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Corporate Decision Making
Exploratory Research of Individual versus Group Decision Making in an Icelandic High-Tech Manufacturing Organization

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Final thesis for the MS-degree in Business Administration
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Foreword

This research project is a final project towards a master’s degree at the faculty of Business, University of Iceland. This is a 30 ETCS credit final thesis. The objective of the thesis is to examine decision-making models and processes in both individual and group decision making at an Icelandic high-tech manufacturing organization.

The advisor for this research was Eyþór Ívar Jónsson, Adjunct Professor at the University of Iceland. I would like to thank him for a successful, enjoyable and good collaboration. This project would not have been possible without his help.

There are a lot of individuals I should thank for their assistance on this occasion. I would like to thank all my interviewees for taking the time to participate in the study and providing valuable information on the subject. I especially want to thank the Human Resource manager at the organization for his contribution in providing me participants for the study.

My parents, Darija Kospenda and Milan Kospenda receive the best thanks for their encouragement and support throughout the years. My son, Nathan Gabriël Kospenda receives thanks for his patience and consideration. My brother and his girlfriend, Aleksandar Kospenda and Margrét Lena Kristensen receive thanks for their helpful comments and their contribution to my thesis.

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Abstract

The main objective of the research project is to highlight the difference between individual decision making and group decision making. Decision making is an important factor in the role of managers and is considered to be the toughest and riskiest task of any manager. They must perform both individual and group decision-making processes while being unconsciously affected by their habits, which they have developed with experience and intuition. Therefore, the aim of this research is to evaluate the competence needed in order to perform individual and group decision making.

The research questions are as follows:

1. Are models of individual decision making related in any way to models in group decision making? And is there a model that relates to them both?
2. Is there a difference in how managers perform an individual decision-making process versus a group decision-making process?
3. Do decision-makers tend to follow procedures and processes in decision making or do they rely on experience and intuition? Does it differ in individual decision making versus group decision making?
4. Do corporate decision-makers fall into hidden physiological traps in their decision making?

The research is based on a qualitative method to answer the four research questions that were presented. Eight interviews were conducted with managers at an Icelandic high-tech manufacturing organization. The purpose of the research was to examine the main differences between individual and group decision making with the intent to support the research with references to foreign studies. The results indicated that models in individual decision making are related to group decision making, as decision-makers tend to have processes developed by the organization to follow as guidelines, whether they are deciding individually or in groups. It also indicated that decision-makers do unconsciously fall into hidden psychological traps in their decision making. However, the guidelines they follow help them avoid falling into these hidden traps.

Following on from the research, the researcher suggests that the managers at the organization attend decision-making courses and behavioral courses, which would support them in their decision making and increase their awareness of hidden psychological traps. This would lead to greater success in their corporate decision making.
Í þessu verkefni var leitast við að varpa ljósi á eðlismun einstaklingsbundinna ákvarðana og ákvarðana sem teknar eru af hópi fólks hjá hátekniulegu framleiðslufyrirtækli á Íslandi. Ákvarðanataka er mikilvægur hluti í starfi stjórnenda og jafnframt áhættusamasta hlutverk þeirra. Stjórnendur þurfa að taka þátt í ákvarðanatökuforlum ásamt því að verða ómeðvitað fyrir áhrifum af venjum og athöfnum sem þeir hafa próað með sér í gegnum reynslu og innsæi. Þær af leiðandi er markmið þessarar rannsóknar að bera kennsl á og meta hæfni sem þarf til að framkvæma ákvörðunartöku fyrir einstaklinga og hópa.

Rannsóknarþvettingar eru eftirfarandi:

2. Er munur á hvernig stjórnendur framkvæma einstaklings ákvarðanir annars vegar og hópákvörðanir hins vegar?
3. Hafa ákvörðunartökuðilladilar tilhneiguini til að fylgja verklægi og ferlum við ákvarðanatökum eða treysta þeir á eigin reynslu og innsæi við ákvörðunartökum? Er það misjafn eftir því hvort um sé að ræða ákvörðunum sem tekinn af einstaklinginum eða hópi fólks?
4. Verða ákvarðanatökendur fyrirtækja fyrir áhrifum af földum sálfræðilegua gildrum við ákvörðunatökum sína?

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1 Introduction

Decision making is a major factor in the role of executives in today’s business environment. It may be the toughest and riskiest task of any manager. Making a bad decision can truly have a negative impact on the organization and on managers' careers. Bad decision-making processes can be traced back to unconscious habits and flaws in the way decision-makers think while deciding. Organizations tend to implement decision-making procedures and processes for their managers to follow in order to have a successful decision-making process and to avoid falling into hidden traps in their decision making. Organizations also consider how their managers are able to control group decisions and their ability to get the most out of their participants. The researcher is of the opinion that there is an urgent need to clarify the competence needed in corporate decision making.

This thesis will endeavor to explore the models used in individual decision making and group decision making and discuss the main differences between them. It is evident that decision making is varied depending on decisions and it will be interesting to see if managers feel as there is a difference in how they perform individual decision-making processes versus group decision-making processes. It will also be interesting to see if managers feel as they have fallen into hidden psychological traps in their decision making.

1.1 Thesis statement

The main objective of this project is to highlight the main difference between individual and group decision making, especially regarding theoretical models that are used to support the ideology of them. In order to better understand the topic, the following research questions are presented and will be answered:

1. Are models of individual decision making related in any way to models in group decision making? And is there a model that relates to them both?
2. Is there a difference in how managers perform an individual decision-making process versus a group decision-making process?
3. Do decision-makers tend to follow procedures and processes in decision making or do they rely on experience and intuition? Does it differ in individual decision making versus group decision making?
4. Do corporate decision-makers fall into hidden physiological traps in their decision making?

In order to collect data for the project, a study was conducted on whether decision-makers perform an individual decision-making process differently than a group decision-making process and if decision-makers follow procedures and processes implemented by the organization. Moreover, it will be examined whether decision-makers follow any models of decision making and if they have ever fallen into hidden psychological traps in their decision-making.

1.2 Methodology

This research uses qualitative research in the form of interviews. The qualitative methodology assumes that reality is socially justified and therefore, it is necessary to express people’s views and perspectives through dialogue. The aim is not to generalize but rather to understand the context and attitudes of certain groups or individuals, and it is done to make sure that their opinions are not influenced in advance. With qualitative research methods, we go onto the research site with no hypothesis in mind but rather to gather data on which we base our theory (Merriam & Tisdell, 2016).

Interviews were conducted with eight individuals who share the common task of being managers, with extensive experience in management and decision making. In order to maintain confidentiality with the interviewees, neither their names nor the organizations are mentioned. Semi-structured interviews were used for data collection in this study, which is characterized by predetermined questions from the researcher. However, the researcher gives the interviewees the opportunity to express themselves and is alert to any digressions which may benefit the research objectives.

1.3 Thesis overview

The thesis is divided into six chapters related to the research topic. Chapter one contains an introduction, thesis statement, methodology, and structure of the study. The second chapter covers the main part of the research, such as the definition of corporate decision making, decision-making models used in both individual decision making and group decision making, and the hidden psychological traps decision-makers tend to fall into in decision making. The third chapter analyses the objectives of the study, the methodology used in the selection of the research, and the preparation and implementation of the study. Data collection and processing, selection of participants, and validation and reliability
will also be discussed. Chapter four reports on the results of the three themes, effective communication, decision-making guidelines, and awareness of hidden psychological traps. The fifth chapter contains a discussion where the research questions are answered in relation to the research themes. The sixth chapter contains the conclusion, which discusses the results of the research in connection with the research questions that were initially presented and ideas for further research.
2 Corporate decision making

At some point in time, everyone makes a decision, whether it is in business, politics, or an individual conducting their personal problems. There are a few different ways to approach decision making. Under various conditions can one decision seem to be the best alternative with the information given at that point of time. However, new information can emerge, and the criteria chosen for the decision may no longer be relevant (Óskarsson, 2009).

Corporate decision making can be defined as a process of identifying and solving a problem (Buchanan & Huczynski 2004). It is often viewed as a pattern of actions within the organization. The most relevant way of decision making depends on what information is available and how important that decision is to the organization. Managers tend to approach decision making as a day to day task because sometimes they do not have the capability to cover the whole process at once. As decision making solves one problem, another one can easily emerge (Hoy & Miskel, 2012). Therefore, it is essential for an organization to implement an organized approach for decision-making processes that managers and employees must follow if they wish to eliminate errors in decision making.

2.1 Decision-making process

Decision making within an organization is often defined as a process of choosing between different options. The process is divided into two parts, the analytical and the problem-solving processes. The analytical process strives to identify a problem by gathering information within the infrastructure and environment of the organization and thus attempting to find the route of the problem. The problem-solving process involves evaluating different solutions to solve a problem and selecting the best alternative. Corporate decisions can vary in complexity and the process can either be programmed or nonprogrammed (Daft, 2012).

Programmed decisions occur where the subject is well defined, repeated, and there are known processes to solve the problem. There are written instructions that include what to do and how to do it, defined processes, clear objectives, decision-making policies, and directives on how to obtain certain information. Examples of these kinds of decisions are job recruitment, change of office supplies, and other day to day tasks. Organizations usually base programmed decisions on previous experiences that have succeeded in the
past (Daft, 2012; Buchanan & Huczynski, 2004). Non-programmed decisions are unexpected and undefined problems such as strategic planning, merger and acquisition, and downsizing. It is usually hard to detect these problems beforehand as the organization has not yet had to deal with these kinds of problems in the past (Daft, 2012).

Corporate decision-making methods are divided into two groups: individual decision making where one individual, a decision-maker, decides; and group decision making where a group of individuals, usually executives, come together and decide on more complex problems.

2.2 Individual decision making

Corporate managers often receive the role of being decision-makers, they are either directly involved in making decisions, or in other instances implement change and introduce them to their employees. Decision-makers need to possess knowledge on the environment and the industry in which the organization is working in order to make efficient and effective decisions. Individual decision-makers are most often responsible for programmed decisions as the problems are well defined and there are known processes to solve the problems. Examples of these problems are short-term goal setting, distribution of responsibility, approving the budget cost, employee promotion, and so forth. It is the responsibility of the decision-maker to decide on these matters as he is given the power to do so. In most instances, these problems contain low-risk tolerance and the decision-making process is based on previous experiences. Although the problems do not seem as important as other more complex problems, it is important that the decision-maker possess the knowledge and the ability to decide quickly and efficiently. However, the more complex the problems become, the likelier it is that group decision making occurs (Yukl, 2006; Simon, 1987).

2.3 Models of individual decision making

In order to better understand how individual decision-makers decide, models such as the rational approach and the bounded rationality model are used to support the ideology of individual decision making. The rational approach describes a way a decision-maker should decide. The decision-maker should follow a rational step-by-step process in order have a successful decision-making process. However, the bounded rationality model describes how a decision should be made when there is a lack of time, and resources (Daft, 2012).
2.3.1 Rational Approach

The rational approach, or the prescriptive model, identifies problems systematically, and it requires that the problem should be approached and implemented in a rational way, preferably as a step by step solution that leads to making a logically sound decision (Robbins & Judge, 2007). The premise is that the problem is standardized. The approach should also advise how a decision-maker should behave in order to get the desired result (Buchanan & Huczynski, 2004; Brown, 2005). This multi-step approach aims to be logical by following an orderly path from problem identification through problem solutions (Robbins & Judge, 2007).

According to the rational approach, the process of decision making is divided into eight steps as summarized in figure 1.

![Figure 1. The rational approach model (Daft, 2012).](image)

The first four steps are part of the problem identification process while the other four are part of the problem solution process. In the first step, *monitor the decision environment* (1), the decision-maker finds ways to gain information on the external and internal environment of the organization that distinguishes deviations from estimated or
acceptable behavior. The decision-maker cooperates with his colleagues and examines the budget cost and other reports. The second step is to define the decision problem (2). The decision-maker looks at the problem with more detail, examines who was involved, where it took place, and how it has affected current operation. The third step is to specify decision objectives (3). The decision-maker then decides what should be accomplished with the decision process. The next step is to diagnose the problem (4). The decision-maker digs more into the cause of the problem. Understanding the cause of the problem helps the decision-maker to find a suitable solution. The fifth step involves developing alternative solutions (5). It is necessary for the decision-maker to understand every possible alternative considered in order to fix the problem and in order to find the best suitable solution to the problem. The decision-maker may need to search for ideas and suggestions from his colleagues at this point in the process. The next step is to evaluate alternatives (6). The decision-maker usually needs to use statistical analyses and personal experience at this stage in order to evaluate the most beneficial alternative. The pros and cons of each alternative are thoroughly examined as well as the likelihood of the alternative achieving the desired goals. The seventh step involves choosing the best alternative (7). This stage is the essence of the decision-making process. The decision-maker has gathered information from previous stages, and he should have the information he needs in order to choose the best alternative with the best possible solution. The final stage is to implement the chosen alternative (8). The decision-maker uses his knowledge and experience to convince employees, he gives them instructions to be sure that the chosen alternative is properly implemented and executed. Then it returns to step 1, making this process a continuous cycle (Brown, 2005; Daft, 2012).

The rational approach is an appropriate model in cases where the decision-maker has enough time for an organized thought-out process. The decision-maker should also focus on these steps even though the decisions are non-programmed, undefined, and require quick actions. However, he will have to count on previous experience, and personal factors in order to shortcut his way to the most beneficial solution (Daft, 2012).

2.3.2 Bounded rationality model

The bounded rationality model is based on research which indicates that the prerequisite of decision making is imperfect, that it is almost impossible to consider all options or even predict their consequences, and that final decisions are in many cases based on personal or political factors (Daft, 2012; Simon 1987). The model was put forward by
James March, Richard Cyert, and the Nobel prize winner Herbert Simon. The bounded rationality model postulates that the human mind is limited, and people decide according to their interpretation of the situation rather than seeking the best solution possible (Buchanan & Huczynski, 2004). The model is most suitable for instances where there is not enough information available, and when a decision-maker must face new, unclear, or difficult decisions (Daft, 2012; Simon 1987).

According to the bounded rationality model, there are constraints in decision making that influence the decision. These constraints are summarized in figure 2.

Figure 2. Bounded rationality model (Daft, 2012).

These constraints do not only refer to how complicated factors in decision making can become, but also refer to how various constraints can affect the individual responsible for making the decisions. Circumstances in decision making are often vague and require social support, shared perspectives, acceptance, and approval. Corporate culture and ethical values also play a major role in the decision-making process. Decision-makers are often caught in a trap of making decisions based on pleasing higher management, or individuals they respect or are trying to become. The decision-maker does so for his personal reasons such as his desire for prestige, personal decision style, and his desire to satisfy his emotional needs. All these factors limit the use of the rational approach, which should in theory always lead to a perfect decision-making solution (Buchanan & Huczynski, 2004; Daft, 2012). That is why, according to the bounded rationality model, that intuition of the decision-maker plays a major role in the decision-making process.

