices. The higher the degree of uncertainty in the contextual business environment, the greater the degree of intuition the decision-maker uses (Wu, 2022).

## 4. Findings and analysis

*In the following section, the empirical data will be analyzed based on the general themes identified by the analytical strategy of this paper. These general themes are 1) The external structures, 2) The internal structures, 3) The active agency, and 4) The outcome. These themes are throughout this chapter further subdivided into different emergent themes. A section with counterfactual evidence is also provided.*

### 4.1 Analysis of the empirical data collected

The findings are based on empirical data from five different companies in various industries. Two of the participants worked for companies based in Sweden, and the rest worked for companies in the United States. The persons interviewed are directly involved in the company's strategic investment decision-making processes; however, they do not necessarily make the final decision. The researcher gathered and interpreted information about the companies in preparation for the interviews. The report has not presented this data, but it allowed the researchers to master the technical and industry-specific language and better understand the respective company. This was done to be aware of contextual situations regarding the companies and interviewees in focus.

| Interviewee | Company | Title | Industry | Country of origin | Ownership |
|---|---|---|---|---|---|
| I1 | C1 | Senior Vice President of Engineering | Technology | Sweden | Private - Investor Funded |
| I2 | C2 | Senior Manager, Acquisitions & Business Development | Industry/Technology | Sweden | Public |
| I3 | C3 | Vice President of Finance & Controller | Health Care | USA | Private - Investor funded |
| I4 | C4 | Director of Finance | Construction | USA | Public |
| I5 | C5 | Chief Financial Officer | Construction | USA | Privately owned |

**Table 1:** Overview of people interviewed

The following figure illustrates the analytical strategy that the researchers employed when analyzing the collected empirical data from the interviews conducted. The following analysis section follows the quadripartite nature of the Strong Structuration Theory. The analytical strategy was discussed in chapter 2.3 of the methodology.

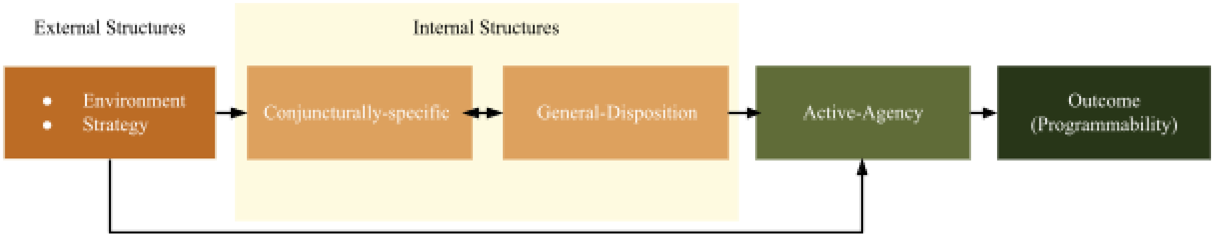


**Figure 1**: The quadripartite framework of Strategic decision-making programmability, adapted from Stones (2005, p.85)

### 4.2 External structures

This section illustrates how external structures will impact the decision-makers in the strategic investment decision-making process. What is crucial about these emergent structures is that, although autonomous to the agents, these emergent structures are crucial because they can explain some of the variances in how decision-makers can program their strategic investment decisions (Harris al., 2016; Elmassri, Harris & Carter, 2016; Elbanna & Child, 2007; Kahneman & Klein, 2009).

#### 4.2.1 The external structure of uncertainty

The future cannot be accurately anticipated in advance. By the beginning of the Covid-19 pandemic, the business environment was starting to change, and this change was rapid. The uncertainty makes it unavoidable for decision-makers to make successful and effective decisions without considering the potential risks of the emergent business environment. However, some decision-makers might be able to make successful decisions by chance, even though the environment is unpredictable (Kahneman & Klein, 2009). The uncertainty surrounding these strategic investment decisions is beyond the control of decision-makers - the uncertainty is, however, influencing these decisions. I2 described how their company (C2) adapted to the uncertainty caused by the Covid-19 pandemic as follows;

> *"Thinking in general, perhaps you're a bit more risk-averse due to the COVID life and pandemic because you saw how quickly something very unforeseen can change the reality of basically the whole world."*

We identified two general approaches companies took when adapting to the uncertainty following the beginning of the covid-19 pandemic. Either the companies fine-tuned their current investment decision-making processes by considering the emergent risks or dramatically changed how they made these decisions in response to the uncertainty.

When asked how the increased uncertainty of current world events - such as the Covid-19 pandemic and the conflict in Ukraine had changed how their companies identified strategic investment opportunities, the answers were mixed among the interviewees.

The person interviewed from Company C2 stated that how they identified strategic investment opportunities had not changed, to a large extent - but rather, the opportunities presented to them by their broker network were fewer. An explanation provided by I2 was that many founders and entrepreneurs did not want to sell simply due to the valuation of their companies being too low. Instead, I2 had more time to work proactively, searching for businesses to acquire.

I2 further elaborated on how they adapted their method of analyzing strategic investment decisions changed, following the uncertainties of current world events:

> *"When you have a lot of uncertainties in the world, you try to be focused on the potential risks of your business. So you try to analyze more, how does COVID-19 impact this business? Or how does the Ukraine crisis impact this business? So I would say you are more thorough when doing your due diligence, really thinking about the risks."*

On the contrary, both companies, C1, C3, and C4, indicated some difficulties adapting their strategic decision making process to the uncertainties of the emergent business environment in their respective strategic investment decision-making processes. I4 discussed how the current world events impacted their company:

> *"When COVID hit initially, everything was drying up for the first six months. All we were doing was trying to cancel as many deals as possible and stop and pull out of anything that we had to conserve cash. And then the market started shooting up and we are like, Okay, now we need this. So we started trying to get back into those deals. But within that six-month period, everything kind of stopped. And then now we have a gap that we are experiencing because of that decision that we made, like two years ago, to pull back. So now we are running out a lot because we did not acquire as much as we were typically doing to keep the engine running."*

I3 described how the executive team of C3, at the beginning of the Covid-19 pandemic, made strategic investment decisions as follows:

> "*The prior executive team, because of all these changes and all the uncertainty, almost stopped utilizing my financial investment analysis. /.../ And it almost came to a point where that was not a factor in the decisions made. Because they thought there was so much uncertainty that it was hard to predict what would happen financially. So they were making many decisions based on just experience and how they thought the world would change over the next year or two /.../ it did not work out for them."*

The approach of shifting evaluation processes from financial rationality to strategic consideration when financial analysis becomes difficult to generate or unreliable agrees with the concepts presented by Chen (2008). Additionally, since the pandemic created an elevated level of uncertainty in the market, the company shifted to a method that relied more on intuition and judgment, which agrees to the theories presented by Wu (2020). The methods employed by the executive team of company C3 in coping with the emergent uncertainties following the Covid-19 pandemic did not please the owners of C3. The board subsequently discarded most of the executive team in favor of a new team with an alternative approach to assessing these emergent uncertainties. This new approach to making strategic investment decisions is described by I3 as follows:

> *"/.../ identifying what our new North Star is going to be /.../ they are just completely laser-focused on the numbers. Thus, it is a complete 180. And I feel a lot better about it, not only because of it, actually people will listen to me now more, but I think that there will be a huge emphasis on the return of investment, and people will be held accountable for it."*

The owners of company C3 were not pleased with how the executive team made strategic investment decisions during the pandemic and subsequently discarded most of them in favor of a new executive team with another approach in mind.