The intuition of the decision-maker plays a major role both in the problem identification and the problem solution phases. Previous experience and insight of a decision-maker come in handy where situations in the environment are complex and unclear, in order to identify undefined problems and execute a beneficial solution. The decision-maker may not be able to verify that a problem is occurring, but intuition tells
him that certain factors may need more attention or consideration. It is perceived that intuition is becoming more important in the problem identification process in today’s business environment. Decision-makers are more often deciding based on their intuition rather than examining the information they have in front of them. Experienced decision-makers have gained knowledge and learned how to react in certain unexpected situations, and therefore trust more on their intuition to solve a problem rather than available information on a rational alternative solution (Daft, 2012; Simon 1987). As an individual decision-maker, his main goals should in the end always lead him to make a sufficient and satisfying decision for his organization.

The rational approach and the bounded rationality model apply when there is one decision-maker. However, when organizations become larger and problems become more complex more than one decision-maker must participate in order to execute an effective, and efficient decision-making process and achieve a desirable solution.

2.4 Group decision making

A group by definition is composed of two or more people. A group, therefore, has more access to information and resources, giving them a greater capacity to process information. However, group decision making also presents several liabilities, such as requiring more time and resources in order to agree on a decision and rushing to worse outcomes because of limited time. Some decision-making problems are even so “small” or unimportant that group decision making is rather an overkill than being beneficial, which can lead to failure (Forsyth, 2013). Group decision making may, therefore, offer both advantages and disadvantages in decision making.

Group decision making develops into five stages according to Tuckman & Jensen's (1977) theory of group development. The theory suggests that groups pass through five stages, as summarized in figure 3.

![Figure 3. Group development (Tuchman and Jensen, 1997).](image)

The first stage is orientation (forming) (1). The decision-making group forms itself, and members become oriented towards one another at this phase of the group
development. The next stage is conflict (storming) (2). Conflicts surfaces as members of the group set their objectives and they vie for status. The third stage is structure (norming) (3). Standards emerge in the structure and the conflicts start to subside when the decision-making group becomes more structured. The fourth stage is performance (performing) (4). The group concentrates on the work and the tasks that need to be done by cooperating in order to meet the set objectives of the group decision making. The fifth and last stage is dissolution (adjourning) (5). The group has reached a final decision and the cooperation formally comes to an end. Some decision-making groups tend to cycle repeatedly through some of these stages as disagreement can emerge between group members (Tuchman and Jensen, 1997).

Vroom (2003) suggests that different decision-making methods should be executed depending on different situations. He developed a normative model of decision making, as summarized in figure 4, where he identified five different methods of decision-making processes.

![Figure 4. A normative model of decision making (Vroom, 2003).](image)

The first method is deciding (1), a leader of a decision-making group should use members of his group as sources of information, however, he makes all the final decisions and he does so independently without explaining to group members why he required the information. The second method is individual consult (2). The leader talks with each group member individually without ever consulting the group as a whole. The decision-maker then makes his final decision according to the information he obtained in this manner. The next method is group consult (3). The leader meets and consults the entire group at once, obtains information from them, asks for opinions, and then comes to a final decision. The fourth method is to facilitate (4). The leader takes on a more cooperative holistic approach where he collaborates with the entire group as they work towards a unified and consensual decision. The leader is more impartial, non-directive,
and never imposes a specific solution to the group. The decision is therefore made by the group, not by the leader. The fifth and last method is delegate (5). The leader takes a step back and passes the problem to the group. He supports and collaborates with the group but allows them to reach a final decision (Vroom, 2003).

2.5 Models of group decision making

In order to understand more thoroughly how group decision making works, models such as the Incremental decision process model and the Carnegie-model are used to support the ideology of group decision making. The incremental decision process model describes the development of a series of actions from the problem identification phase to the problem solution phase. The Carnegie-model describes the importance of collaboration, and suggests that group decisions often lead the group to decide on an acceptable solution rather than the most beneficial one (Daft, 2012).

2.5.1 The incremental decision process model

The incremental decision process model was created by Henry Mintzberg and his colleagues at McGill University in Montreal, Canada. They wanted to gain more knowledge on how organizations tackled decision making where the problem was non-programmed and where there are no known solutions to the problem. They performed a study on corporate decision making. Mintzberg and his colleagues analyzed 25 cases of decision processes by tracking events related to the decision process from beginning to end. The study analyzed each step in the process (Mintzberg, Raisinghani, and Théorét, 1976).

The decision made by the organizations in Mintzberg and his colleagues’ study were very diverse. Most of the decisions were related to things such as purchases of new technology, new machinery, and new facilities, or related to the development of new products and services. They realized the more significant the scale and the importance of the decision were, the longer time it took to reach a decision. Most of the decisions made by the organizations took more than a year and one-third of them took more than two years to reach a final decision (Mintzberg, Raisinghani, and Théorét, 1976).

The process of the incremental decision process model is summarized in figure 5. Each phase shows possible steps in the decision process. The process is divided into three phases: the identification phase, development phase, and the selection phase (Daft, 2012).
The first phase is the **identification phase** (1). The decision-making group recognizes a problem that requires a solution. These problems emerge when changes occur in the internal environment of the organization, or when the organization is not performing as it should be. The group then diagnoses the problem and information is collected in order to find the best solution. The organization does have, in certain situations, a defined system to diagnose the problem but that is not always the case. It depends on the problem. In most situations, there is limited time to solve the problem and the group has to react quickly and make swift decisions. The second phase is the **development phase** (2). The most adaptable solutions to the problem are selected. The development of a solution goes in two directions. The group can look internally and check if a similar issue has occurred previously to which there are known solutions to the problem, or they must design a custom solution to this problem. If there are no prior known solutions to the problem, then the decision-making group has a vague idea of a suitable solution. The group tries out different processes and the best solution is often developed by a series of actions from problem identification to the problem solution. The third phase is the **selection phase** (3). The most suitable solution is chosen. When it comes to a custom solution, it does not mean that the chosen solution is the most suitable one but rather the most acceptable one. The evaluation of a solution goes into three different ways. The judgment evaluation is used when there is an individual decision-maker who makes the final decision, and the decision is based on his prior experience. The analysis evaluation is a systematic approach where the solutions are based on systematic analysis. Mintzberg discovered in this research that most of the decisions were not based on systematic
analysis. Bargaining evaluation is most often used where a suitable solution is based on the agreement of more than one individual decision-maker. In those circumstances, each individual may have different benefits of the outcome and thus conflicts of interests may arise. Discussions and agreements are necessary in those situations in order to reach the most suitable solution. If the organization has come to an agreement on the most suitable solution, the solution is then authorized (Daft, 2012; Mintzberg, Raisinghani, and Théorét, 1976).

The majority of important decisions made by organizations usually consist of many “less” important decisions. When organizations have to decide on a lot of things, they may face barriers and interruptions in their decision-making processes such as from their environment, of limited time, and so forth. Interruptions and barriers may force them to look at previous decisions in order to find new and better ways to a more suitable solution (Mintzberg, Raisinghani, and Théorét, 1976).

2.5.2 Carnegie-model

The Carnegie-model was created and developed by Richard Cyert, James March, and Herbert Simon which all worked for the Carnegie-Mellon University in Pittsburgh. Their study demonstrated that many executives participate in corporate decision making and that the final outcome is based on agreement between those executives. The need for agreement and compromise is crucial between executives who have different views on corporate goals and on the priority for problem-solving. Participants in corporate decision making can be division managers, human resource managers, or even outsiders such as powerful clients, and bankers (Cyert & March, 1992; March & Simon, 1958). Figure 6 summarizes decision making according to the Carnegie-model.
Cyert and March (1992) put forward the hypothesis that decision-makers begin with seeking information in their immediate environment and places in which they have easy access to information in order to quickly solve problems they are facing. Decision-makers do not expect a desirable solution when conditions are poorly defined and if they disagree on certain aspects. The Carnegie-model suggests that methods for seeking solutions are limited and only sufficient to get acceptable solutions rather than desirable ones. Decision-makers usually decide on the first acceptable solution they come up with.

The Carnegie-model is especially useful in the problem identification phase. Collaboration between the decision-makers is important in order to implement the decision, especially if they are deciding on larger problems such as corporate restructuring (Daft, 2012). However, if group decision-makers do not cooperate to find the most suitable solution then nothing will be done to solve the situation (Cyert & March, 1992).

David A. Garvin and Michael A. Roberto, researchers at Harvard Business, have another perspective on group decision making and what influences how decision making
is arranged at an organization. They believe that there are two main approaches to group decision making: The inquiry and advocacy approaches.

### 2.6 Inquiry versus Advocacy approach in decision making

Garvin and Roberto (2001) developed a model that divides decision making into two approaches: *Inquiry* and *advocacy*. They believe that decision making is the most important job of the executives but one of the easiest to get wrong. However, they believe it does not have to be that way if decision-makers view the decision-making process in a whole new perspective.

A corporate decision-maker's role is to set a strategy and motivate people but above all else, decision-makers are made and broken by the quality of their decisions. Garvin and Roberto's (2001) research strongly suggests that most decision-makers fail in that area. Why? Because decision-makers tend to look at a decision as an event that takes place at a single point in time, but the fact is that decision making is not an event. It is a process that unfolds over weeks, months, and even years.

Their two approaches to decision making, summarized in figure 8, explain how decision-makers can execute a sound and effective decision-making process by outlining a set of criteria for assessing the quality of the decision-making process.

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<tr>
<td>Discouraged or dismissed</td>
<td>Cultivated and valued</td>
<td></td>
</tr>
<tr>
<td>Winners and losers</td>
<td>Collective ownership</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 7. Inquiry versus Advocacy (Garvin & Roberto, 2001).*

Garvin and Roberto put forward in their research that not all decision-making processes are equally effective. They prefer the inquiry approach, which is an open-minded process designed to generate alternatives, encourages a change of ideas, and most importantly, produces the most suitable solution. Unfortunately, this does not come
easily. Group decision making tends to default to the second one, the advocacy approach. Both approaches are similar on the surface, wherein a group of people discuss and debate in order to find a solution to a problem, but despite their similarities they produce dramatically different results (Garvin & Roberto, 2001).

The advocacy approach views the concept of decision making as a contest between the decision-makers rather than a collaboration as the inquiry approach views it. This most often leads to negative debates as decision-makers may have different visions for the future of the organization. The main difference between the purpose of discussions is, that the inquiry approach tests and evaluates all of the available information while the advocacy approach lobbies around ideas. Persuasion also plays a major role in which information is sought. That is why the inquiry approach views the participants of decision making as critical thinkers rather than spokespersons for their own visions. Patterns of behaviors for participants in the advocacy approach are striving to persuade others, downplaying weaknesses, and defending their current positions. However, participants of the inquiry approach are more open to different alternatives to solutions, more accepting of constructive criticism, and they place balanced and valuable arguments. The minority view participants in the inquiry approach as valued and cultivated rather than discouraged and dismissed. The outcome of the two approaches is dramatically different because the advocacy approach views the outcome as winners and losers while the inquiry approach views the outcome as collective ownership.

Decision-making processes characterized by the inquiry approach tend to produce higher quality decisions that are reached in a timely manner and can be implemented more effectively. This leads to a result where a decision advances the organizational objectives. Garvin and Roberto’s research, therefore, indicates that decision-makers who seek to improve decision-making capabilities should move from a process of advocacy to one of inquiry (Garvin & Roberto, 2001). Decision-makers seeking to move from an advocacy approach to inquiry have to pay attention to three critical factors, the three C’s of effective decision making: Conflict, Consideration, and Closure.

2.6.1 Conflict

Conflict can in most situations bring issues into focus, which allows decision-makers to make more informed choices. However, the wrong kind of conflict can lead to a negative decision-making process. Conflict can be divided into two forms - cognitive and affective. Cognitive conflict occurs when a group of decision-makers disagree on certain
ideas and assumptions, and on which approach to a solution is the most suitable one. On the other hand, affective conflict is emotional, involving personal friction, rivalries, and less cooperation, which derails the decision-making process. It is a challenge for leaders to increase cognitive conflict, but they can do so by establishing norms such as informing participants that debate is rather a rule than an exception. They could also structure the conversation to foster debate, which would guarantee a cognitive conflict. There are a few techniques that skilled decision-makers use in order to foster cognitive debate while minimizing affective conflict.

First, decision-makers need to demonstrate how issues should be framed and set ground rules on what kind of language is acceptable during discussions. By doing so, they remove some of the emotional and personal frictions. Second, decision-makers could advise participants to let go of their pre-established positions and assign them to tasks other than their traditional roles. Third, decision-makers could take individuals out of their well-grooved patterns and ask them to gain a new perspective and argue for a position which they did not endorse at the beginning of their discussion. Fourth and final, decision-makers should pay attention to participants who are locked in debate and ask them to gather more information on key facts and assumptions. By doing so, the decision-maker is defusing the tension and leading the decision-making group back on the right track (Garvin & Roberto, 2001).

2.6.2 Consideration

In some circumstances many participants feel overruled, leading them to grudging acceptance and resistance of the outcome. However, the reality is that the decision-maker makes the final decision in most situations. The decision-makers' role is to make the participants in the decision-making process feel like their ideas were considered, and that they had an opportunity to influence the final decision. Mauborgne and Kim's (1997) research on decision making showed that participants agree more on the final decision if they feel as the decision-making process was fair, even if their ideas and views did not prevail. There are few techniques for decision-makers to demonstrate consideration.

First, decision-makers have to show fairness by giving everyone an opportunity to express their own ideas and views. They do so by actively listening to everyone during the discussion and by considering everyone’s ideas before reaching a final decision. Second, they should be open to other participants’ ideas and have a willingness to accept that ideas and views of others may differ from their own. Third, decision-makers need to
show interest in other participants’ ideas by listening actively and attentively. The most effective way to do so is by asking questions, insisting on deeper explanations, making eye contact, and showing patience, without interrupting participants when they are explaining their position. Finally, they need to address how arguments of each participant affected the final decision and why they chose to differ from those ideas (Garvin & Roberto, 2001).

2.6.3 Closure

It is important to know when to close a decision-making process because all too often are decisions both endless and decided on too early. Participants often fall into the trap of thinking that they are team players if they do not engage in critical thinking, which often leads to the group accepting the first reasonable solution. This is known as “groupthink”. Groupthink can be dangerous as there are no objections surfacing at critical moments. Decision-makers must pay attention to participants that have disaffected the discussion in order to avoid groupthink. They can do so by taking a break from the discussion and encourage participants to speak up and inform the group of their ideas and views. They could also postpone the meeting and encourage everyone to develop disagreements and gain some understanding of why these decisions are taking place. If the decision-making process is taking an endless time, then decision-makers must encourage the participants to be more comfortable with making speedy decisions in the absence of complete support (Garvin & Roberto, 2001).

The inquiry and advocacy approach applies to a group decision-making process. However, it can also be applied to an individual decision-maker because, in each decision-making group, there is an individual decision-maker.

2.7 Individual versus group decision-making processes

It has long been debated whether individual or group decision making gives better results and it is argued that decisions made by a group tend to be more effective. It is justified by assuming that an organized whole is viewed as more significant than the sum of its individual efforts (Bang & Frith, 2017). However, it is considered that individual decision making has its pros as it can be quicker and generally more cost-effective. One of the main reasons being as individual decision making does not require gathering others, while another major factor is that individual decision-makers make prompt decisions while group decision making tends to be very time consuming (Teeboom, 2018). It is important that organizations have predetermined which decisions require
individual decision making and which require group decision making. Experts in managing decision-making processes at McKinsey & Company believe that there are four dimensions to decision making and each dimension illuminates whether an individual decision making, or a group decision-making process is required. These dimensions are summarized in figure 7 (Lackey, Smet, and Wiess, 2018).