Company C1's key expense was to expand the engineering department by hiring new personnel rapidly. However, this changed following the uncertainties since the start of the pandemic. The company went into a hiring freeze for several months - not hiring a single new employee.

> *"They are impacting a lot, but in unpredictable ways, so when the COVID hit two years ago, we were very concerned, and we went into a hiring freeze. Still, when it hit us, we were slightly concerned that this would turn into a long-term downturn in the economy. It will hurt us, but it turned out that it hurt many business areas, including some of our clients, but not particularly us. So we sort of adapted. We have what, in hindsight, turned out to be the wrong response in the beginning to the pandemic; we should have just continued and ignored it completely."*

Under uncertainty, non-financial considerations might take precedence over technical accounting measures, as the adoption and implementation of these might be challenging due to the uncertainty (Elmassri, Harris & Carter, 2016). Coping with this ambiguity and uncertainty of strategic investment decisions is a critical practical problem for decision-makers wanting to make successful investments (Alkaraan, 2020). I5 elaborated on how company 5 anticipates the risks of expanding and growing the business:

> *"We are growing. We are a company that last year, we did more volume than we've ever done before. So a lot of our growth comes from getting new projects and getting larger projects. And so with that, we have more risk, obviously, on a larger project. If you fail, it could be more detrimental to your company, so we have different cost-saving practices and risk mitigation factors that we need to consider in that growth."*

To gauge the organization's response to the Covid-19 pandemic, the researchers asked whether the interviewee believed that, in hindsight, the organization initially made the wrong decision as an unstructured question in four of the five interviews conducted. The answer was a unanimous yes. This statement from I4 nicely captures the response:

*"Yeah, I think so. But I think every single other builder was doing the same thing. So I think everybody was just worried, and then for us, we had just acquired a competitor so that kind of made it more. So we acquired a lot of their loans and a lot of the land that they had. So we've already tied up a lot of money at that point. So it was almost like, Okay, we need to pull back just because we just acquired this other builder. So we have all this other land on our books now as well. So I think for us, it was important, but yeah, I think it was one of the things that everybody in the industry was doing. And I think that's why there were such fears of a global recession."*

### 4.2.2 The influence of strategic position on investment decisions

Organizations must continually monitor, alter, and evolve new strategic positions. The strategic position of an organization can be characterized as developing and sustaining a competitive advantage (Porter, 1996; Porter, 1985). These strategic positions are important since they influence, guide, and limit the decision-makers in their course of action for the organization.

While all interviewees characterized themselves as "strategic" in their core principles, all the companies had different goals for their strategic positions, or "end-goal." These variations in targets lead to a better overall understanding of the external structures that regulate the strategic investments that the top-management board would evaluate. The strategic positions desired to set the rules around strategic investment decisions. Being financially prudent would be a failure if the mission were to grow the organization rapidly.

Although the interviewees were not specifically asked what their desired strategic position was, some individuals appeared to use strategy and strategic position interchangeably, as did many authors. Through active listening and review of the transcripts, the researchers were able to identify this information. Additionally, the researchers could cross-reference organizational strategy and growth information available from the websites and annual reports.

The following is what the interviewers said and was coded by the researchers as an end-goal or strategic position desired by the organization.

C1 targeted strategic position:

*"... we've tried to focus on US West Coast, US northeast, some countries in Europe, because these will be the places where, in the tech space, you are either, as the winner on number two, or number three, and so on is any, everything is about becoming the winner. There's also why we are not profitable because we need to grow faster than you can."*

C2 target strategic position:

*"C2 acquires well-managed, successful, and typically owner-led industrial companies whose management teams are eager to continue running and growing the business.*

*The companies manufacture or sell products in well-defined markets. Special emphasis is placed on continued opportunities for organic growth."*

C3 targeted strategic goal:

*"... we're pretty much set on, we want to do a strategic acquisition. So we don't want to go IPO. We don't want to be a private company forever. We're going to try to get acquired once we get to a certain milestone."*

C4 targeted strategic position:

*"... we commit to maintaining that customer value creation that earned us the [prestigious title], while progressing to become [most successful company in our industry] /.../ Increasing our margins, bringing value to our shareholders."*

C5 targeted strategic goal:

*"C5 works to create long-term value and growth to our owners and community by providing safe and sustainable engineering, construction and service skills to customers for whom quality, efficiency, and reliability are critical."*

These semi-defined ideas of the organizations focus on how all actions within the firm are then evaluated and implemented. The strategic position is the final destination defined by the organization's top management and board, and the decision-makers must trace back their steps to the present time to make discernative decisions to lead the company there. This concept is most clearly stated by I3, who discussed how the firm's actions were all derived from the goal of being acquired in the long term. I3 hypothesized a working idea for acquisition by a large organization when they stated:

*"So if we have a goal of being acquired by a large conglomerate like a (large conglomerate organization). Yeah. Just someone big. The decision we're making now we got to think down the line, is this going to impact an acquisition like that? /.../ And we know they're heavily interested in atopic diseases like skin conditions, especially in infants. And so if we go this pharmaceutical route, if we focus on topical conditions, or even food allergies, or something like that, we know that's something they're interested in, and that it's an area that they want to focus on as part of their long term strategic goals. So if we go down that path, we can even set it up to where it makes us an extremely attractive target for them down the road. Maybe we hit phase two, it's a success. They're like, okay, we'll take it from here."*

I4 offered additional ideas of working towards their strategic end goal of becoming the top home builder by identifying following trends in society to meet future demands in the market. I4 stated:

*"So, in Sacramento, for instance, they started noticing that there are a lot of people moving up here for retirement. And so, we, Sacramento, started identifying older*

*communities for active adults that are 55 and older. It's almost like a resort. You live in a community of houses, and they have a swimming pool, restaurant and tennis courts, and gym. And so basically, a lot smaller homes, people that are 55 and older. You know, kids have already gone away to college or whatever /.../ and that's been a huge, huge market for us. And the margins are a lot higher for those types of customers because they're in their 50s. They already have a lot of equity, they have a lot of cash. So they want what they want, and they're not afraid to spend it versus the first-time homebuyer that's really just trying to get in. So we kind of shifted towards that in Sacramento, and that's been really beneficial. The margins have increased a lot more than the traditional homebuyer."*

Additionally, I4 added how their organization would purchase its way into new markets to promote growth. Instead of going into a new and unknown market, the organization would seek out smaller organizations in that prospective region to be acquired. This strategy allowed the organization to bring in regionally experienced individuals to compete faster in this new market. I4 stated:

*"I think, since about 2015, we've been acquiring smaller competitors, to kind of get into newer markets. So Atlanta, Charlotte, those are areas that it's typically harder to go and start up a division, it's easier to just go buy one that's kind of in place, and you're kind of bringing in a lot of those people with them. And so, yeah, we were buying a lot of the smaller competitors to get into some markets. And then, when we acquired them, that was like a bigger deal."*

I5 mentioned that the primary focus of their evaluation of criteria in strategic decisions and subcontractors' hiring was financial and safety considerations. Since the company's reputation helps them promote their business, financial stability and safety were aspects that the decision-makers considered to be in strategic alignment with how the company saw itself in the future. I5 stated:

*"I have a whole list of items and their financial statements. I also evaluate whether or not they have a bank line of credit, which tells me that if cash gets tight, they have the ability to still continue working on the job. But then we also go through their safety manuals, and their procedures, and look at their OSHA reports making sure that they operate as a safe company and not expose us to risk of injury or making our projects unsafe. So that's the other kind of focus that we look at, for these prequels."*

Strategic investment position decisions appear to happen both forward and backward. Firms operate with a future end goal in mind but make decisions in the present time that they believe will lead the organization towards this desired position. This holistic view of the strategic position renders a better road map for decision-makers to use as a guide toward achieving their desired goals.