<table>
<thead>
<tr>
<th>Scope and impact</th>
<th>Level of familiarity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Big bet decisions</strong></td>
<td><strong>Cross-cutting decisions</strong></td>
</tr>
<tr>
<td>Have major consequences for the company, often involving situations with unclear right or wrong choices</td>
<td>Frequent decisions that require broad collaboration across organizational boundaries</td>
</tr>
<tr>
<td><strong>Ad hoc decisions</strong></td>
<td><strong>Delegated decisions</strong></td>
</tr>
<tr>
<td>Decisions that arise episodically: impact on broader organization, depends upon how concentrated they are</td>
<td>Decisions that can be assigned to individual primarily accountable or to working team</td>
</tr>
<tr>
<td>Unfamiliar, infrequent</td>
<td>Familiar, frequent</td>
</tr>
</tbody>
</table>

*Figure 8. The ABCDs of categorizing decisions (McKinsey & Company, 2018).*

The first dimension of the ABCDs decision-making model is the *big bet decisions* (1). These are the big important decisions that have enormous implications for the organization, such as acquisitions, a merger or a major capital investment. These decisions have major consequences and are most often not easy to undo. The second dimension is *cross-cutting decisions* (2). These are small, frequent decisions that accumulate to a larger decision. They often require involvement from many different parts of the organization so they are known as cross-functional decisions. Examples of these decisions are such as pricing of products and decisions in a supply chain. The third dimension is *delegated decisions* (3). These decisions are characterized by the fact that they can be delegated to a single individual who has the knowledge to make good decisions and the ability to interact with other people for feedback and new perspectives on the subject. These decisions do not need a carefully mapped out decision process and they are very familiar within the organization and happen quite frequently. The fourth and final dimension is *ad hoc decisions* (4). These decisions arise episodically and
require careful concentration as they are reasonably small and infrequent. They also require less mapping out ahead of time and are usually dealt with as they come up. Ad hoc decisions tend to be dealt with both by individual decision-makers in certain cases and by a group in other more complex cases (Lackey, Smet, and Wiess, 2018).

Although there is a difference whether an individual or group decision-making process occurs among the four dimensions, the process itself can be very similar according to the rational approach. All the decision-making processes follow the steps of the problem identification and problem solution phase in the rational approach method which was summarized in figure one in chapter 2.2.1 above.

The problem identification phase includes four steps: Monitoring the decision-making environment, defining the decision problem, specifying decision objectives, and diagnosing the problem (Daft, 2012).

**Step 1: Monitor the decision-making environment**

Step one includes gaining information on the organizational environment. The decision-maker must then examine the budget cost and other reports in accordance with his colleagues. This first step in the decision-making process applies to both individual and group decision making. Whether it is an individual or a group decision-making process, it is necessary that decision-makers are aware of the internal and external environment of the organization in order to distinguish accepted behavior. Although some decision-making processes only require an individual decision-maker, it is important that the decision-maker seeks advice from his colleagues when it comes to gaining information on the close environment of the organization. Therefore, this first step of the process is rarely done individually.

**Step 2: Define the decision problem**

The second step is about defining the decision-making problem. The decision-maker investigates deeper into the factors that influence the problem such as who was involved, where it took place, and how it is affecting the operation of the organization. The decision-maker looks into these factors with precise details in order to better understand the root of the decision problem. This step applies to both individual and group decision-making processes because without finding the root of the problem, it is almost impossible to find the right solution.
Step 3: Specify decision objectives

The decision-maker decides on what should be accomplished with the decision-making process. The objectives must be specific in order to know what exactly needs to be achieved and why exactly it matters to reach those objectives. This applies to both individual and group decision-making processes. However, it appeals more to group decision making as they must rely on cooperation between decision-making participants. In order for them to cooperate effectively, there needs to be clear objectives for the group to aim at.

Step 4: Diagnose the problem

This is the fourth and last step in the problem identification phase. The decision-maker investigates exactly what was the cause of the problem in more detail. This step is, therefore, a further and more detailed investigation of step 2. Investigating the problem thoroughly gives the decision-maker a better understanding, which helps him to find a suitable solution and a decision process to prevent similar problems in the future. This applies to both individuals and groups in decision making. However, group decision-makers usually deal with more complex problems, which makes it harder to diagnose the problem. It is, therefore, necessary that the group cooperates in order to properly diagnose the root of the problem.

When individual and group decision-makers finish the problem identification phase then they move on to the second phase of the decision-making process, the problem solution phase. The problem solution phase also includes 4 steps: Developing alternative solutions, evaluating alternatives, choosing the best alternative, and implementing the chosen alternative (Daft, 2012).

Step 5: Develop alternative solutions

This is the first step in the problem solution phase. After carefully mapping out the root of the problem and ways to prevent it, decision-makers can move on to finding a suitable solution for the problem. It is necessary that the decision-maker has experience and knowledge in order to truly understand every possible alternative that might fix the problem, and in order to find the most suitable solution. An individual decision-maker needs to search for ideas and suggestions from colleagues at this stage of the process to get different perspectives on the matter. This applies to both individual and group decision-making processes. The individual decision-maker seeks advice from colleagues
while group decision-makers collaborate between themselves to get different perspectives on the problem.

**Step 6: Evaluate alternatives**

After developing alternatives comes the evaluation of those alternatives. The decision-maker uses statistical data analysis at this stage in order to evaluate the most beneficial alternative. His knowledge and personal experience play a major role at this stage to get different perspectives on the problem. Combining the statistical data analysis and his experience helps him to thoroughly evaluate the pros and cons of each alternative and evaluate the likelihood of those alternatives achieving the desired goals. The individual decision-maker relies on his own knowledge and experience at this stage while group decision-makers combine their experience and cooperate to evaluate each alternative. As their experience differs, so does their evaluation of the alternatives, which may lead to disagreement and longer evaluation time.

**Step 7: Choose the best alternative**

This stage is the essence of the whole decision-making process. The individual decision-maker has gathered all the information available, developed and evaluated alternatives, and should now have everything needed to choose the most beneficial alternative with the best possible solution. However, this stage often gets prolonged as the individual decision-maker often lacks confidence in choosing the best alternative and group decision-makers disagree with which alternative is the best one with the most suitable solution. It is important that group decision-makers cooperate and find a common conclusion or else they may risk being stuck at this critical stage.

**Step 8: Implement the chosen alternative**

This is the final step of the decision-making process. The decision-maker uses his knowledge and experience to properly implement and execute the chosen alternative. He uses his leadership style to convince his colleagues that this was the best alternative with the most beneficial solution. An individual decision-maker tends to perform this part of the stage on his own as he has all the information on the solution, while group decision-makers find a participant of the group to inform others at the organization.

Running both an individual and a group decision-making process under the rational approach gives a clear answer that the process itself may be similar to each other. Both processes go through step one to step eight. However, some decisions, like the ones that
are more complicated, may require a group decision-making process because of the diverse knowledge, experience, and perspectives of a group (Daft, 2012).

Before deciding on which action should be made, decision-makers must evaluate the situation confronting them. Unfortunately, in some circumstances, leaders can fall into well-documented physiological traps such as spending a lot of resources to defend against unlikely outcomes, underestimating the range of potential outcomes, and allowing past experiences and events to dictate their view of current situations (Hammond, Keeney, & Raiffa, 1998). These are just some of the traps that corporate decision-makers fall into, and there are existing techniques to overcome each one of them.

2.8 The hidden psychological traps

Decision making is one of the most important, toughest, and riskiest tasks for executives. Making a bad decision can truly hurt an organization as well as the executive’s career. In many cases a bad decision can be tracked back to how the decision-making process was carried out, but sometimes it lies in the mind of the decision-maker. Researchers have been studying for over half a century how the mind works when people make decisions. The research of Hammond, Keeney, and Raiffa (1998) revealed that executives use unconscious habits to deal with complexity in most decision-making processes. They identified a series of flaws in the way decision-makers think when deciding. The most dangerous thing about these flaws is that they are invisible. They are hardwired into the decision-makers' thinking processes and they often fail to recognize them.

Hammond, Kenney, and Raffia’s study examines these well-documented psychological traps that are likely to occur in business decisions. They offer techniques that decision-makers could use to guard against them. They believe that awareness is the best defense and that decision-makers that attempt to familiarize themselves with these traps will be able to ensure a better decision-making process (Hammond, Kenney, & Raiffa, 1999).

2.8.1 The Anchoring Trap

The anchoring trap is a common mental phenomenon. Past events and trends are one of the most common types of anchors for decision-makers. For example, an executive who would like to project the sales of a product would look at figures on sales volumes in the past. The sales volume would then become anchors, as well as other factors. However,
where there are rapid changes in the marketplace, past events and trends can lead to poor forecasts and misguided choices. In most situations, anchors do establish the terms on which a decision-making process will be made. The anchoring trap is widespread, but there are few techniques decision-makers could use in order to avoid the anchoring trap or reduce the impact.

First, decision-makers should always try to view the problem from other perspectives. They can do so by viewing other alternatives to a solution rather than sticking with the first one that came up. Second, decision-makers should try to address the issue themselves before consulting with others, in order to avoid anchors from others. Third, decision-makers should be open-minded about the problem they have before them as they seek information and opinions from a variety of other people. This should give them a better sense of the problem, and of which alternatives are available. Finally, great decision-makers should avoid anchoring others they consult. They could do so by limiting the information they share with others in order to avoid their own preconceptions coming back to them (Hammond, Keeney, & Raiffa, 1999).

2.8.2 The Status-Quo Trap

Decision-makers believe that they decide rationally and objectively but the truth is that they all carry biases, and those biases influence the final decision they make. Decision-makers fall into the status-quo trap to protect their egos from damage, and the most dangerous thing is that is lies within their psyches. They avoid taking action that would upset the status quo because acting would require responsibility. Taking no action feels like the safer course, putting them in less psychological risk. Experiments on this phenomenon have shown that the more choices a decision-maker is given, the likelier it is that the status-quo trap occurs (Hammond, Keeney, & Raiffa, 1998). The status-quo trap is especially noticeable in a business where sins of doing something (commission) tend to be more punished than doing nothing (omission). In some circumstances sticking with the status quo may be the best alternative, however, that does not mean a leader should choose it just because it is comfortable. There are few techniques decision-makers could use to lessen its pull.

First, decision-makers should always remind themselves of their objectives and how the status quo affects them. The status quo may be a barrier to the objectives and decision-makers may need to evaluate their current situation. Second, decision-makers should always try to find other alternatives. They should never view the status quo as
their only alternative. It is important that they view the pros and cons of each alternative before deciding on which alternative is the most suitable one. If decision-makers are faced with several alternatives, they need to ask themselves if they would choose the status-quo alternative if it were in fact, not the status-quo. Then they should force themselves to choose one alternative (Hammond, Keeney, & Raiffa, 1999).

2.8.3 The Sunk-Cost Trap

The term *sunk-cost* is defined by economists as an old investment that is now irrecoverable (“What is sunk cost? definition and meaning.”, n.d.). Decision-makers are often faced with a deep-seated bias to choose in a way that justifies past choices, even if past choices are no longer valid. Sunk costs may lead decision-makers to make inappropriate decisions even if they know, rationally, that sunk costs are irrelevant to present decisions. However, decision-makers often cannot free themselves from past decisions because they are unwilling to admit to their mistakes, especially in a business environment where bad decisions are often a very public matter which can lead to criticism from colleagues and bosses. The sunk-cost trap is often deeply rooted in the organizational culture because decisions that are badly made can be severely punished, leading decision-makers to drag on failed projects endlessly in the hope of turning it somehow into a success. There are few techniques decision-makers could use in order to avoid being trapped in the sunk-cost trap.

First, decision-makers must acknowledge that some good ideas may lead to bad results, especially in an uncertain world where unforeseeable events occur all the time. Second, decision-makers should seek out individuals that were uninvolved with the past decision. Third, decision-makers should admit to earlier mistakes and accept the fact that even the most experienced decision-makers do make bad decisions. If the problem lies within, they will need to deal with it head-on. Finally, decision-makers should consider the quality of their decision making rather than just the quality of the outcome (Hammond, Keeney, & Raiffa, 1999).

2.8.4 The Conforming-Evidence Trap

The conforming-evidence bias leads decision-makers to obtain information that confirms their point of view and avoid information that goes against it. The bias also affects decision-makers in how they interpret the evidence they receive. Decision-makers confronting the conforming-evidence trap tend to put less emphasis on conflicting information and put too much weight on the supporting information. They unconsciously
accept the supporting information as it helps to prove their views. Hammond, Keeney, and Raiffa (1999) believe that there are two fundamental psychological forces that describe the conforming-evidence trap. First, the tendency to subconsciously decide on things people want without figuring out why they want it. Second, people tend to be more engaged by things they like rather than things they dislike. Therefore, decision-makers are more drawn to resources that support their views rather than resources that contradict it. There are a few techniques decision-makers could use in order to be sure that their choice is a smart one rather than the choice they are subconsciously drawn to.

First, decision-makers should always avoid accepting conforming evidence without questioning it, and they should always examine all of the evidence equally. Decision-makers should build counterarguments themselves and question the reliability of the information, or ask a colleague to argue the decision they are contemplating. When seeking information from others, decision-makers should ask leading questions that invite counterarguments. If people seek advice that always supports their point of view, then they should most likely seek advice elsewhere to avoid surrounding themselves with yes-men (Hammond, Keeney, & Raiffa, 1999).

2.8.5 The Estimating and Forecasting Traps

Most decision-makers are constantly making estimates and receiving quick feedback about daily practice, however, making estimates or forecasts about uncertain events is a different matter. They are constantly making forecasts on these uncertain events but rarely get accurate feedback. All of the traps that have been mentioned so far can influence the decision-making process when confronted with uncertainty. However, the estimating and forecasting traps have a distorting effect in uncertain situations because it makes it harder for decision-makers to assess probabilities. The three most common uncertainty traps are: the overconfidence trap, the prudence trap, and the recallability trap.

Most decision-makers tend to be overconfident about their accuracy, which can lead to errors in judgment and in return, bad decisions. If decision-makers under- or overestimate crucial variables, they may miss opportunities or expose themselves to far greater risks. Decision-makers may also be overcautious. In situations where they are faced with high-stakes decisions, they tend to adjust their estimates or forecast to be on the “safe side”. Even if decision-makers are neither overconfident nor overcautious, they can still fall into the estimating and forecasting traps. Memories of past events can play a major role
in the decision-makers' prediction for future events, especially those that left a strong impression on their memory. If these memories distort the decision-makers' ability to recall the events in a balanced way, then it will distort their probability assessments. There are few techniques decision-makers can be aware of in order to lessen or avoid the effect of the estimating and forecasting traps.