### 4.3 Internal structures

This section illustrates the agents' structures that influence the strategic investment decision-making process. These refer to the structures specific to the context in which the agent acts and the experiences and values that influence the agent, naturally and unconsciously.

#### 4.3.1 The conjunctionally specific internal structures

The Strategic investment decision-making process is shaped by and influences the company's strategy (Northcott & Alkaraan, 2007). Subsequently, the strategy as an external structure of the company will constrain the decision-maker and enable them with opportunities and capabilities (Stones, 2005, p.109). Although the strategy is autonomous to the decision-maker, it will influence the decision-maker to evaluate and pursue strategic investment opportunities.

We have encountered strategies that fall into three categories; financial focus, discernative focus, or a blended approach. An overlap that was identified amongst the companies when discussing their strategies stemmed from the organization's source of funding. Companies that were publicly traded or profitable were more likely to have a clear approach to their strategic investments process, whereas start-ups that are investor/venture-funded communicated a higher level of importance in financial outcomes in their strategies.

All companies want to be profitable and add value to shareholders or investors. Profitable companies can reinvest shareholder/investor funds and are afforded a higher degree of freedom to pursue strategic initiatives. Communication of the organizational strategy appeared to be better understood by the financially profitable companies. The organization's goals and criteria for judgment seemed to be clearly understood by the decision-makers. When I2 was asked about the processes and routines of SIDs, they stated:

> *"We don't have an overall template for making (SIDs), but every potential investment opportunity is analyzed based on criteria. So these criteria are not written down in a structured way, but everyone that works with (SIDs) knows them. So it's straightforward to see that we will know these criteria, so when we receive a prospect from a broker, we go through that and evaluate the SID based on our investment criteria."*

While I4 did not share specifically what was evaluated, they did mention that the job of corporate was to assist all divisions in implementing region-specific strategies. This allowed the corporate office to identify practices that were and were not working across the region and employ multiple growth strategies at one time. When asked how they employed their growth strategy, I4 stated:

> *"I guess it would be maybe [growth] strategies for different markets. So, we allow all the markets to run independently, just because they're the local people, they're out in the field. And they know what's going on in their communities and in their market more than we do from a corporate perspective. So, you know, we kind of help set those strategies /…/ We try to identify best practices, sort of leaders and in different things*

> *that different divisions are doing.  So I mean, we'll have somebody call up and want to know something. And a lot of times, I feel like my job is just connecting people."*

The individuals from C1 and C3 referred to how their strategies needed to be aligned with their "financial runways", and how the financial analysis was performed with every decision to determine how long operations could continue before needing to perform the next round of fundraising. They both discussed the organizational need for financial rationality. This financial aspect appears to hinder the organizations from being more proactive in pursuing strategic investments, but being an unproven company has its limitations; as I3 explains:

> *"We're venture-backed money. So we actually make a net loss every year. Pretty large one at that, and so we have a finite amount of funds that we can use. And so a lot of our investment decisions are made on, how much money do we have? And how long is it going to last? /.../ And what other strategic decisions need to be made to either extend that cash runway or in the short term, build value, so we can justify raising another 50 million 100 million or something like that, so we can use those funds to get to profitability"*

I1 reiterated some of the same considerations about the limitation to their growth strategy due to financial limitations when he noted:

> *"We needed to set a budget for a headcount in engineering; for example, that's one of the key expenses of the company. And it's also the kind of thing that sets us up for building a big moat and making our space very defensible. But at the same time, it is also a thing that burns our runway, so it is a big burden on us in engineering to grow very fast /.../ as we are not profitable."*

Newer companies are at a disadvantage since they do not have a long track record of supporting unrestricted strategic decision-making. Another consideration that must be noted is that new companies may have a great business idea, but the management team, board, and strategy must all be properly structured and developed. Not every strategic approach works for an organization. Since a strategic position is not finite, and needs constant work and maintenance, the strategies of an organization must also be adjusted and developed (Porter, 1996; Porter, 1985). The individual interviewed from Company C3 provided details on how the hiring of a new board brought about adjustments to the strategy of how SIDs are made.

> *"... and so they're (the New Board) just completely laser-focused on the numbers. And so it's a complete 180. And I feel a lot better about it /.../ that there's going to be a huge emphasis on that return, and people are going to be held accountable for it."*

The conjunctionally-specific internal structures also entail how the agent-in-focus works with the other agents in the management team. Pettigrew (1973) hypothesized that management decisions were based on a political power-struggle system where managers operated with self-interest and competing objectives. This can lead to organizational managers competing for resources within the organization. Different managers may have different interpretations, experiences, and preferences as to how to properly approach the desired strategic position of the organization based on their cognitive limitations (Simon, 1957; Cyert & March, 1963). We noted competition situations within the interviews with C1 and C3, the privately held and venture-funded organizations.

In the interview with I1, a Senior Vice President of Engineering, it was noticed in both relistening to and rereading the transcripts that the individual felt as if they were selling the importance of the engineering department to the researchers. I1 has stated:

> *"... we did the operating plan for 2022. And as part of that, we needed to set a budget for a headcount in engineering; for example, that's one of the kinds of key expenses of the company /.../ like we always say, like, it's a no brainer to invest in engineering and product that makes you win in the long term /.../ It is still all about becoming the winner."*

The notion of advocating their department's importance is captured here, suggesting that the organizational leaders participate in an interorganizational power struggle during the budgetary planning. This concept supports the notion held by Pettigrew (1973) that the management team operates in a process political manner..

I3 provided additional insight into some of the internal workings they experienced. Since I3 was one of the key figures in the financial department, and this venture-funded business noted a more financial rationale with the newly assigned board, the interviewee portrayed a sense of power and confidence when describing his role in the SIDM process. I3 described themselves as further along in the SID process when they stated:

> *"... there's a lot of scientists in our company, and a lot of them don't really have that finance background. So I help a lot with just the business decisions /.../ people will listen to me now more /.../ we're going through a very well-defined path to making strategic decisions. And that involves the departments. So like the marketing team, the Clinical Affairs team, the discovery science team, they'll come up with an idea, they'll develop it, they'll come to me, and basically talk through how to map out the plan and how they think it's going to proceed, you know, with spin, and then how it leads to eventual revenue. Then I build the models /.../ then that gets presented to the executive leaders, so the CEO, CFO"*

Both of the statements made by I1 and I3 are in line with the theories of Pettigrew (1973) and Simon (1957); both interviewees are focused on their cognitive abilities (engineering and finances, respectively), while suggesting organizational power struggles of needing to make their departments superior within the network of the organization. The hypothesis by the researchers was that this power struggle and conflict is due to resources being in limited supply; therefore, the competition for organizational approved funding is contended for.