First, one of the best ways for decision-makers to avoid these traps is to take a disciplined approach to making forecasts and judging probabilities. Second, in order to avoid being overconfident in making estimates, they should consider the extremes of estimating, both the low and high ends. Then they should challenge the estimates of the extremes. Third, decision-makers need to state their estimates honestly. They need to emphasize the importance of honest input to participants of the decision-making group which supplies the decision-maker with the estimates forecast. Finally, not being guided by their memory and impressions, and rather getting actual statistics is one of the most important things decision-makers could do to avoid the estimating and forecasting traps (Hammond, Keeney, & Raiffa, 1999).

2.9 The decision-maker

When it comes to decision making, a decision-maker's brain is always at work. Unfortunately, their brain does not always help them and rather hinders them in a way. Their minds can influence the decisions they make because of misperceptions, biases, and other psychological traps. This happens at every stage of the decision-making process. The higher the stakes of the decisions, the likelier the risk of being caught in a psychological trap. Every trap that was reviewed can work in isolation. However, they can also work in concert, amplifying one another, which is even more dangerous. Even though decision-makers cannot change the way their minds work, they can build tests and implement discipline into their decision-making process in order to avoid errors in thinking and judgment (Hammond, Keeney, & Raiffa, 1999). Most importantly, decision-makers can increase their confidence in decision making by simply trying to understand the psychological traps and trying to avoid or lessen the effect of them.
3 Research method

This chapter discusses the methodology of the study. Research questions and the objectives of the study are presented. The formation of the study, its implementation, the methodology behind the collection of data, and the measuring instruments used to process data will be discussed. Finally, the research flaws will be examined.

3.1 Research statement

The main aim of this project was to conduct exploratory research on individual and group decision making in an Icelandic high-tech manufacturing organization. They operate globally and are among the leading organizations worldwide in providing products, services, and consultancy in the industry which they operate.

The objective is to ascertain what qualities define a successful decision-making process and how decision-making processes are managed by decision-makers. It is examined whether the decision-maker possesses knowledge that will benefit him and what experience and knowledge he uses to perform his work. The objective is to examine how decision-making procedures affect the decision-making process and the main difference between individual versus group decision making. The research examines different methods of both individual decision making and group decision making and methods that apply to them both. It also carefully examines two approaches to decision making to gain better knowledge on which approach leads to more suitable results. Finally, the main objective of the study is to thoroughly examine decision-making traps in order to better understand which psychological traps affect the decision-making process and how the decision-maker can lessen or avoid the negative effect of them.

The purpose of the study is to answer the following research questions:

- Are the methods of individual decision making related in any way to the methods in group decision making? And is there a method that relates to them both?
- Is there a difference in how managers perform an individual decision-making process versus a group decision-making process?
- Do decision-makers tend to follow procedures and processes in decision making or do they rely on experience and intuition? Does it differ in individual decision making versus group decision making?
- Do corporate decision-makers fall into hidden physiological traps while conducting a decision-making process?
3.2 Methodology

Qualitative research methods were used in the preparation of this study. Qualitative research methods have long been used by scholars. Their origins can be attributed to the anthropologist Bronislaw Malinowski, who was the first scholar to live among the people he studied (Bogdan and Biklen, 2003). With qualitative research methods, an attempt is made to gain a deeper understanding of the life and circumstances of individuals. The emphasis is not placed on statistical information or quantitative research methods. Qualitative methodology assumes that interviewees have relative and useful knowledge to give (Kristjánsson & Halldórsdóttir, 2003). Such a methodology is used when trying to identify a coherent picture of people's lives, circumstances, and experiences and it is, therefore, necessary to express people's ideas through a dialogue (Taylor & Bogdan, 1998). Qualitative research is especially useful when dealing with issues such as decision making, which is often difficult to assess statistically and difficult to define accurately (Esterberg, 2002). It is important that the investigator tries to understand things from the perspective of the interviewee and is open to their experience. Qualitative research methods also provide a deeper understanding of the situation and can present events in a sequential manner and in the environment of the interviewee (Kristjánsson & Halldórsdóttir, 2003). Qualitative research methods do not rely on statistics and are therefore dissimilar to quantitative studies where the approach is based on finding averages, distributions, and inter-group relationships. Qualitative research methods are more based on the experience of the interviewees. Qualitative research is useful when the research questions start with "how …?" or "what …?" (Daviðsdóttir, 2003).

Subject understanding becomes easier with the use of employee interviews (Padgett, 2008). The methodology suggests that the researcher approaches the project with an open mind and attitude to the subject at hand. Some biases and preconceived beliefs are likely to be born in the process, and it is, therefore, important to approach the subject with neutrality (Hatch, 2002).

Quasi or partially open interviews are used in this study, which is characterized by predetermined questions. The interviewer is, however, alert to any kind of open discussion that the interviewee may report as useful to the research objectives. The interviewer is aware not to push any subjective views onto the interviewee (Merriam & Tisdell, 2016). Content analysis of interview data will be formed. Content analysis is
used on words, terms or phrases that appear in the text and they are classified into categories that have a similar meaning (Weber, 1990).

Open coding is a research method that involves organized review and reading of interviews where the researcher examines and compares different data and concepts, reading the interviews line-by-line with the intention of finding themes. With this method, it is possible to create the main theme and clearly distinguish the results of the study (Óttarsdóttir, 2013).

It is worth mentioning that in a qualitative research, the researcher himself is in some way a measuring instrument. The experience and knowledge of the interviewer on certain issues can be supportive or an obstacle to the processing of the data that has been collected. In addition, the knowledge of the researcher may be relevant as he goes through the data. Knowledge can both provide the person with a better insight but also cause him to have predetermined ideas that can affect the processing of the data (Esterberg, 2002). Qualitative research methods have been criticized, as the results can be shaped by the bias of the researcher and therefore it can be difficult to remain neutral (Kristjánsson & Halldórsdóttir, 2003).

3.3 Preparation and implementation of research

The study used qualitative research methodology which included interviews with managers dealing with decision making. Interviews were performed with open questions, which is a common qualitative research method (Hennink, Hutter and Bailey, 2010). An interview with open questions gives the interviewees the opportunity to express themselves in their own way, which captures the experience of the interviewee on the subject (Cohen and Arieli, 2011). Interviewees were encouraged to discuss the topic in a general way and touch on issues that addressed them personally or specifically address their interests or areas of knowledge.

Semi-structured interviews were used with a predetermined questionnaire. Semi-structured interviews are a good way to find out the understanding and ideas that the interviewee has on specific issues. The interviews are informal and, in many ways, resemble a general conversation rather than an interview, where the other person is encouraged to express himself openly, without him being compelled to answer or judged by the answers he gives (Esterberg, 2002).

Qualitative interview-based methods can provide reliable and comparable data. Before the questions are formulated, the first interview is taken informally. The first interview
questions were pre-tested to familiarize the researcher to the subject and find out which questions are appropriate for the final questionnaire (Cohen and Arieli, 2011). The first interview was with a specialist with extensive experience in the subject at hand and the interview was used to formulate the questions that were used in the following interviews.

Convenience sampling was used to select interviewees, a process where the individuals are suitable to answer the predetermined questions. Snowball sampling was also used. The interviewee is asked to point to another person whom he believes is well-suited to participate in the study (Cohen and Arieli, 2011). Because it was decided to examine certain experiences of certain individuals, these two methods were used. In preparation of the questionnaire, reference books and other supporting literature which the researcher has learned of through his studies or received suggestions of from the project supervisor were considered. The questionnaire frame should be able to reflect the work of the decision-maker, what features he holds and what knowledge he possesses.

3.4 Data processing and analyzing

Data collection took place in the spring of 2019. Each participant took part in a semi-structured interview. The interviews were performed in the work office of the interviewees in order to create a comfortable atmosphere and help them feel secure. The search for interviewees began in May 2019 and ended in August of the same year. The researcher contacted the Human Resource Manager by email and introduced himself and the reason for contacting them. Requests were submitted for an interview with executives who were considered likely to be able to provide reliable information and likely to comment on the issue. The researcher was provided the email address of the Human Resource manager by an individual working at the organization.

The interview consisted of open questions that the researcher had written for each interview. It should be noted that the questionnaire changed slightly after each interview, as the researcher became aware of which questions would be needed to improve. The purpose of the interviews was to gather information on the experiences and opinions of the participants and to try to get them to share their thoughts on the subject and related issues. In particular, attention was focused on issues such as individual and group decision making, decision-making processes, and psychological traps in decision making. Open and free conversations took place. An attempt was made to explore the views and ideas of the interviewees related to the subject. The researcher focused on using active
listening, respecting his interviewees, and focusing on listening to what the interviewees had to say rather than having a conversation.

The aim of the interview framework was to assess what qualities and skills are required in decision making in order to successfully lead a decision-making process. Initially, interviewees were asked to reveal their current working position, to enable the researcher to understand their role at the organization. Next, the interviewees were asked to answer questions specific to the work of the individual decision-maker, the work of group decisions, and finally the work of a decision-making process. It also emphasized what knowledge decision-makers must have to manage a successful decision and how important the human aspect of the work is in the opinion of the interviewee. Afterwards, it was examined how aware decision-makers are of the psychological traps decision-makers tend to fall into while deciding.

The interviews were all face to face and were recorded on a Samsung phone with the permission of the interviewee. Confidentiality of the interviewees is guarded and therefore their names are not disclosed. The interviews were eight in total and the average length was 50 minutes.

When all interviews were completed, the final analysis was carried out. Work was begun on typing the interviews verbatim on a computer. Next, the researcher read all the interviews several times and used a highlighter pen to analyze the main points away from what he felt were less important points for the study. Finally, the researcher read over what was highlighted and discussed their main points of view, identifying the meaning of each chapter, and naming each chapter that reflected the containing subject. Afterwards, the most important themes were selected and focused on (Davíðsdóttir, 2003). The purpose of replication was to preserve data and information that could affect the diagnostic process and results (Merriam & Tisdell, 2016).

3.5 Participants

Two methods were used to sample participants, purposive sample and convenience sample. When using purpose sampling, individuals who are experienced in the subject are selected for interviews (Morse, 2012). A convenience sample is used when looking for individuals who meet certain practical criteria, such as easy access, geographical proximity, and accessibility (Etikan, Musa and Alkassim, 2016).

Interviewees were selected specifically with respect to the research material (Esterberg, 2002). The researcher sent out emails during the period 3rd of June to the 1st
of October. Responses were received from all of them and they were more than happy to be selected for the project. A total of 5 men and 3 women responded and agreed to be interviewed for the study. Subsequently, the researcher recommended a meeting with interviewees at their workplace so that interviewees would feel comfortable in their own work environment (Kristjánsson & Halldórsdóttir, 2003). To earn the trust of the interviewee, full confidentiality was promised. The names of the participants were not mentioned in the study. These issues were reviewed at the beginning of the interviews to increase trust between the interviewees and the researcher (Óttarsdóttir, 2013).

Table 1 describes the interviewees and gives a clear image of their job title, their role within the organization and the number of employees they manage.

<table>
<thead>
<tr>
<th>Job title</th>
<th>Interviewee</th>
<th>Managing number of employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Manager in Control and Analytics</td>
<td>Recruited to the company to develop a new department. Possesses considerable experience in decision making.</td>
<td>4</td>
</tr>
<tr>
<td>II Director of Global Business Services</td>
<td>Leading the department which improves processes, IT systems, and Data. Has extensive knowledge of the organization and its processes. Runs large projects globally.</td>
<td>20</td>
</tr>
<tr>
<td>III Managing Director (EVP) Fish</td>
<td>In charge of the whole Fish operation. Closely working with managers from all of the other departments. Engineering and computer science background.</td>
<td>unknown</td>
</tr>
<tr>
<td>IV Director of Commercial - Strategic Accounts</td>
<td>Managing policies and processes. Works closely with other managers regarding decision</td>
<td>9</td>
</tr>
<tr>
<td>V</td>
<td>Master Scheduling and Planning Manager</td>
<td>Controls loads into production. Has extensive knowledge in scheduling and planning of products and services.</td>
</tr>
<tr>
<td>VI</td>
<td>Human Resource Manager</td>
<td>Responsible for all Human Resource services in Iceland. Provides consultancy and strategic partnerships with managers.</td>
</tr>
<tr>
<td>VII</td>
<td>Manufacturing Team Leader</td>
<td>Skilled machinist and foreman in the workshop. Responsible for staff management and production operations.</td>
</tr>
<tr>
<td>VIII</td>
<td>Manufacturing Team Leader</td>
<td>Very skilled team leader. Possesses considerable professional experience and knowledge in his field.</td>
</tr>
</tbody>
</table>

### 3.6 Validation and reliability

The researcher maintained neutrality from the beginning to the end of the interview research to ensure the quality of the research as a whole. The main objective was to gain the interviewees' opinions and perspectives on the matter. The researcher closely reflected the responses and reactions of the participants while conducting the interview. The researcher made sure that the interviewees were clear on what was being asked and if they had any problem understanding, questions were clarified and further explained. The researcher was willing to ask further questions, apart from the prepared questions, to gain more insight into the topic. The interviewees' opinions and perspectives reflect their own views. The researcher must, therefore, be cautious while considering the information as the absolute truth (Bryman & Bryman, 2006).
The limitation of the study, first and foremost, is that only one predetermined organization was researched and therefore reflects only that organization. The researcher also interviewed only eight of their decision-makers, which limits the researcher to only their views and perspectives, not the organizations as a whole. The objective of the research was to gain insight into the views and perspectives of each individual decision-maker and examine if there were any comparisons among the organization’s decision-makers. However, the researcher knew beforehand that the topic only applies to the perspective and views of each individual decision-maker. The results, therefore, do not give a comprehensive picture of the organization as a whole as the researcher would have liked.
4 Study results

This chapter discusses the results of the study. A qualitative study where the view is generated by a thorough review and analysis of the interviews will be presented. The themes and coding chosen are explained and cited directly to the interviewees to give readers a better insight into the views of the interviewees. Three themes have been identified in the interviews; *effective communication*, *decision-making guidelines*, and *awareness of psychological traps*. Two of the three themes have sub-groups. The theme *effective communication* has two sub-groups; *collaboration and participation* and the theme *decision-making guidelines* has two sub-group: *procedures and processes*.

The objective of the study was to find answers to the four initial research questions that were asked and are as follows:

1. Are models of individual decision making related in any way to models in group decision making? And is there a model that relates to them both?
2. Is there a difference in how managers perform an individual decision-making process versus a group decision-making process?
3. Do decision-makers tend to follow procedures and processes in decision making or do they rely on experience and intuition? Does it differ in individual decision making versus group decision making?
4. Do corporate decision-makers fall into hidden physiological traps in their decision making?

The purpose of this study is to explore if there is a difference in how managers perform individual decision making versus group decision making, if methods of individual decision making are related to methods in group decision making and if there are methods related to them both, if decision-makers tend to follow procedures and processes in decision making or if they rely on experience and intuition and if it differs in individual decision making versus group decision making, and lastly, if corporate decision-makers fall into hidden psychological traps in a decision-making processes.
4.1 Effective communication

Effective communication between decision-makers and their colleagues is an important aspect of a decision-making process. Decision-makers must inform individuals who are influenced by the decision and seek advice from colleagues in order to make informed decisions. Lack of communication with colleagues can easily have a negative effect on the process as a lack of information can make the implementation of the decision-making process harder. Collaboration and participation are therefore a necessary aspect in a decision-making process.