The interview with C5 provided an example of the implementation team dynamics. I5 mentioned how the management group worked around a decision to expand into a new line of business that could substantially grow their business. I5 stated that the decision could increase the margins on each prospective job by 11 to 15 % and take on considerably larger jobs. The decisions took substantial consideration. When asked to clarify, I5 provided the following:

> *"It wasn't unanimous. There's some people that are more risk averse, but they're kind of like that with everything. Right. So I would say some of them probably aren't a big fan of us taking on 100 million dollar projects, either. Right. So that's just kind of their personality, which is not a bad thing. Right. You kind of need that Yin and Yang, and the checks and balances. So the fact that it wasn't unanimous? I don't think it's too big of a deal. It's hard to have unanimous decisions on everything. Because if you were to, I mean, my own personality would be more risk averse, right. So yeah, part of me says I'm bored, let's do it. There's a part of me that also is a little bit worried, right? Because you're taking on more risk. And so, I think maybe each person is 75% into it."*

This comment undertones the challenges of pursuing strategic investments since the agent must navigate the conjunction-specific internal structure of employing a strategy through decision-making and working with different individuals and their unique knowledge and preferences. Each individual in the team frames the decision differently, taps into their unique heuristics and experience, and then must come together to make decisions that set the company's trajectory.

While our study lacks the depth in this managerial network research, the information we uncovered from the individual agents does convey the image of the complex situation decision-makers must navigate to align the SID to the outcomes they see as correct in moving the organization towards the strategic position desired.

### 4.3.2 The heuristics of decision-making

The heuristics of decision-making refers to the general dispositional internal structures in the Strong Structuration Theory (Stones, 2005, p.88). This internal structure refers to the experiences and values that influence the decision-maker when evaluating strategic investment opportunities. The literature on these concepts was reviewed in section 3.3.3 in the literature review.

Heuristics are the simple but efficient rules decision-makers use when making strategic investment decisions. These rules can help decision-makers transfer knowledge from one investment opportunity to another (Alkaraan, 2016). The heuristics of a decision-maker could either naturally or unconsciously influence the strategic investment decision-making process.

Tversky and Kahneman (1974) studied how decisions are made when uncertainty is present. The research indicated that decisions differ when the point of reference is altered, as decision-makers would reconsider options when past performance is added to future evaluations. The researchers demonstrated that heuristics was a problem-solving approach that employs a practical method that is not guaranteed to be optimal or rational but is sufficient for reaching an immediate, short-term goal or approximation.

I2 was asked how company C2 identifies and evaluates strategic investment opportunities. I2 stated that they had some criteria when analyzing potential investment opportunities:

> *“We do not have an overall template for making acquisitions, but every potential investment opportunity is analyzed based on criteria. So these criterias are not written down in a structured way, but everyone that works with an acquisition knows them. So it's straightforward to see that we will know these criterias, so when we receive a prospect from a broker, we go through that and evaluate the business based on our investment criterias.”*

A similar question was asked to I5 about how company C5 worked with evaluating a potential subcontractor:

> *“I have a whole list of items and their financial statements. I also evaluate whether or not they have a bank line of credit, which tells me that if cash gets tight, they have the ability to continue working on the job. However, we also go through their safety manuals and procedures and look at their OSHA reports, making sure that they operate as a safe company and not expose us to risk of injury or make our projects unsafe”.*

The different criterias used at companies C2 and C5 could be classified as heuristics. I2 further elaborated on how the company uses these heuristics when transferring knowledge from one investment opportunity to the next one.

> *“I think an investment is always a learning process. And I mean, we also acquire less good companies from time to time, and then we try to learn from that and try to evaluate. Analyzing what we should have looked at before investing in that company indicates that the outcome was not so good. And then we tried to incorporate that into our next investment decision, etc. So some kind of learning as an organization”.*

Both I2 and I5 unconsciously and naturally use heuristics in the strategic investment decision-making processes, supporting Alkaraan's (2016) findings. By using certain evaluation criteria and incorporating what has been learned from making lesser good decisions in the past, I2 transfers knowledge from one investment opportunity to another. Alkaraan (2016) suggested that if the decision-maker has experience in successfully assessing a non-programmed strategic investment decision previously, the decision-maker could make future decisions more programmed by using heuristics.

A similar theme was identified at company C1. I1 elaborated on his previous experience making a similar investment decision in a previous company he had worked at and how this experience made him come up with a rule of thumb for how fast a company can grow through hirings:

> *“There are many ways where experiences, both good and bad, that I have had in the past influenced our decisions. One example could be going back to hiring, like how fast you can grow the engineering organization; I was at a quite successful company at the end of the 90s, where we had much traction and made lots of money. And they*

*also wanted to be the winner in the space. So they said we just got to hire as many as we possibly can. So we grew engineering by 400-500%, year over year for several years. /…/ later on, it did not go so well for the company because it was not built to last; then just the people were fired in great numbers, then 1000 were laid off, then another 1000, and so on. And all in all, that was a model for aggressive growth. If we do not care about the cost, let us get as many on board as possible".*

This prior experience, heuristic, influences the decisions that I1 is involved within the company where he is currently working:

*"/…/ Afterward, I thought that this percentage of you probably can only grow so much. And then I was thinking about the kind of maximum rate, /…/ And I think, in the 50% rule of thumb. /…/ But I think around 50%, and it may depend on who you are. I do not think I can figure out how to grow faster than 50%. In some cases, it may be possible".*

**4.4 Active Agency: managerial intuition**

This section illustrates that the decision-maker draws upon the external and internal structures when making strategic investment decisions.

The difference in how companies C1 and C2 work with the strategic investment decision to acquire another company is interesting to analyze. Company C2 has, since the start of the pandemic, made over 20 different acquisitions. Meanwhile, company C1 has not made any acquisitions. I1 elaborated on how company C1 is currently working with this strategic investment decision:

*"We have never merged with any other company. We have never acquired another company. We have evaluated several companies, but I think we will probably not acquire one; we do not have the skills to do it. /…/ If we had had some more skills in that area, we might have had some more opportunities. So far, we have not used that".*

When describing the similarities between different strategic investment opportunities, I2 stated:

*"/…/ all acquisitions are similar to that acquisition, in some sense that they are basically the same size. It is an industrial company, etc. But we have not made any. I mean, it's the first [this niche] company that we acquired, and it is the first company acquired in [this country]. So in some sense, yes, there have been similar investments, but then, in some sense, it was a unique investment for us".*

This statement by I2 supports the proposition made by Alkaraan (2016) and Harris (2014) that strategic investment decisions could be foreseen with some certainty if the decision-maker has knowledge and experience of making similar decisions in the past. Since all acquisitions made at company C2 fulfill the same size and industry criteria, the decision-makers experience is transferred from one investment opportunity to another. These criterias could be identified as heuristics the decision-maker uses when shaping his view on a potential investment. This further supports the theorized concepts of Alkaraan (2016). The way company C2 makes strategic investment decisions also supports the claim of Warren-Myers and Heywood (2010) that the use of heuristics can speed up the decision-making process.