4.1.1 Collaboration

Collaboration between colleagues is arguably one of the most important aspects of today’s organizations. Managers seek collaboration between departments in order to get views and perspectives of others to make a more informed decision. Especially if that decision affects more than one department at the organization. Methods in both individual and group decision making, such as the rational approach in chapter 2.3.1 and the inquiry versus advocacy approach in chapter 2.6, make it clear that collaboration between colleagues is a major factor in a decision-making process.

Participant I believes that collaboration between managers is important when making decisions. She is a manager in control and analytics, and she was recruited to the organization to change decision making from a rather hierarchical structure to more of a teamwork structure: “Our aim was to work more as a team and abort this hierarchy structure, always as a team and everybody has to perform,” and “we are all just working towards our professional goals and they should seek advice from the team when they need it.” She works closely with others in order to change the structure: “I work closely with other departments within the company, the industry, other functions, etc.”

Participant I also believes that decision-makers must inform others: “We are changing the way we work, especially regards to reporting. Everybody is informed.” Participant I mentioned that she is responsible for organizing a management meeting in order for everyone to be informed: “We have a monthly review meeting with the management team which I run. All of the functions are involved.” She mentioned that overseeing the management meetings has given her valuable experience: “I think it is a great position. You get to work with different executives with different management styles and I really enjoy absorbing that,” and “I think it is really interesting how different people work together.” Participant II, who also leads a department on improving
processes at the organization, has similar views on collaboration between decision-makers: “We are improving ourselves at a professional standpoint. People are following our ways of working,” and “…we are working on improving our processes.” Participant II also believes that it is important to effectively inform others who the decision affects:

Once we have decided on it, I think is about how you inform others. Do you inform in a group or do you inform individually? Like how do you get people on board for the change, how you introduce it like to the whole organization and then how you follow up on it.

Participant II adds: “…it is really about communication like, who do you tell what and when? And then how do you follow it through, you know? So, I try to check with people after decisions.” Participant III agrees with participant II on informing others:

So, there are a lot of stakeholders and that can slow things down and you need to make sure that everyone is involved. Sometimes you need to move fast, and you just need to make a decision. Then afterwards you can apologize to the people you didn’t talk to.

Participant III is a managing director and works closely with managers from several other departments. He believes that collaboration between managers at the organization is quite strong: “We need to act as one team. I feel like we are one and that is what we are basically trying to echo out there, that we are one team,” and “We have been working on this process. You are always fine-tuning and maybe we have not mastered it yet, but we have made improvements to make sure that we are all in it.” When he was asked what knowledge is required in his position he answered: “…people skills and working with people is crucial.” This gives a clear image that collaboration is indeed a major factor.

Participant IV also works closely with other managers regarding decision making, policies, and processes. He believes that his collaboration with others has a lot of influence in the organization: “I have a lot of influence within the company. I work closely with managers that are managing 50 people or more and I work with them regarding decisions and policies.” He also mentioned, the same as the other participants, that informing others of the decision is important and something that decision-makers at the organization must be aware of:

You also have to answer to all of the stakeholders. It is very difficult if you have all of the information and you make a decision but then the one that has to implement the decision is not involved in the decision. By just telling someone
what to do can actually be conflicting so you need to have everybody involved that it affects. I am not for top-down decision making but rather it has to be done in a team. It is difficult if somebody makes a decision and the people that are not involved then have to implement it, it only leads to it being not implemented very well. So, it is necessary for people to participate to see how it is done.

He addressed this fact even further and explained the importance of both involving others and more importantly, implementing the decision after it has been made.

And one thing that is important is that it is one thing to make a decision and another is to fulfill that decision. I have seen it many times that a decision is made, and everybody is happy about it but then you revisit it one year later and it was not done. In my area, we have more like policies and I think that in those cases that is very important that you involve all of the stakeholders. So that is definitely a very important factor, stakeholder management. Sometimes you just need to make a decision that people are not very happy with but then if you make a decision that people are happy with then it is important that you involve them and inform them with calls and explain what is lying behind it.

Participant V is a master scheduling planning manager who has extensive knowledge in decision making and she believes that collaboration very is important: “...it's really important also to get consultancy with someone else, just to make sure. I think communication is really important,” and “Communication with other employees, other departments, and others related to the production.” Participant VI agrees on the consultancy as he is usually the one that provides it to other managers: “...we do this kind of admin service like the handle of information and helping people and there is also consultancy and strategic partnership with managers.”

Participant VI works closely with managers in decision making and provides them with information, consultancy, and strategic planning: “...decisions sometime have to be done in consultancy with both the industry, management, and also the function management.” and “I am asked to perform some services and I come up with suggestions, which I think is the best solution for the organization to implement.” He mentioned that the culture at the organization is very collaborative driven:

There's a culture of getting a second opinion on decisions before you make them. You are encouraged to ask and get guidance. There are a lot of very clever people around, even not in your specific field. You can always ask; can you advise me for five minutes?
The participant said something interesting that contradicted the answer of Participant I regarding the hierarchy at the organization: “…hierarchy is not a burden here, you have a certain overlap of responsibility.” This is different from the answer to Participant I because her view was that there is too much hierarchy. However, he agreed on collaborating and involving others: “…you just make sure that the people who are overlapped on the decision that they are involved,” and “…these are the people who need to be agreeing on the decision.” He also mentioned the importance of involving stakeholders, the same as the other participants: “…there is this kind of when you are facing a decision, then you do like a stakeholder analysis, who should be involved in making the decision? And who should be informed? This is very important.”

Participant VII is a team leader in manufacturing, and he is responsible for staff management and production operation. His role as a manager differs slightly from the others but his views on collaboration and involvement are similar:

There is production control. They are marking how the production behaves, procedures and other things. It is often taken in accordance with the teams or those involved. This is usually done this way. We came up with some ideas and we work together. Then we get it to who is involved.

Participant VIII has a great deal of professional experience and knowledge. He was hired to the organization as a captain to lead. He is also a manufacturing team leader as participant VII, they have similar views on collaboration: “we have cell meetings where two 19 people groups and 21 people group meet. We always hold cell meetings twice a week and there the group discusses minor topics but just discussing and having fun and stuff,” and “…the philosophy is that you get a machine, and everyone should take part in it and then it is put in a container.” He also mentions that changes are discussed and made by the manufacturing team leaders rather than an executive just deciding for them:

We always meet, two captains and production managers, once or twice a week and discuss things that can be better. If we see that something needs to be changed then it goes to the managing director and he joins us in a team. It can go both ways. There is no one who comes down to the floor and claims to change things.

All interviewees agreed on the importance of collaboration between managers. Despite the consensus of the interviewees, they give collaboration varying degrees of
importance. Another element in the communication factor is the participation of managers and employees in decision making.

4.1.2 Participation

Participation is something that every interviewee mentioned. They all mentioned that the culture of the organization is that everyone is open and willing to participate in a decision-making process. Being a part of it gives them a sense of pride and importance as they are asked to share their views and perspective on the important matters at the organization. Participation is a major factor in group decision-making theories, such as the Carnegie model in chapter 2.5.2 and inquiry versus advocacy approach in chapter 2.6 because decision-makers get to share their views and perspectives on decisions that increase the likelihood of well-informed decisions. However, in some circumstances perhaps too many participants decrease the efficiency of decision making.

Participants were asked what their views were on participation in a decision-making process such as how many usually participate, and if managers find it difficult to get other employees to participate in decision making.

Participant I mentions that she is part of many teams across the organization: “We have all of these kinds of teams. In finance, we have the financial leadership team,” and “This team consists of 12 people or something, or maybe not that many, we are working on a limited amount of people because we are reorganizing the finance.” She even mentions that this team may even be too big in some circumstances:

I don’t think that 12 people in a group are a good field to take small decisions. I can influence that, and I also feel that you can influence a lot by just asking the right questions and also because we have these review meetings, you can use that as a field to ask and address things.

She has a strong opinion that too much participation in some decisions can be very inefficient: “We run things too often by everybody and in that way, we can be a little inefficient in small decisions. I would say that there is room for improvement,” and “I think that we also tend to include everybody and get everybody’s view so the decision making takes more time than it should. I think that we could change that.”

Her view is that things can be a little too complicated. She was recruited to this new department at the organization to improve these processes: “…sometimes I think we are over analyzing things. If it is wrong and you encounter new problems, then you could
come back to the decision. I think we could work a little bit more like that.” However, they are on the right path to improving this:

We are trying to make it clearer. I think that we are heading in the right direction. This is just a problem that you will always have at a big organization. You are constantly improving so I think that it is just a process that we haven’t finished.

She even mentioned that other managers at the organization have the same view: “I think that my feeling is like some people give up on things and just make a decision. So, I think that many people here have identified that groups can be too big. So, we are working on changing that.” When asked if she had any difficulties in bringing in other colleagues to participate in a decision-making process she answered: “No, I have never gotten that feeling.”

Participant II believes participation in a decision comes down to the magnitude of the decision: “…that's like magnitude, I would say. So, like because we have like a matrix setup, the more parts of the matrix something will touch, the more you need to bring people together,” and “Things that are large in magnitude, and things that would be like politically sensitive, touch many different parts of the organization.” When asked about how many people usually participate in a decision-making process she replied:

It really depends, I would say there's usually like two or three key people. If it's like a large magnitude one, then you'd have multiple people, I would say there might be six people in the room. But it's really only two or three that really matter. But the others are there, like, because they also have a part in it, you know, but there's usually like two or three key decision-makers that have to make a decision.

She believes that you have to earn the respect of your colleges to get them to participate in your decision making, otherwise, you might have a hard time getting people to participate: “I don't think it's difficult to bring people together, getting them in a group to make a decision can sometimes be difficult,” and:

I think like if you have already proven yourself and your position in the organization, and like, people respect you and think that you, like, are only going to bring up the serious topics and not the ones that are, like, not important and things like that, like, they will show up to take the decision.
Participant III mentioned that it is important that participants in a decision-making process must have clear tasks:

I think you need to make sure that the people in the decision-making process have something to say about the topic. Then once you’ve made the decision, then they are accountable. If you have people that are not connected, then I would say that we're not benefitting. You need to look into why you have these people around the table. If there is no input or knowledge, then we don’t need them about that specific topic. You would be slowing down the decision process.

He believes that it is very beneficial to have a great team that he trusts in decision making: “...it's crucial to have a strong team so you can count on their knowledge as well. So, if I am unable to do something then I can trust them making it happen,” and “...sometimes you need to trust the people around you and just go for it.” When asked if this was the culture at the organization he replied:

Yes, definitely there is a trust within, it is always growing. People know each other better and better. They know the strengths and weaknesses of each other so we know basically you can do it. Just making sure they're working for the organization so it just a common benefit of the company, we are not jeopardizing anything.

Participant IV agrees with participant I on the difficulty of having too many participating in decision making: “...if there are affectively more than seven people in a decision, then it gets more difficult. That is discussed more among others at the organization. This is something we have found out by feeling or something like that.” He agrees with participant II on that it is important that each participant has a task: “you have to identify the people on how they are related to the decision. Like are they just consulted, informed or they responsible and accountable for the decision.” When asked how many usually participate in a decision-making process and whether he finds it difficult he replied: “the organization is quite open and the culture here is that if you need someone to take part in a decision then that is not a problem,” and “...nobody has ever said that they don’t want to be a part of a decision,” and regards to the participation: “it could be anywhere from 2-3 person to more than 10.”

Participant V believes it different for each decision: “That is different. I mean, sometimes just me, sometimes me and one, and sometimes more. I mean it differs based on the project.” When asked if she finds it difficult to get colleagues from different
departments and how many usually participate, she replied: ”Maybe two to four, sometimes more, but I would say two to four. When the decision is made, but in the discussion have maybe been between more people than that,” and ”No, it is not difficult. It's quite easy. Everybody wants to be involved, basically, it matters to them.”

Participant VI agrees with participant V that its different depending factors such as urgency and time: “…it depends on the urgency and the size of the decision. If it's a strategic decision, you involve more people,” and “Sometimes it’s like if you don't have much time, you have to make a decision.” He believes that participants take great pride in being involved in decisions: “People love it when they're asked to be involved in fields and decisions that are maybe not directly related to their expertise. And if they are asked as consultants or stakeholders, they're very happy.” However, he also mentioned that being a participant is part of their job:

Most people have that as a part of their contract, that they can be working for the organization globally. So that's written very clearly in their contract that they can expect to be asked to do some projects, not only in their specific field.

When asked if someone could deny taking part in decision-making processes he replied: “Well we always try to, you know, try to find a compromise where someone sees this as an opportunity to grow,” and “…flexibility is a very important part of being an employee at the organization.”

Participant VII views participation as creating a team with people he believes will do their best: “We create a small working group around the project where we select people who we think will solve the project best. Usually, we do all our tasks that way,” and “If I have a person who is good at this and could lead the group, then you choose depending on that. So, in all groups, there are individuals who are open to change.” He believes that this occurs as well in other organizations: “All companies have individuals who are more positive about change than others.” He believes diversity is a major factor when choosing participants in a decision-making process:

We are trying to have the most diverse groups and trying to have from each department. We have electricians, mechanics, purchasing, sales and everything mixed and working together. It is often in big projects that we try to get production to be among the most active. Formulate a specific strategy and what we want to do and how we want to work.
When asked if he finds it difficult to get other colleagues from different departments to participate, he replied:

There are selected individuals who are known to be positive and ready for such a project. It is just like this in all companies. They have someone who says no and they are not selected in such a project. Usually, people, those who have been confronted with this, are ready for this task. People are not forced into this.

Participant VIII believes that people are very positive about participating in a decision-making process and he does not find it difficult to get others to participate: “...if things need to change, then employees from across the company are called in. There is never an issue because usually, everyone is up to it.”

Participation and collaboration are major factors in a decision-making process, especially in group decision-making processes. All of the interviewees agreed that these two factors are very important, however, they give them varying degrees of importance. They all agree that collaboration at the organization is good and that employees and managers across departments are very willing to participate in decision making.

The interviewee research findings in the two sub-themes above answers the first research question. Collaboration and participation are important elements in both individual and group decision making models, especially in the rational approach, which applies strongly to both individual and group decision making, as stated in chapter 2.3.1. The model states that a decision-maker should collaborate with colleagues in order to get a second opinion before deciding and if possible, participate with colleagues in order to gain more views and perspectives on the issue.

4.2 Decision-making guidelines

Decision-making guidelines is the second theme in the study. The theme describes the difference in decision-making procedures and decision-making processes and whether the organization has written procedures and processes for its decision-makers to follow. The two sub-groups of the theme are procedures and processes.

The main objective of the study is to examine if the organization has procedures and processes that their decision-makers tend to follow. According to methods such as the rational approach in chapter 2.3.1, the bounded rationality approach in chapter 2.3.2, the incremental approach in chapter 2.5.1, the Carnegie-model in chapter 2.5.2, and the inquiry versus advocacy approach in chapter 2.8, organization must have known and
written procedures and processes for a decision-maker to follow in order to be efficient in both individual and group decision making.

### 4.2.1 Procedures

Procedures are used as guidelines for decision-makers to follow while deciding on important matters at an organization. Decision-makers follow these procedures in order for a decision-making process to be successful. This applies to both individual and group decision making. However, the importance of the decision decides whether procedures are well known and written at the organization.

When participant I was asked if there any procedures at the organization regarding how managers should make decisions she replied: “Yes, of course. It depends on where we are located in the organization. For example, if there is a big project then you need to go through a separate process and get approval.” She gave an example of a decision which has a formal procedure that they always follow: “…we, of course, have these formal procedures for decision making such as bonus targets which are run by numeration committee, the board and etc.” She mentioned that the culture at the organization is such that decision-makers never feel as they do not know what to do:

   In my view, at the organization in Iceland, you are very independent, you can make your own decision and I would say that I have never been in a position that I need to make a big decision and I did not know what to do.

Participant I was asked if there is any difference in procedures regarding programmed and nonprogrammed decisions and she believes it differs from the magnitude of the decision:

   I will form an opinion and tell the CFO what I think and then run it by her. That is not a formal process. If the investment is not that big, then I could do it like that. If it is a huge amount, then you need to run it by others as well.

When asked if she could change producers at her department she replied: “Currently I am in the position of developing the strategy, that is my job description,” and “…it must connect to the overall strategy of the organization and support that.” She believes that there are procedures on how to carry out a decision-making process. she replied: “…there is a process for all of the major decisions, and I think there are good and strict procedures on that.”

Participant II believes that her position is strong at the organization regarding processes and procedures: “I generally know how all the processes at the organization
work. I know all the key part players and that type of thing. I have a very birds-eye view of everything, and I can dig into the details.” She believes that there is not a procedure that says how you should decide because it differs between managers how they view things: “I mean there is not a policy out there to say how you should make a decision you know, and everybody personally would always take it differently because they are going to weight different factors differently.” When asked about if there are different procedures when it comes to programmed and nonprogrammed decisions, she believes that it all comes down to information:

I make sure I have all the right information available for her because the idea is that she gives a yes or a no and does not ask any questions back. I should provide all of the information. That is how I would generally do it.

She addresses the importance of gathering information even further and mentions the importance of getting the right information:

I think it is really important to, like, to get the right amount of information to understand the problem but not get too much information so that you are totally sucked in and spend a lot of your time on it. It also depends on the severity of the importance of the issue.

When asked if there are written procedures on how to carry out a decision-making process, she believes that there should not be a document on how to take a decision: “I don’t think it is very commonplace that you would have general how to take a decision type of document, at least from my experience.” However, she mentions that they do have formal procedures on programmed decisions that occur exactly the same way each time:

There are quite a lot of these, like more informal decisions where managers based on their experience, like, come to a decision, which is then would not be the same as to the person next to them would make. For the more formal large magnitude and something like that has like a whole season procedure that we follow.

Participant III agrees with participant II on that there is not a document that says how they should make a decision: “I have not come across how we should make decisions. There is not like a guideline on how you should make decisions.” He also agrees that gathering the right information is what truly matters:
But of course, you want to make informed decisions. That's just the way we are wired, and we are always trying to make the best decisions as we can, based on the information that is out there. If we don't have them, then we definitely try to gather them and build up our view and our understanding of the task. And then we basically assess and make the decision.

His views on procedures regarding programmed decisions and nonprogrammed decisions were such that programmed decisions are always the same, such as job hiring while nonprogrammed decisions are more of planning into the future and how they can improve such as increasing their revenue in the next few years.

When asked if there are procedures regarding how they should carry out a decision-making process he replied:

There are all kinds of processes in the company that we definitely need to make sure that we are following and then on the exact decision, then I would say that you are allowed to at least bring your intuition into the discussion and the final decision making. I would say it is both; it is a combination.

Participant IV believes that there are procedures on how decision-makers should decide: "There are critical points when we have to make decisions, and they are mapped. It is decided beforehand who is responsible for the decision." However, he agrees with participant II that it differs between decision-makers how they decide: "There are executives that have certain rules and they view things in certain ways." He agrees that there are different procedures for nonprogrammed decisions and programmed decisions.

He believes that the main difference is that programmed decisions are short-term while nonprogrammed decisions are more long-term:

The difference between is in strategic planning (nonprogrammed decisions), you are looking 3-5 years into the future while operational planning (programmed decisions) is planning on what you are doing next year. You have to start with the strategic planning because you can’t complete the operational planning without the strategic

He had a strong opinion when asked if there are any written procedures on how to carry out a decision-making process. He believes that it is up to managers to perform it successfully:

These things are quite well documented, like everything else, we always feel that we can have it better. You are never in a situation where you feel that it is
Participant V agrees with Participant I that it depends on the decision whether there are written procedures on how a manager should decide: “Yes, there are procedures and they might be different whether and what decision needs to be made.” She believes that the main difference between procedures where the decision programmed and nonprogrammed is that there is more consultancy in nonprogrammed decisions: “That’s a decision that I would need to consult and discuss with the managers, my manager, and make the decision. I will make the decision myself but in relationship with my manager,” and “It is more of a team decision making.” She agrees that there are procedures written down regarding how a decision-making process should be carried out: “We have written down procedures for a lot of things and on most decision making. But decisions that we need to make, they are written down and procedures are on most of them.”

Participant VI agrees that there are procedures on how managers should decide. He believes that they are well thought out procedures and that managers should use them as guidelines:

There is this kind of structure that frames how we are supposed to make decisions. The vision and the mission are the most important guidelines in decision making. Then we have all kinds of procedures on detailed ways of making decisions and, and the organization has been quite substantial, I would say, in producing all those detailed procedures.

He addresses this even further and believes that these procedures are a managerial handbook with guidelines for each procedure as procedures could differ depending on what is being decided. However, managers should also have their freedom in decision making:

So, these are all laid out there in quite a detail. And so that is like guidance that the manager has, and we have like a management Handbook, to gather all these procedures that are regarding the management role of the manager. So, each manager has both, like substantial or substance role in the sense that he might be a specialist and is always seeing the operations of that field, making decisions on
that and then outside of that, also people responsibility. Those are the procedures that are more like general or sometimes global. But that's also an important part that we have. Even though we are a global company, we have to adapt to local, both, of course, law, but also situations like the market here is different than other countries. So, decisions are made, sometimes in a different manner. Other than that, a manager should, you know, they have the freedom to make decisions, which they find it according to our stats.

He believes that procedures on how managers should decide are in the best interest of managers because then there is a coherence in the decision making at the organization: “It makes sense to make a procedure, also to make sure that there's a coherence between how, both with we how we treat people and how we find the best solutions to a problem.” When asked if they had procedures on programmed decisions, he says that is exactly where they should have procedures because those decisions occur repeatedly: “Those are typically issues where you have a procedure. There is a procurement department, and like a procurement way of doing things.” While procedures on nonprogrammed decisions are more about finding different ways of doing things and agreeing on one:

Usually, when I, for example, approach an unknown problem, I have found out the best way for me is to analyze the problem and come up with maybe three alternatives and recommend one. Then usually that's the one, the way we do it. The process is scrutinized, the problem is known and has been laid out and what are the consequences or what's happening and then also, you know, someone who is approving. My boss is comfortable because she can see that I have tried to find out alternatives and then made a decision based on that. That's usually also how I like my people to work.

Participant VII agrees that procedures on how decision-makers should decide depend on what kind of decisions need to be made such as large investments and employee issues: “Yes, there are quite a few rules of procedure in relation to, say, employee issues and also in connection with larger investments and such.” He also mentions that it depends on the magnitude of the investment: “If the investment goes over that, I do not remember exactly what the number is but if it goes over, it has to go through the global process.” While other nonprogrammed decisions are a part of the global strategy that has already been shaped: “In the context of changing policies, this is all taken at the highest levels.” and “It has been shaped over a long time, however, you understand if any
emphasis is made then it comes from there.” When asked if they had any procedures regarding how to carry out a decision-making process, he believes that there is, but he is not quite sure: “I am not sure, because it may not exist, but it may well be. Of course, there are certain decision-making procedures for certain things. Whether they exist in a database I just do not know,” and “There are certain procedures, but I don't know if they are in the manuals because there are millions of manuals.” However, he thinks that it is not always possible to follow these procedures literally step by step because decisions can be different:

People try to follow the processes. But I can't say that it is always followed step by step or how it should be. It's not always that way; it's not all possible. Some things may need to be a little different, but they usually try to follow procedures if they exist.

The participant explained how he uses these procedures as guidelines rather than a process that he follows every time. He believes that you can get into trouble if you do not take the current situation into account:

I always put a question mark when something has been nailed down because it has always been so. But of course, it is good to have, and it is necessary to have certain guidelines. It can be very difficult if you are going to follow it, how to behave and then you can even get into trouble because this is not always so. I look at processes as guidelines to follow, it is not always the case.

Participant VIII believes that there are no written procedures but rather rules that he follows: There are no documented procedures, but a procedure is followed, we are in production and we set rules.” However, he agrees with participant VII that it really depends on the magnitude of the decision: “if a big project or tool is needed in place, we look for next year’s plan and make a plan for it there. In that case, approval from the board is needed.” When asked if there are written procedures on how to carry out a decision-making process, he believes that there is not in his department: “Somewhere else in the company for sure. Not with us, as I said before, we are very free when it comes to workflow.” He agrees that there are some procedures but mostly regarding employee relations: “Everything with a human element has rules and things like that; it is so much more that people know what they are doing and what is expected of them. Therefore, you just have to push in the right places.”
All interviewees agree that there are probably some kinds of procedures on how managers should decide and how to carry out a decision-making process. However, it differs from the importance and magnitude of the decision making. Some participants tend to follow procedures while others believe that they are just following the rules of their department.

4.2.2 Processes

Decision-makers are encouraged to follow certain processes in their decision making as it can help them make better decisions. Decision-makers also have their own processes whether they are deciding individually or in a group decision. These are usually step by step processes that they have adapted with their experience and their own intuition. However, these processes may not be the same whether they are in an individual decision-making process versus a group decision-making process.

Methods in individual decision making such as the rational approach in chapter 2.3.1 and the bounded rationality approach in chapter 2.3.2, may differ from methods in group decision making such as the incremental approach in chapter 2.5.1, the Carnegie-model in chapter 2.5.2, and the inquiry versus advocacy approach in chapter 2.8. Methods such as the rational approach can be applied to both individual and group decision making. However, most decision-makers do not necessarily follow any certain methods in their decision-making processes and rather base the decision making on experience and intuition.

Participant I believes that the organization has certain methods that they use in a decision-making process:

Yes, we have monthly review meetings with the management which I run. All of the functions are involved, and we go over forecasts, the outlook, and we talk about the business and etc. I think that if there are mistakes or that we have lost a big sale, then we often go through what we can learn from it. The management goes through if there were any mistakes made and what we can learn from that and avoid them the next time.

When asked if they base their decision making on pure statistical data or if they rely on experience and intuition, she believes that it is a mix of both: “...we are a big company and our employees have a lot of knowledge, so we always have to base some things on feelings and intuition. I would say it is a mix of both.” The participant was
asked to describe her processes, step by step, which she uses in a decision-making process:

If there is a problem, then you need to understand what the problems are and why it is on your table. It is really easy to get frustrated when you don’t understand what you are trying to solve; it happens to me all of the time here. I think that you need to understand what the problem is, then when you take the next step, then there could be an easy solution to it. Often people are asking for your decision because they only see one side of it. Then you just try to see the whole picture and make a decision based on that. You just have to analyze the problem, think of different outcomes and sometimes the outcome is just one. The key thing is to understand the problem or what the decision is about.

She was asked as well if there were any differences between how she carries out an individual decision-making process versus a group decision-making process. She believes that she does not: “No, in my team we work closely together, we sit together, and we run things by each other all the time,” and:

I usually ask them to make their own decisions and support them. I ask what they think the solution should be and how they would solve it. I often don’t tell them the answer but rather try to say to them that we can find it out together. When I make the decision then I inform them, and it is vice versa.

She believes that the main difference between individual decision making and group decision making is the size of the problem:

How to run a process for a company would be a matter that would be run by my team. But small operational matters that are included in the process, I could make those decisions myself. The decision-making process could be both individually and in a group. I would say the main difference whether there is an individual decision making or a group decision making is the size of the problem. And at what level it is discussed of course.

Participant II believes that they have a formal process on how to do certain things but does not think that they are following a certain method:

We have a formal approval process which, like, has templates that go with it so it is like somebody on my team fills out a word document which has a lot of different things and comes to me for approval and it goes back to them and then it goes to the committee so it is like there is methodology in a lot of the formal decisions because it is like we have a process where it goes back and forth to get
to that point where you get the formal decision. But for the informal like
everyday decisions, I don’t think that there is anything special from a
methodology standpoint just making sure I understand the issue and analyze it
and that I like to feel comfortable. I almost always get to the point where I am
100% confident in making the decision.

She agrees with participant I that they use a mix of both statistical data and intuition in
their decision making: “I think you're always going to use both. But I would say I use
more data than most. So, like, facts and figures are, like, quite important to me.” and she
believes that you cannot only use one of them and that both are very important:

I do think data is quite important for making decisions. And I don't think you can
only use data. I think you always have an aspect of intuition in there as well. But
I think you need to combine it. It needs to be like the data helps me do my
analysis. But the end decision will always be it will be taken by intuition, either
supporting the data or, or not supporting the data.

The participant was asked to describe her processes, step by step, which she uses in a
decision-making process: “It is probably the same processes whether if it is a small or a
big topic,” and:

I think it is always like there is a question that is brought, I always do analysis
and the level of it, of course, depends on the issues and how big it is, I, like,
make a decision which is I then I usually think about over a period of time so I
don’t send it right away or I use my boss to pre-approve or like a sanity check on
a decision and then I like send it out after that.

She was asked as well if there were any differences between how she carries out an
individual decision-making process versus a group decision-making process. She
believes that are benefits to both:

There is I would say, theoretically, there is a difference, because when you're an
individual, then it's like, all of your biases that are like going into making that
decision. And I do think in a group setting, the benefit is that you are getting all
different angles like a group can have more knowledge and more information
and enrich decision. At the same time, a group can also take much more time and
cannot come to a decision.

She addresses this even further and expresses that she is more comfortable in
individual decision making rather than in a group decision making:
I myself am probably more comfortable making decisions in an individual setting than in a group. But I do recognize that a group has quite a lot of benefits in terms of, like, seeing things from different angles and getting more information about the decision and different factors you should consider, etc.

She believes that individual decisions are day to day decisions while group decisions are larger in magnitude: “Individual would be, like, personnel, more like human resources type of aspects that you have to take decisions on,” and “For group decisions, it would be like more of the larger thing. So, it's, like, either more of the larger things or the more politically sensitive things.” She addresses the group decisions even further and mentions the importance of teamwork:

Group decisions would be for more the self-side, the political aspect like that you really need to get these people on board after the decision is made. So even though I can make it on my own, it's much more beneficial to have them all realize and make it together, because then they're more willing to just follow through with it, you know, because they feel like they really were part of the decision. And it's like something that they decided.