However, having a decision-maker who has the experience and expertise to make a certain strategic investment decision does not necessarily mean that the heuristics would lend any help in speeding up the process or even pursuing an opportunity, as the decision-maker might still lack some knowledge and intuition in making a certain strategic investment decision.

I1 further discussed why C1 has yet to make acquisitions:

> *"/…/ we have lots of experience with mergers and acquisitions from our previous lines and other companies. And I think I've been in companies where we've made many acquisitions, unsuccessfully, and a few very successful. So, I can see it when it doesn't work. /…/ if we were thinking a little more out of the box and had this as a thing that we were thinking about, you can say, what we need is a company that does this particular thing, is there such a company out there, and then we would find there is such a company".*

> *"So maybe the window was closed for us to make a good deal. And the good companies will already pass other corporations. So I think if we might have been more active in thinking about this as a tool we could use. Whereas we are maybe a little more reactive, we hear about others having been successfully making an acquisition. Then we start doing it, but, and then it's too late, then the opportunity is not available".*

This statement by I1 empirically supports the theorization of Alkaraan (2016) that by simplifying heuristics, the intuition and knowledge of a decision-maker shape the view of a potential Strategic investment decision. I4 discussed how Company C4 capitalized on the different knowledge and experiences at different divisions across the United States.

> *"We do have certain divisions that have more experience with joint ventures than others. So whereas in Sacramento, we don't do any joint ventures because the division is not as big. They don't have any experience with joint ventures; Phoenix was the division that did it. Phoenix is our biggest division. We're building like 2000 houses there a year. So we do a lot of joint ventures there. So there, they're pretty; they're like the experts in joint ventures. So anytime any other divisions are trying to set one up, we have them tag-team with Phoenix to learn that process and get that going."*

I4 further discussed how the management team of the division in California went over to the division in Florida in order to gain experience in how their division works with a strategic investment decision unfamiliar to managers in California:

> *"So we had our management team go out there for a couple of weeks to gain that expertise and knowledge from them. And then our marketing team that's out of*

> *corporate so corporate has that knowledge to use that and leverage everything they've learned over in Florida that kind of helps over here. But yeah, we had our Sacramento team utilize a lot of that built-in knowledge that we have in our Florida divisions to help them get started here."*

Since these divisions are independent of each other, I4 discusses how C4 worked at the corporate level to identify and transfer knowledge and experiences from one division to another.

> *"We try to identify best practices, sort of leaders and in different things that different divisions are doing. /.../ there's so much knowledge out there, but it's so isolated, just because of the geographic way that real estate is set up. And we're not connected. We're not like a tech company where everyone's calling in, and having meetings and doing Zoom talks or whatever. So the divisions just really operate independently almost like franchises. And so our job at corporate is to kind of try to gain that knowledge from the different markets and help them kind of kind of get a better understanding of what they can do and how they can help their business grow in their market."*

The notion of not reinventing the wheel by transferring knowledge and ideas between different managers and parts of the company was also mentioned by I5:

> *"We have a General Superintendent that oversees all projects, we have project executives that oversee many projects, so they are involved. They can kind of share ideas across the board. So that way, they are not, we are not relying on a project manager to necessarily come up with these ideas on their own and kind of invent the wheel over and over again. We kind of go through it and share ideas as a company so that way, whatever works on one project, we can use that same idea and do it on the next project, especially if it works for you."*

C4 and C5 are both committed to transferring knowledge of strategic investment decisions between different parts of their respective companies. This suggests that it is desirable to transfer knowledge and experience learned from previous projects. This further supports the proposition of Alkaraan's (2016) proposition. A strategic investment might be non-programmed in one part of the company or for some managers. However, the same decision might already be programmed in another division of the same company since these managers previously have experience making similar decisions. By transferring the knowledge, the organization can lend experience to the managers in separate divisions/branches on the intricacies of these unique projects. In doing so, managers, having never made such decisions before, would be able to apply a type of "vicarious intuition" from leveraging transferred knowledge

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## 4.5 Outcome: Programmability of Strategic investment decisions

This section illustrates how the outcomes of the active agency influence the ability to program strategic investment decisions.

The external structure of uncertainty generated insights into how the decision-maker and the company couped with the emergent uncertainties of the contemporary global business environment, such as the Covid-19 pandemic and the conflict in Ukraine. The external structure of strategy resulted in a deeper understanding of how the strategy of strategic investment decisions would influence the strategic investment decision opportunities being pursued.

The internal structures illustrated how the decision-maker would cope with the external structures by using their heuristics and intuition. Since these internal structures help the decision-maker gauge the contextual factors souring a strategic investment decision. If the manager has the ability to conceptualize the outcome of strategic investment decisions, companies could leverage these internal structures, gaining a competitive advantage. I2 describes the desire to acquire companies with the right people as follows:

> *"And when you have this as a business model, you must have the right people in the company to acquire, because you need to trust them, they need to be able to make good decisions on their own, that they can't lean on us. So in that aspect, it becomes very important when we acquire companies to make sure that they are good people who run these companies and fit well into the industry and culture. So we are very people-focused in our investment decisions".*

Company C2 has the objective to acquire a company with people who can make good decisions. However, this statement can be further nuanced since, according to (Kahneman & Klein, 2009), decision-makers might still be able to make successful judgments and decisions by chance. We interpret this statement to propose that company C2 would like to acquire a company with people who have knowledge and experience in making decisions in the industry and context in which the acquired company operates. As Alkaraan (2016) suggests, the intuitive professional judgment of a manager is a valuable asset.

This notion about the value of the intuitive professional judgment of managers is further supported by how the owners of company C3 choose to discard most of their executive team based on them using their intuitive judgment in favor of financial analysis.

> "*The prior executive team, because of all these changes and all the uncertainty, almost stopped utilizing my financial investment analysis. /.../ And it almost came to a point where that was not a factor in the decisions made. Because they thought there was so much uncertainty that it was hard to predict what would happen financially. So they were making many decisions based on just experience and how they thought the world would change over the next year or two /.../ it did not work out for them."*

In this situation, the owners of company C3 did not value the intuition of the executive team. This suggests that even though you have managers with experience in making strategic investment decisions, one should not conclude that this results in all decisions made by these managers being inherently successful, or in line with the company's strategy. I5 also discussed hiring the right people. At company C5, having the right people is a way of lowering the risk of pursuing a new strategic investment opportunity:

> *“We are a general contractor, so we subcontract all the trade work for the most part. That being said, one decision we made recently is that we are taking on and starting to self-perform some framing. /…/ we decided to hire a superintendent Foreman from someone who did some framing for us, /…/ So we are kind of decided to go forward and take on this new scope of work and take on this trade. The margins are much higher for a subcontractor than for a general contractor, where we typically take a 4-5% margin. a subcontractor, especially a framer, could do 15 to 20%. /…/ Looking at the risk-reward of taking on this work, something we have not done in the past, there are more risks. But in the end, we decided; We have the right people, which we think makes it worth taking on the risk to get the reward”.*

### 4.6 Counterfactual Evidence

When analyzing or collecting material, the researchers found evidence for counterfactual propositions contradicting those proposed in this paper. The majority of our interviewees acknowledged knowledge, intuition, and experience as essential parts of their decision-making process. However, this was not a shared consensus amongst our interviewees. The majority of the recipients interviewed believed that these factors were critical components in their strategic decision-making process, supporting the proposition of this paper concerning the capabilities to program strategic investment decisions.