Participant III agrees with participant II that they have a process in decision making but do not believe that they use a certain method: “I don’t think I have a special method. I think that is knowledge and the insight, just to know where the industry is heading and what is happening out there.” He was asked to describe his process, step by step, which he uses in a decision-making process:

The process is basically is just you need to gather all the information and to try to see the big picture. Like what is it that I need to actually make a decision on and then once you have that, then you can see if there are some stakeholders involved or maybe some other people. You put them in and basically, you make a decision with relevant people. It is like that in a simplified way.

He was asked as well if there were any differences between how he carries out an individual decision-making process versus a group decision-making process. He believes that groups make better decisions:

I think that the risk with the individual one is that you could just jump to a conclusion. You think you know it and you just do it. With the consensus when you have a team, especially when you have a team that has the same vision, different views, and etc. Then you make better decisions. I have been coaching if you go into coaching. I think using that methodology, just asking questions such
as why and how. Then you start to see it from different angles. Because you always have your view of the world and once you start asking questions, and you start to see different perspectives. So that definitely helps the decision-making process.

However, he also mentioned that there are benefits to individual decision making: “...it takes less time and it goes faster. You can make things happen really quickly and if they are right then they definitely can be a benefit. Definitely, the pros are the speed and the time.”

Participant IV does not believe that they use a certain method in their decision making. However, he believes that they have a formal decision-making process. Their decision-makers must fulfill requirements before moving from one step to another: “There are certain things that you have to do before you take the next step in a decision-making process.” He explains this even more:

You cannot go to the next step in a process unless there are certain criteria that are met. That just how it is normally done in a business process. There are certain requirements that need to be fulfilled before you take the next step. There is no one certain method that is used when doing that. It just depends on what are the steps you are taking in that process.

He was asked to describe his decision-making process, step by step, which he uses while deciding:

First of all, you have to identify that there is a potential challenge where something has to be changed. I don’t think you make a decision just to make a decision, there has to be something on the line. Sometimes it is called starting points, we need to have something behind the change you want to do. You have to identify a problem, you have to gather information, you need to have good knowledge about it, involve the stakeholders and involve the right people for the decision and also the people that get the information. Like somebody will not make the decision but we want their input into the final decision making. Then you are a part of the team though you are not making the decision. It is also important that the right people are making the decision. The last thing is like making sure that you confirm the decision, and everybody is aware of it. You might think that the decision is made but not everybody else was on the same page.
He was asked if his decisions were based on statistical data or on experience and intuition. He agrees with the other participants that it is a mix of both:

For me, this is the same. The experience is data that you get from the people that are experienced. You have to have both and sometimes you can get experience from others by getting information from the internet or consultancy.

He also agrees with other participants that there are a lot of benefits to doing group decision making. He also believes that decision-makers should never decide individually: “Yeah, there are. I could say that you should never do any individual decision making. Everything should be in a group.” He also believes that it is important to involve someone else, which makes it group decision making:

Let’s say that there is an individual decision making and there is somebody that is really affected by that decision but is not involved. And maybe he doesn’t agree with that decision. For me, that decision is never going to work. I would say individual decision making is not really going to work. I think you always have to involve stakeholders. A stakeholder could also be a customer and a decision should never be made without involving the customer.

He addresses this further and even argues that group decisions can be viewed as an individual decision if the final decision is made by only one individual.

I also think that in group decision making, there has to also be just one person that makes the decision there. Someone makes the final decision and is accountable for that decision. For example, if there is a group decision and you don’t reach a decision then he has to find other solutions. So, I could also say that there is no group decision making if there is always that one person that decides.

Participant V believes that their methods in decision making is just regular communication: “Yeah, it is usually communications and emails. Yeah, I would say that.” She was asked to describe the process she follows in her decision making: “If the decision needs to be made regarding change of delivery of a project, we have then been informed about there is something wrong in production face with engineering,” and:

There is then a delay in the project which they need to communicate with the end customer. So, there are steps that we need to take, and we can delay changes. It is not in every case that we need to delay but we also have to inform about the changes that need to be made and it might affect delivery. So, there are those
steps that we usually are doing every time. This is based on a process that we have.

She was asked if there is any difference in how she carries out an individual decision-making process versus a group decision-making process. She believes that the main difference depends on the magnitude of the decision: “I would think that going into too many details on the decision making. If you are having one person instead of a group, I think in general that it's usually different. Of course, it depends on what it is,” and “The more it affects people, the more people are involved.”

Participant VI believes that they have several different methods to use in a decision-making process and that there is not necessarily just one way that works:

Well, there is stakeholder mapping for example. Drawing on a table the people who will be affected by the decision and also then think about the consequences and the scenario. Setting up different scenarios so that you can try to calculate what the results are of making decisions on different matters. So, there are, yeah, there are lots of methods. But I think that there is not necessarily one way, there are many tools that we have.

He was asked if their decisions were based on statistical data or intuition and experience. He thinks that intuition is just experienced based on statistical data:

The organization is a very data-driven company. So even though there is some we try to, you know, use as much data as we can. But intuition, actually some people say intuition is just building on the experience of using data. But yeah, I would say it's a data-driven company, but there's also a lot experience and the intuition is appreciated. But you have to, you cannot say just it's my intuition, you have to back it up with something.

He describes decision-making process thoroughly. He believes that it is almost the same every time:

There is a problem or there's an opportunity. Well there's some could say an opportunity. And then analyzing the situation, is the first thing, like, “What is the situation? What are the consequences of doing A, B, or C?” Like, one of them always being not doing anything. And then, of course, it's a different course of action. And then prioritizing when you think about the effect on the stakeholders, on the value creation of the company, long term and short term, and on how it affects employees, customers, and society as well.
He believes that the involvement and input from his colleagues is the main difference in how he carries out an individual decision-making process versus a group decision-making process:

First of all, in most of the cases, challenges, opportunities or problems are identified by individuals. So, then the individual has to decide, am I going to solve this on my own? Or am I going to involve someone else, and then it becomes a group decision. By default, some decisions are defined in such a way that it has to be a group. For example, there is this executive team and there are groups, you know. And there are other decisions, like macro, or micro-decisions that can either be made solo or in groups. The process, of course, it's different. In a group, you have to get input from everyone.

Participant VII does not think that they have any methods in their decision making: “We don't have any process that we use to analyze decision making. Nothing is used to do this. We use a certain process in the failure analysis but not in decision-making.” He also mentioned that their day-to-day decision making is based on experience and intuition while bigger investments must be based on statistical data: “When we make investment decisions we have to rely on statistical data and other things to substantiate our case even though we know this is correct and what we need, we still have to prove it with statistical data.” However, he mainly follows his intuition in his decision-making process:

This has always just been a natural thing; I don't know. At least I have never involved any kind of theory, I have always been guided by being reasonable but still determined. There are so many methodologies in management and a lot of methods that people think are right, but I do not know. I just follow what I feel is right and I feel good with.

When asked if there is any difference in how he carries out an individual decision making versus a group decision making, his opinion is that the only difference is the input from his colleagues:

Some decisions are such that it is better to have your team or a team you are working with and get them involved in the decisions so they can continue the project. Some decisions are just something you've decided. It's just different, I personally try to think that something that you want the group to work with hands-on or use ideology or whatever and then you bring the group along. But then, some decisions are something you just want to have this way. I as the
manager just want things to be this way. There is no democracy in it, but some things I just want it that way.

Participant VIII believes that they have their own method in their decision making which is called the cell-ideology:

The cell ideology is so we are jointly responsible for things being correct. No one can be at the forefront of the process, or in the middle or thrown to the back and say that someone else should do it. No one else does it but them, if you want to relax then your work just lands on others and is frowned upon. This is a constant arrangement.

When asked if their method is based on statistical data or experience and intuition, he thinks that it is a mix of both:

We may use statistical data and information but nothing much. It could certainly be that if one is doing the same thing every single day, something that is standard, then one can have statistical data on it. However, what we are doing every day is more difficult. Some data is always being created. We are constantly submitting data and projects and all kinds of things are recorded. What we submit forms a database.

He does not think that he has a certain step by step process that he uses in a decision-making process. He believes that his only process is that he makes decisions quickly and that he makes the team collaborate:

I am very quick in making decisions. This, of course, goes with such a job that I am in. They have made many decisions and it is because I control the production, all the dates have been set. The final day has been decided and when it is supposed to be ready for the tests, so all I have to do is push for everything to be ready, and then I might have to be annoying to someone here in-house. We are the last link in the chain, and it all depends on if things are going to go out on a certain day, then everyone needs to stand up and work together.

He thinks the main difference in how he carries out an individual decision-making process versus a group decision-making process depends on what is being decided on:

If it is about a problem among employees, then it is always discussed. It is never one person that decides what it is. However, as for the other, I do not really know what to say. If I have to buy something we need, then I just order it; that is the only thing I do in that matter. Someone else might stop the order without me
knowing. It might be something like that, but if we want to change the workspace then I do not need to get permission for it.

All interviewees believe that they follow some kind of method in their decision-making processes. However, they do not think that these methods are implemented beforehand and are rather just methods that they have developed with experience. Some of them believe that they follow the same processes whether they are in an individual decision-making process or a group decision-making process. They believe that the main difference between individual and group decisions are usually things such as the importance, the magnitude, and the need for involvement in the decision-making process.

The interviewee research findings in the two sub-themes in this section answers the second and third research questions as procedures and processes are major factors in both individual and group decision making. Decision-makers at the organization believe that they do not perform individual decision making differently from group decision making, and that they do follow guidelines, implemented by their organization, in their decision making. However, they believe that their decisions are based on a combination of their own experience and intuition and the processes and procedures at the organization.

4.3 Awareness of hidden psychological traps

Psychological traps are a phenomenon that influences how a decision-maker acts and thinks during decision making. These hidden psychological traps, such as in chapter 2.9, may affect how the decision-making process is performed and whether the outcome of the decision making is successful or not. Decision-makers are usually not aware that they have fallen into these well-known hidden psychological traps. Researchers believe that awareness is the best defense.

Participant I is somewhat aware of the psychological traps decision-makers tend to fall into in a decision-making process and believes that the biggest trap is feelings:

I don’t know, I think maybe somewhat aware just from past experience. My feeling is that the biggest trap is the feeling part. Few people admit it and say that they don’t know why they feel this way and etc. So, I think that it is often a very hidden trap. Also just drawing conclusions without having the whole picture.

When asked if she believes that she has ever fallen into some hidden psychological traps in her decision-making process, she thinks that she has probably done so:
Yes, when you are young and developing your career and you are maybe doing that for the first time. But it also depends on the environment that you are working in. In the past, I have made huge mistakes sometimes, but you feel the relief when you have told somebody about it. If you get the right support, then it definitely just strengthens you. I would say that my past experience has made me conscious that I make mistakes. That is what I have ultimately learned from it and if I didn’t make mistakes then I wouldn’t learn. So, I think that I am much more open about admitting mistakes and not being defensive. I think that the culture in the organization is that it is okay to make mistakes.

Participant II agrees with Participant I that emotions are often a hidden trap in decision making. However, she believes that she is aware of some of these psychological traps:

I would say that I don't like to think about them. In terms of, like, I have a list in my head that I go through when I'm taking a decision. But, like, I am pretty aware of these kind of things, like, especially when people are reacting, like, emotionally or, or when somebody is being very confident but doesn't have anything to back it up and can't answer any of my questions, like, these are types of things that I do think about quite a lot.

However, she believes that she has built a defense against them with experience and intuition:

I think about them, but I do think they're, like, just built into my, like, experience and intuition. There's not a textbook page that I make sure I reference before I make a decision or something like that.

She mentioned that it is harder to fall into hidden traps while in a group decision-making process because it is unlikely that everyone has the same bias as you:

There are multiple people reviewing documents. So, it's very unlikely that whatever bias you have is going to get all the way through the process. So, I would say in those cases, like you would be able to catch things and there are multiple eyes seeing things etc.

When asked if she believes that she has ever fallen into some hidden psychological traps in her decision-making process, she definitely thinks she has and that everyone else has also probably done so:

Sure, some point or another? I mean, everybody, like the decision I would make on a Monday might be different than the decision I would make on a Friday. It
just all depends on a lot of different factors. You know, that's why I think you need to be careful, time-wise, and how you make your decision, you know, you could be upset about something one day and make a decision, but the next day you wake up and you slept on it and you're, like, Okay, I see the light, this is how it should go, you know, I'm sure I have fallen into these traps as well.

Participant III believes that he is somewhat aware of these hidden traps, but he could improve in that area:

I could be more aware maybe. I think you can always improve but I think we know about social loafing. That is why I have been trying to build up the team I have. It is a diverse team with different characters and, gender. I am trying to get that all in so we are not all looking in the same way. You can see it because we have fruitful discussions and there is never a dull moment. At least there I am trying to make sure that we are making good decisions.

When asked if the organization has a method for their managers to avoid falling into these hidden traps, he does not think that they do:

No, we don’t have a formal test or anything like that. I think it is more like that we are talking about it but there is not a procedure or a process making sure that we are not falling into some of these traps. So, we don’t have that.

However, he believes that it would be beneficial to the organization if they had a method:

I think it would definitely be beneficial to have some guidelines. Something you can go by and follow. I think it could be just a reminder. It does not have to be a tutorial, just simple guidelines. I would say it would be absolutely beneficial.

He agrees with the other participants that he has definitely fallen into some hidden traps in a decision-making process: “Yeah, I think that definitely. Looking back when I made decisions, some of it was done with overconfidence etc. I think you can tick in all of them probably.”

Participant IV does not really think about these hidden traps in decision making but he is somewhat aware: “that is not something I think about. I have heard about it.” However, he believes that they are developing a method to avoid falling into some of these traps:

We are doing this like these 7 habits. And with processing, we are doing things clearer. We are not doing things ad hock; we are doing things according to a
mapped way of doing business. And by that we are avoiding potential traps, at least I hope so.

When asked if he thinks he has ever fallen into some hidden psychological traps, he agrees with the other participants that he and probably everyone else has done so at some point in time:

Yeah definitely, everybody has done that. But as I said it is not something that I think about. I don’t know any theory and I haven’t look into that. At least recently in something that I have been a part of. I think that in decision making, people are using more common sense such as experience and knowledge from others, rather than using some methods or a process in decision making. I think that maybe something that we should look into, to change that. I definitely think that it could help to have knowledge of these traps.

Participant V is not really aware of the psychological traps and does not believe that she has fallen into them in a decision-making process. When asked if she had a method to avoid falling into these traps, she thinks that it is important to follow procedures: “If you follow the procedures, then you should not fall into these traps.”

Participant VI believes that he is aware of some of the hidden psychological traps of decision making and believes he has a method to acknowledge and eliminate them:

I am aware of some of them. For example, in hiring, there are many known errors that people make such as the halo effect for example, and other traps that people usually, well like there is the possibility of illusion, and we try to acknowledge them, and be aware of them and eliminate them. Getting a second opinion and review, which is also this way of doing that. But I would not say that I would be an expert in knowing all the traps but there are all kinds of tricky issues that can be in the culture, structure and mandate. This sport can either hinder or encourage you to avoid those traps. If you're mastered as an individual, then you don't consult the group. If you get a bonus because of the group, or the group gets a bonus then you can use motivation theory to help companies to be more professional in decision making.