# 5. Discussion

*Within this chapter, the findings of Chapter 4 are discussed and compared with previous research conducted on strategic investment decisions (Chapter 3). The discussion aims to enhance the understanding of strategic investment decision-making programmability as suggested by the purpose of this paper. The researchers also discuss the extent to which the research question has been addressed.*

## 5.1 Discussion preface

Given the purpose of this paper, we took a holistic approach to the strategic investment decision-making process. When answering our research question, aspects of the process that are autonomous to the decision-maker and aspects that the decision-maker uses naturally or unconsciously when making a strategic investment decision were analyzed and considered. This holistic approach has not previously been applied to research on the programmability of strategic investment decisions. The research question was as follows:

*How are companies that are particularly focused on strategically growing their business able to program parts of the strategic investment decision-making process while others may not be able to?*

The ability of a company to program its strategic investment decision-making process relies on the decision-makers experience, knowledge, and intuition. When the decision-maker's experience is transferred from one investment opportunity to another, the decision becomes programmed, a proposition supported by previous research (Alkaraan, 2016; Alkaraan, 2020). However, determining whether the intuitive judgment of managers can be trusted requires an examination of the environment in which the decision is made (Kahneman and Klein, 2009).

### 5.1.1 Uncertainties influence on decisions

Some autonomous factors influence decision-makers and, therefore, companies' ability to program their strategic investment decisions. One of them is the uncertainties of current world events. A common theme in the findings of this paper was the influence of the Covid-19 pandemic. Companies both made decisions to respond to the pandemic and despite the pandemic. However, their intuition, experience, and knowledge were scarce since they had no previous experience making strategic decisions during a pandemic. Subsequently, many of the initial decisions made in response to the pandemic were, in hindsight, the opposite of what the companies wanted to achieve. These decisions became a learning process as decision-makers' intuition and conceptualization of the implications of the covid-19 pandemic were deficient.

Companies responded to the pandemic by reworking their decision-making processes. One prominent example in the findings of this study was how company C2 adapted its processes. In response to the increased uncertainty and risks of the Covid-19 pandemic, they fine-tuned their due diligence process for companies to acquire and anticipate the risks to a larger extent. Some of the outcomes of the decisions made at company C2 were readily conceptualized prior to the pandemic but, following the uncertainties, became harder to conceptualize due to the uncertainty. Some aspects were new that could not have been anticipated before the pandemic. By coping with these uncertainties, company C2 can program parts of the outcome of their strategic investment decisions, although some aspects may still stay in the realm of uncertainty. Both companies, C1, C3, and C4, took a different approach. C3 decided to change its executive team to emphasize intuition in favor of technical accounting measures despite the disliking of the board of directors. Both companies, C1 and C4, froze their operations in some areas to conserve cash, a blind decision since the pandemic's outcome was impossible for these managers to conceptualize, given that the response in hindsight, as acknowledged by the interviewees, was too much.

### 5.1.2 Strategy influence on decisions

Another autonomous factor influencing the programmability of strategic investment decisions is a company's strategy. The desired strategic position of a company predicates how decision-makers within the organization frame and assess the capital investment projects that are considered. Strategic investment decisions commit organizational resources toward this desired strategic position. A competitive advantage can be gained if the company’s strategy assists in creating a position for the company that achieves the desired strategic position (Porter, 1995).

Organizations with a clear mission of growing the business have a strategy to facilitate this objective and evaluate strategic investment opportunities to promote this growth. One prevailing finding in the study was how the strategies of companies C2, C4, and C5 helped guide their decision-making processes. These companies emphasized how growing the business was embedded into their strategy and the investment opportunities they pursued to commit the company to that strategic objective. All these companies considered blending financial analysis and strategic consideration, which supports the concepts proposed by Boedeker, Hughes, and Paulson Gjerde (2011). Company C2 acquires companies that meet specified financial criteria, with strategic and risk considerations as their decentralized strategy's deciding element. C4 acquired smaller companies in regions where they were not operating to gain footing in a particular geographic location, considering financial and strategic inputs. C5 wanted to grow the business in terms of the size of the projects and the services that their organization could offer. To achieve this strategy, the company hired new individuals that would assist the company to start pursuing opportunities in a new market segment after carefully considering financial, strategic, and risk reviews. How a company's strategy shapes- and is being influenced by strategic investment decisions agrees with the literature from Northcott and Alkaraan (2007). Since the organizations held a clear idea of where they envisioned the company in the future, it afforded the decision-makers a more straightforward method of conceptualizing the process; managers could more readily envision strategic investment decisions since the target objective of the organization was defined.

An organization's strategy influences the type of investment opportunities that are considered. The investment decisions that are considered determine what level of intuition and judgment will be involved. C1 and C3 defined their strategies that did not formally mention growth and more suggested improvement across current operations. These companies are focused on refining their product and exploring ways it could be useful to the market, contending to having a lower market orientation rating. Additionally, these relatively newer companies operate off venture-funded capital and suffer annual losses contend they could also be characterized as having low shareholder expectations. These two companies also downplayed the importance of experience and intuition in the strategic investment decision process and expressed a high level of importance of financial rationality in their decision-making process. This rational financial focus would support the 'restructurers/refocusers' segments presented in the Carr, Kolehmainen, and Mitchell (2010) matrix, where their market orientation and shareholder expectations would place them.

In particular, C3 stated that the target goal is to be acquired and focus on financial and operational considerations to become attractive to potential acquirers. This strategy subsequently influences all strategic investment decisions made. On the contrary, C2, C4, and C5 all had a strategic growth focus and expressed that intuition, knowledge, and experience play a significant role in their company's decision-making.

### 5.2 Identified methods of programming decisions

The findings of this study identify various techniques that companies can employ to assist in conceptualizing aspects of strategic investment decision outcomes, leading to the ability to program or semi-program parts of these decisions. The commonality that these techniques possess is their reliance on experience, intuition, and knowledge, which the decision-maker leveraged in simplified heuristics, as theorized by Alkaraan (2016). The techniques identified in this study are explicitly employed by the organizations that are strategically focused on growing their business and have been used by our interviewed companies to program aspects of their decision-making process. The techniques identified in the findings revolve around information and knowledge sharing, applying different rules, and hiring professionals who have experience in making certain strategic investment decisions. The researchers have labeled these methods as 1) *Criteria,* 2) *Having the right people,* and 3) *Internal information and knowledge sharing.*

#### 5.2.1 Criteria

Companies C2 and C5 used *Criteria* to program their strategic investment decisions. Alkaraan (2016) suggested that heuristics are efficient rules decision-makers use to naturally or unconsciously form judgments about strategic investment opportunities - criteria would constitute a sort of heuristics used in strategic investment decision-making. I2 stated that learning as an organization was important because experiences of making certain strategic investment decisions could be incorporated into the next decision. By using criteria, decision-makers would be able to draw upon the experiences and heuristics to program future decisions. These criteria could concern the firm's size and that they operate in a specific industry. Company C2 did not perform a financial analysis unless these criteria were met.

Criteria can be used as guidelines as decision-makers evaluate an opportunity, similar to previous strategic decisions, and help the decision-makers program the decision-making process and better conceptualize the possible outcomes. By doing so, the decision-makers can make new opportunities feel conceptually familiar. When the decisions made within an organization follow a formulated template, it reduces the overall uncertainty of the outcome of decisions. Additionally, the concept of having different criteria when making strategic investment decisions, being able to be conceptualized due to the decision-maker having experience making similar decisions, agrees with the propositions put forth by Alkaraan (2016) and Harris (2014). I1 mentioned how his experience and knowledge led to formulating a rule of thumb of only growing the engineering department by 50% per year. However, I1 also acknowledged that it might be possible to grow faster than this amount, but I1 could not figure out how.

### 5.2.2 Having the right people

Companies C2, C4, and C5 emphasized the need to have *the right people*. Company C2 desired to acquire companies with people who could skillfully and knowledgeably run the company without relying on C2. C2 also employed a specialized investment team and brokers to help identify these companies and people. C5 discussed how hiring a superintendent foreman helped the company pursue a new strategic opportunity. C4 employs experienced land acquisition directors and managers in the regions where they operate or acquire small firms within the market where they wish to expand operations to gain regional-specific knowledge. These methods help the organizations increase their internal knowledge and experience pools. Hiring experienced managers, employing individuals with region or industry-specific knowledge, and using external-to-the-organization professionals and consultants allows these organizations to connect professionals within their networks and leverage their experience, knowledge, and intuitions. The method of having the right people involved in a company's strategic investment decision-making process is supported by the views of previous research (Alkaraan, 2016; Emmanuel, Harris & Komakech; 2010; Carr & Tompkins, 1996). On the contrary, I1 mentioned that their company lacked the necessary skills to identify and pursue certain strategic investment opportunities - i.e., the company lacked the necessary skills to acquire another company. This suggests that for the company to pursue this type of strategic investment, they first need to obtain the necessary skills or hire managers with the desired skills to enhance their company's strategic investment decision-making process.

### 5.2.3 Internal information and knowledge sharing

Companies C4 and C5 explicitly used the method of *internal information and knowledge sharing* to program their strategic investment decisions. Two of the companies interviewed discussed how their company facilitated the sharing of knowledge and experience within their companies. The corporate offices of company C4 would assist when faced with a new and unique strategic investment opportunity where the management team within the division lacked experience or knowledge of that particular opportunity. The corporate office acted as a conduit of experience, assisting the division that would make the investment decision but lacked the experience and expertise and putting them in contact with another division's management team making similar or identical decisions. The management team with the experience would explain the concepts, key indicators, and methods that formed best practices within their region. Equipped with this insight, the management team could then use this 'vicarious experience' to evaluate the projects within the context of their region where they had expertise and insights. Through learning and interacting with other managers and decision-makers familiar with a particular type of project or decision, they can transfer aspects of these insights to become parts of their knowledge, intuitions, and judgments. Since these decisions were regionally specific, this transferred knowledge could then be used to understand better the decision to be made by the expert in the region where the decision was being made. Company C5 tries to identify and share good ideas that could be used for other projects in the company, thus not relying on different managers to come up with new ideas and reinvent the wheel. This sharing of knowledge and information allows the decision-makers to program parts of the decision since this method also helps reduce the elements of uncertainty and complexity as some aspects of a previous decision can be transferred to the next one. This notion of knowledge transfer to build upon a form of simplified heuristics agrees with the study set forth by Alkaraan (2016).

### 5.3 Summation

Although these ideas and concepts are not unfamiliar in business management research, they have not previously been identified in research conducted on the programmability of strategic investment decision-making processes. The three methods guide companies wanting to better conceptualize the outcomes of their strategic investment decisions as some aspects of the decision can be foreseen and conceptualized in advance. The three companies (C2, C4 & C5) that focus on strategically growing their businesses also used these three methods. The two other companies (C1 & C3) that did not have the strategy of growing their business were also the companies that did not use these methods. Subsequently, these companies had flaws in their processes in terms of programming their decisions compared to the companies wanting to achieve strategic growth. These methods can also help companies to reoptimize their processes in response to the emergent uncertainties of the global business environment. How companies in the sample have used these methods suggests that they can help companies manage the risk of uncertainties and help companies better conceptualize the outcome of their strategic investment decisions.

## 6. Conclusion

*In This chapter, we demonstrate how the contributions our paper adds to the field of strategic investment decisions. The propositions and concepts discussed in the introduction of this paper will be empathized. Moreover, the limitations of findings and suggestions for future research are proposed.*

### 6.1 Contributions

The proposition made in the introduction of this paper was that companies are exposed to new emergent uncertainties and risks marked by the beginning of the Covid-19 pandemic. The current global uncertainties are making the outcomes of strategic investment decisions harder to conceptualize. Companies that desire to make successful strategic investment decisions in the contemporary business environment need to reevaluate their decision-making processes and assumptions to pursue future investment opportunities successfully. The views of previous research support this proposition (Alkaraan, 2020; Elmassri, Abdelrahman & Elrazaz, 2020; Harris et al., 2016; Elmassri, Harris & Carter, 2016). Companies could gain competitive advantages if they could better conceptualize and program the outcome of strategic investment decisions prior to making them.

The study's findings suggest that companies have changed their strategic investment decision-making processes in response to the emergent business environment. The most apparent reason is to manage and reduce the exposure to the risks following the Covid-19 pandemic and supply chain disruptions. One way of managing these risks is to enhance the conceptualization of the outcomes. Companies employ different programming methods for their strategic investment decision-making process, resulting in a better conceptualization of the potential outcomes. Three different methods have been identified and discussed for how companies are programming their strategic investment decisions: 1) *Criteria,* 2) *Having the right people,* and 3) *Internal information and knowledge sharing.*

These methods are not unfamiliar in business management research; however, they have not previously been explicitly identified or discussed as methods for programming strategic investment decisions. By programming parts of the process, companies can conceptualize and foresee the outcome of strategic investment decisions, manage the risk of uncertainty, and help companies develop a strategy to gain a competitive advantage.

The findings add to a generalization of the theorized concepts of programmability proposed by Alkaraan (2016). This study's findings support the proposition that knowledge, intuition, and experience of making similar strategic investment decisions in the past would help in programming future strategic investment decisions. Companies and decision-makers naturally or unconsciously program aspects of their strategic investment decision-making processes by factoring in elements learned from previously made decisions. The three methods of programmability identified in this paper contribute to the existing theoretical knowledge of programmability and a more nuanced understanding of the seven characteristics proposed by

Northcott and Alkaraan (2007). By programming their processes, companies could better manage some of the risks of the emergent global business environment. This paper's findings further support the proposition of Alkaraan (2016) and Harris (2014) that only some outcomes could be foreseen and conceptualized since some aspects are more challenging to conceptualize than others. Some of the aspects would thus stay in the realm of uncertainty. The ability to program decisions does not inherently result in successful decisions. The decision maker's intuition, knowledge, or experience of making similar decisions might influence the decision-making process to the extent that is not desirable given a company's strategy.

As suggested by the literature, strategic investment decisions are influenced by many different contingencies and structures that shape strategic investment decisions (Elmassri, Abdelrahman & Elrazaz, 2020). This paper contributes toward a holistic theorization of how different external and internal structures influence the outcomes of strategic investment decisions. By utilizing the quadripartite nature of the Strong Structuration Theory, the researchers respond to the call in previous research for a holistic approach to researching the strategic investment decision-making process (Elmassri, Abdelrahman & Elrazaz, 2020; Harris et al., 2016; Elmassri, Harris & Carter, 2016; Elbanna & Child, 2007; Haka, 2007). In this paper, the uncertainties in the company's environment and the company’s strategic position were identified as potential factors influencing a company’s ability to program strategic investment decisions. Since the Strong Structuration Theory was used, the findings of this paper can be comparable with the findings of other studies using the same framework. Subsequently, the findings of this study could be generalized across different social aspects and contexts.

Research conducted on strategic investment decision-making processes is inherently practical. A deeper understanding of the characteristics of programmability and how the context influences strategic investment decisions can help companies gauge the weakness and strengths of their current strategic investment processes following the increased uncertainties of the current business environment. This paper suggests that companies can employ different methods to program their strategic investment decisions and gain a competitive advantage when pursuing strategic investment opportunities successfully. The programmability of strategic investment decisions would increase the chances of making successful decisions, as some aspects are conceptualized prior to making the decisions.

### 6.2 Research limitations and future research

The limitations of the chosen research approach were discussed in Chapter 2.5 of the methodology. However, this paper faces additional limitations regarding the quality of empirical findings. Given the time limitations, the researchers only studied some of the potential aspects that influence strategic investment decisions and a company's ability to program these decisions. The holistic approach to researching strategic investment decisions by championing the Strong Structuration Theory added to an enriched analysis of these influences. However, the researchers also acknowledge that other factors might influence companies' ability to program decisions. Considering other potential factors would further enrich the analysis of strategic investment decisions.

By interviewing five different companies and individuals, the findings could be generalized across the different social settings; however, given the holistic research approach of researching strategic investment decisions, interviewing more individuals at each company. The programmability of strategic investment decisions progresses over a more extended period. Could further enrich the analysis. One single individual rarely makes a strategic investment decision alone; the strategic investment decision-making process involves multiple individuals at different stages, influencing these decisions. These individuals have different expertise, experience, and knowledge of a particular investment opportunity. The characteristics of the different decision-makers will influence the process as their different opinions and intuitive judgments influence the outcome of the decision. Interviewing more individuals involved with these decisions would further contribute to a holistic understanding of how companies are programming strategic investment decisions as more potential methods or variations of programming decisions could be uncovered.

The researchers could only capture snapshots of the strategic investment decision-making process as iterated by the person interviewed. Without the time restriction, a future research opportunity is to conduct a longitudinal case study involving several different managers in different companies over a relatively extended period. A longitudinal case study could further enrich the analysis of how managers use their intuitive judgment, experience, and knowledge to program strategic investment decisions. Conducting a longitudinal case study would increase the external validity criteria, leading to more generalizable results. Future researchers could ask more penetrative questions in real-time about how companies are impacted by and respond to emergent uncertainties and changes in the business environment as they unfold. Deeper insights into how managers adapt to these situations would add to the theoretical saturation as more data is collected in a longitudinal case study.

This paper contributed to a deeper understanding of how the experience, knowledge, and intuition of making certain strategic investment decisions are transferred between two different strategic investment opportunities through a better conceptualization of Northcott and Alkaraan's (2007) strategic plan investment decisions characteristic of non-programmability. The findings can help practitioners gauge the strengths and weaknesses of their strategic investment decision-making process, better evaluate how different factors influence decision-making processes, and propose three different methods that companies can use to better program and conceptualize strategic investment opportunities.

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## Appendices

### Appendix 1: Information sheet sent when contacting potential interviewees

The research we are conducting is in connection with the Master's program in Accounting and Finance at Lund University, specializing in Accounting and Management Control. We are investigating how executives in companies considering strategic investments options cope with uncertainty, and leverage managerial experience and intuition.

The world and the environment that your company operates in today are rapidly changing. The global business climate has become more uncertain and less predictable over the past few years. Marked by the beginning of the Covid-19 pandemic and now with the war in Ukraine, we have witnessed supply chain disruptions, plans for expansions and acquisitions being postponed, rising prices of commodities, and raw material and energy shortages. All these situations further complicate the already complex nature of strategic investments, and yet your company still needs to make such investments to expand your operations.

Strategic investments involve significant long-term financial commitments, have high levels of uncertainty, and take time to develop. Since these decisions are non-programmed and unusual; there are no obvious examples to follow. However, if these decisions were to become more programmed, it would reduce the level of uncertainty and lead to decision makers' increased ability to make successful decisions. Unusual and unique choices may become more programmed for some companies as their experience and knowledge from previous investments are capitalized. Given this contextual background, we invite you to participate in our case study as a prominent executive within your company.

We aim to interview someone involved in your organization's strategic investment decision-making process. These decisions could either be previous or ongoing decisions of expanding your company—for instance, acquisitions or investments in new machines or facilities. We anticipate that the interview would take no more than 35 to 45 minutes, with questions about your strategic investment decision-making process and how your company responds to the uncertainty surrounding these decisions.

Case studies involve both people of interest and confidential information in one way or another. Information provided by the person interviewed will be handled with care. This is done to ensure the privacy and integrity of the interviewee and that of the company. The interviewee and the companies used in our case study will be anonymous. We will, however, giving your permission, suggest how we should refer to the interviewee and the company throughout our paper; this is only to separate from what different interview subjects say throughout the piece. Any documents, recordings, and other confidential information will only be accessed by the two of us researchers. We will destroy all material provided by the interviewee upon completing this paper. All quotations will be anonymous unless permission is granted.

**Appendix 2: The predetermined interview questions**

1. Can you describe your role at the company and your involvement in the strategic investment decision-making process?
2. Can you describe a current or recent investment decision that you have been involved in within your company?
3. How has the increased uncertainty of current world events - such as the Covid-19 pandemic and conflict in Ukraine - changed how your organization identifies strategic investment opportunities?
4. How do any changes in world events affect your methods of strategic investments analysis?
5. Can you describe how the strategy of your company affects your strategic investment decisions?
6. Can you describe your company's routines to identify/evaluate strategic investment decision opportunities?
7. To what degree do you feel that your intuition plays a role in the evaluation process?
8. As a decision-maker evaluating a unique opportunity, can you describe the process before deciding on a strategic investment decision?
9. Can you describe any differences and/or similarities of your current investment decisions with those that you may have had in the past with previous decisions?