When asked if he believes he has fallen into some of these hidden traps in his decision-making processes, he believes that he has probably done so. He also thinks that they are developing strategies to avoid falling into these psychological traps:

Yeah, probably. I don’t know. Sometimes I don't even know about them. I think it's quite common that when you're alone, and you think alone, then you have a
tunnel vision. You only need to get someone in the room, and you start to explain it to someone else and you then realize that you forgot something. So yeah, of course, I think that's very common when you're alone. And even when you think that's probably something, I very much appreciate being like a very important part of this. Diversity is very important. You don't have to have the same type of people around the table. You have to have different types of people, different sexes, different opinions, different backgrounds, different ages. This is a very, very important part and we are pushing this strategy very aggressively now.

Participant VIII is not really aware of these hidden traps: “I do not know anything about it.” However, when asked if he believes if he has fallen into some hidden psychological traps and if they had any method to avoid falling into them, he had a stronger opinion on that:

Absolutely, and as the world becomes more complex about bullying, gender-based violence, sexual violence and all that. All that being said, there you can certainly fall into any pitfalls when making decisions in cases like those. Employees are trained and all managers at the organization are sent to courses. You can always seek help and no matter what, it is just one call or one mail. It is very well received. I think it is a very small matter to fall into traps where these things apply. It does not take much. We have access here both inside and outside the company to get help if there are these issues such as bullying, gender-based violence, and all those matters. That is very well taken care of.

All interviewees are somewhat aware of the hidden psychological traps in decision making. However, they give them varying degrees of importance. Some of them do not think about them at all while others believe that they are developing strategies and methods to avoid them happening. The interviewees agree that there is an overall awareness of hidden psychological traps at the organization.

The interviewee research finding in this last theme answers the fourth and final research question as the decision-makers at the organization believe that they do fall into psychological traps in their decision-making. However, they are aware of the situation and are increasingly developing strategies for avoiding falling into these hidden traps.
5 Discussion

This chapter will discuss the findings of the qualitative research reported in chapter 4 above and will be presented in the context of theoretical chapters and themes. This chapter seeks to answer the following research questions:

- Are the models of individual decision making related in any way to the models in group decision making? And is there a model that relates to them both?
- Is there a difference in how managers perform an individual decision-making process versus a group decision-making process?
- Do decision-makers tend to follow procedures and processes in decision making or do they rely on experience and intuition? Does it differ in individual decision making versus group decision making?
- Do corporate decision-makers fall into hidden physiological traps in their decision making?

First of all, the answers to the research question in the theme of effective communication will be examined, followed by how effective communication between colleagues can benefit the organization. Thereafter, the answers to the theme decision-making guidelines will be examined and how these guidelines can be of assistance for managers will be discussed. Third, the answers to the theme awareness of hidden psychological traps will be examined and how it influences and affects managers in their decision making will be discussed. Finally, the overall results will be concluded.

5.1 Effective communication

According to the theme of effective communication, it is primarily collaboration and participation between colleagues that characterizes the role of decision-makers. Their role is not only based on making decisions but also their ability to collaborate with their colleagues and their ability to know how many individuals need to participate in a decision-making process for it to effective.

The interviewees all agreed that collaboration is a major factor and has enormous importance in decision making, as stated in chapter 4.1 in the sub-group collaboration. Participant I points out that they are restructuring how they work and are aiming to work more as a team and aborting their hierarchy structure. Participant III agrees and points out that the organization is always fine-tuning and improving their processes towards working more as a whole. Participant VI emphasizes that there is a collaborative culture
at the organization and decision-makers are encouraged to seek collaboration with their colleagues in order to get other perspectives on decisions. These results are consistent with research on different approaches to decision making, as stated in chapter 2.6. Garvin and Roberto (2001) reported that there are two approaches to decision making, the inquiry versus advocacy approaches, and explain that the right approach leads to a sound and effective decision-making process. Garvin and Roberto outlined six criteria for assessing the quality of a decision-making process. These criteria emphasize moving from a contest culture where decision-makers are competing with each other towards a collaborative culture where there is collective ownership in the decision-making process. In the Cyert and March (1992) paper, entitled A Behavior Theory of the Firm, they presented the results of their research on the importance of collaboration between decision-makers. They based their research on the Cyert and Simon of 1958, they present the Carnegie-model of decision making. The Carnegie-model emphasizes the importance of executives agreeing and collaborating because of their different perspectives and views on matters. Participant IV is convinced that collaboration has begun to occupy a more important place in decision making and considers it to be based on the fast-paced business environment in today’s society. Collaboration thus obviously takes on more importance in the decision-makers' work according to this study and therefore, is corresponding with foreign studies reviewed in this research.

The interviewees agreed that participation in decision making is also a factor that decision-makers need to consider. They believe that too much participation in a decision-making process can gradually slow it down while too little can leave out those it affects the most. Participant I and IV make it clear that decision-makers at the organization tend to include everybody and get everybody’s views and perspectives, making the decisions take a longer time than it should. They believe that they are inefficient in that way and that it is important to identify the participants, whom the decisions affect, and how they are related to the decisions. The interviewees also made it clear that employees and managers across the organization are very positive about participating in a decision-making process. They view it as a sense of pride and importance to be included in important matters at the organization. Garvin and Roberto’s paper supports this finding, as their results conclude that the managers' role is to motivate people to effectively participate in a decision-making process. They believe that decision-makers should adapt the inquiry approach where the decision-making process should be an open-minded process designed to generate alternatives, encourage a change of ideas, and most
importantly view participants as critical thinkers rather than spokespersons for their own vision. Having participants effectively participate in a decision-making process is of great importance to decision-makers in order for the process itself to be effective and successful.

5.2 Decision-making guidelines

According to the theme decision-making guidelines, it is important for decision-makers at an organization to have guidelines for them to follow in decision making, especially in a decision-making process. Decision-makers follow these guidelines in order to take better-informed decisions as these guidelines have proven to be effective in previous decisions. Guidelines are especially effective in programmed decisions whereas it can save time, as these decisions are usually similar every time. However, guidelines can also be effective in nonprogrammed decisions because they can help decision-makers avoid spending unnecessary time in gathering data if it is currently available at the organization. The two-sub-groups are procedures and processes.

All interviewees agreed that the organization has various different procedures for their decision-makers to follow. They believe that these procedures are guidelines for them rather than procedures that they must follow every single time, as stated in chapter 4.2.1. Participant II mentioned that they have strict procedures on all major formal decisions. However, they only use these procedures as guidelines because decision-makers weight factors differently. Participant III points out that they have procedures on formal decisions, and that the most important thing is to gather the right information and build up their view and understanding of the task in order to take informed decisions. Furthermore, they are encouraged to bring their intuition and experience into the decision making. Participant IV points out that they have different procedures regarding different situations. Procedures in programmed decisions are rather short-term while procedures on nonprogrammed decisions long-term decisions that affect their future strategy. The participant mentioned that their procedures are not perfect and that they definitely could do better. However, there is always supporting information at the organization which helps their decision-makers make informed decisions. These findings are consistent with the research on the importance of having procedures in decision making, as stated in chapters 2.1, and 2.5.1. In the 2012 Daft paper, it reported that decision-making processes are divided into two, the analytical-solving and problem-solving process. Decisions in these processes can then either be programmed or nonprogrammed
decisions. Programmed decisions occur when the issue is well defined, repeated, and there are known procedures to solve the issue. While nonprogrammed decisions are unexpected and undefined. Mintzberg, Raisinghani, and Théorét (1976) discussed programmed and nonprogrammed decisions. They developed the *incremental process model* that tracked events related to the decision process from the beginning to the end. The model describes the development of a series of actions from the problem identification phase to the problem solution phase. Participant VI points out that they have procedures on unknown problems which consist of analyzing the problem, coming up with several alternatives, and then choosing one. Having well known and written procedures for decision-makers to follow is an important factor according to this study and therefore, is corresponding with foreign studies reviewed in this research.

All interviewees agree that they have processes that they implement in their decision making. However, they believe that these processes are not decided for them beforehand and are rather methods that they have developed with experience and intuition. Therefore, each process may be customized to the decision-maker performing them. They agreed that there are similarities with how they carry out an individual decision-making process versus a group decision-making process. Their processes are somewhat based on theoretical methods such as the *rational approach* in chapter 2.3.1. Participant VI describes that their processes consist of understating the problem, thinking of several alternatives, and then choosing the best alternative. Statistical data is widely used in their decision-making processes and in addition, experience and intuition are definitely added into their processes. Participant II points out that it is important to see the big picture, gather statistical data according to that, and involve those that it affects the most. Participant IV mentioned that they always involve those the decision affects, which is why they view almost all of their decisions as group decisions. Daft (2012) supports these findings, as his results conclude that a decision-making process is a multi-step approach that begins at the problem identification phase and goes through to the problem solution phase. His model identifies problems systematically and requires that problems should be approached and implemented in a rational way. However, the bounded rationality model put forward by March, Cyert, and Simon, results conclude that the human mind is limited, and that decision-makers decide according to their intuition and experience. Consequently, it can be assumed that the interviewees base their decision-making processes on these two decision-making methods, the *rational approach* and the *bounded rationality model*. 
5.3 Awareness of hidden psychological traps

According to the theme awareness of hidden psychological traps, it is important for decision-makers to be aware of the hidden psychological traps in decision making. It is a phenomenon that influences how decision-makers act and think during decision making. Awareness is considered to be the best defense against hidden traps in decision making and it necessary for decision-makers to develop methods for avoiding falling into these hidden traps.

All interviewees agree that they are somewhat aware and that they have probably at some point in time fallen into hidden traps in their decision making, as stated in the theme *awareness of hidden psychological traps* in chapter 4.3. Participant II points out that she has definitely fallen into hidden traps in her decision making. However, she believes that she is pretty aware of these hidden traps and her defense against them is built into her experience and intuition. Participant III points out that he is somewhat aware but there is always room for improvement. He thinks that the best defense, especially in group decision-making processes, is diversity. Diversity encourages different perspectives which decrease the likelihood of falling into these hidden psychological traps. Participant VI points out factors such as the culture and structure at the organization can increase the likelihood of falling into these traps. However, they try to acknowledge them and eliminate them with methods and strategies as simple as just getting second opinions from colleagues. These results are consistent with research on hidden psychological traps in decision making, as stated in chapter 2.9. In the 1998 Hammond, Keeney, and Raiffa paper, it revealed that decision-makers use unconscious habits in their decision-making processes. They identified series flaws in the mind of the decision-maker and the most dangerous thing about these flaws, they are invisible. They are hardwired into their decision-making processes and decision-makers most often fail to recognize them. However, according to their research, awareness is the best defense and decision-makers that are aware of these hidden psychological traps are able to ensure a more effective decision-making process. Participant IV points out that the organization is developing methods and strategies for their decision-makers to follow in order to avoid potential hidden traps. Awareness of these hidden psychological traps is an important factor in decision-making processes according to this study and therefore, is corresponding with foreign studies reviewed in this research.
The prerequisite for success in a decision-making process is therefore effective communication between decision-makers, that organizations have decision-making guidelines for their decision-makers to follow, and that they are aware of the hidden psychological traps that may influence the way they think in a decision-making process.
6 Conclusion

Corporate decision making is an important factor in today’s business environment. Organizations tend to have procedures and processes for their decision-makers to follow as guidelines in their decision making. These procedures and processes are somewhat based on theoretical decision-making models. This study sought to explore individual and group decision-making processes, based on the theoretical models in decision-making, at an Icelandic high-tech manufacturing organization.

The results of the study indicate that models in individual decision making are in fact related to models in group decision making. These models have in common processes going from problem identification to problem solutions and decision-makers follow these processes made by the organization as guidelines for decision making. The processes are developed in a way that they are almost always the same whether individual or group decision making occurs. All of the interviewees at the organization generally agreed that they do follow guidelines in their decision-making and that these guidelines are almost always the same whether they are performing an individual decision-making process or a group decision-making process. Moreover, they agreed that they rely on intuition and experience in combination with these guidelines while deciding. The interviewees agreed that there was not a certain way the organization expected them to perform an individual decision-making process versus a group decision-making process. However, when deciding in groups, they must possess the ability to control their groups effectively in order to maximize each participant's efforts. Lastly, the interviewees generally agreed that they have fallen into hidden psychological traps in their decision making. However, they believe that there is overall awareness for these hidden traps at the organization and that they are effectively developing strategies and processes to prevent them from happening.

The author wonders whether the decision-makers at an organization are in fact deciding based on theoretical models in decision making or if they are solely following the guidelines developed by the organization, which may have been developed purely from past experience. The author ponders the same question based on the interviewee research, as they generally agreed that they do not follow certain methodologies in their decision making and that they only follow guidelines developed by the organization. Moreover, all interviewees agreed that the guidelines help them avoid falling into hidden psychological traps in their decision making.
The author is of the opinion that there is a lack of foreign and Icelandic evidence on decision-making processes, especially exploratory research via scientifically conducted, in-depth interviews. The author is also of the opinion that his contribution to this subject can encourage organizations to rethink how they perform individual and group decision-making processes, and that his contribution can encourage organizations to develop strategies that would help their decision-makers avoid falling into hidden psychological traps in their decision making. Subsequently, interesting research material in the aftermath of this study is to examine more profoundly how organizations develop decision-making guidelines for their decision-makers and whether they are in fact based on theoretical models in decision making. Possibly, decision-making courses could be established in which managers would be educated and trained to acquire excellent skills in these decision-making models and processes. Subsequently, it would be interesting to determine whether education and training would lead to more effective decision making. It would be noteworthy to explore the extent of the effects the hidden psychological traps have on the decision-makers. Possibly, behavioral courses could be established in which managers would be educated on these hidden psychological traps. Subsequently, it would be interesting to determine whether education would help them be more aware of these hidden psychological traps in their decision making.

The author believes that the research questions have been answered in accordance with the academic section and the research section of this study. It has reported whether models of individual decision making are in any way related to models in group decision making and if there is a model that relates to them both, if there is a difference in how managers perform an individual decision-making processes versus a group decision-making process, whether decision-makers tend to follow procedures and processes in their decision making, and if corporate decision-makers fall into hidden psychological traps in their decision making. The author has also suggested further research related to the findings of this study. Lastly, the author is of the opinion that the interviewees at the Icelandic high-tech manufacturing organization are probably not following theoretical models in their decision making and are most likely, only relying on their experience and intuition.
Bibliography


Appendix – Interview questions

Could you tell me about your current position at the organization? And what skills and knowledge does that position require?

Are there any procedures at the organization regarding how managers should make decisions?

Could you give some examples?

How do you make decisions regarding situations where the problem is known (programmed decisions)? Such as buying new equipment or job hiring.

How about where the problem is unknown (unprogrammed decisions)? Such as strategic planning, acquisitions, or downsizing.

Which factors do you believe are the most important in the connection of day-to-day business decision making?

In your experience, is there any ONE factor that determines the final decision making?

Are the majority of the decisions made in meeting rooms? And are they formal or informal?

Could you describe the process, step by step, which you typically use in decision making?

Do you have a certain methodology that you follow when you are making decisions?

What kind of resources do you use during decision making?

Regarding the decision-making process itself: Are there procedures at the organization on how to carry out a decision-making process? Or does the organization rely on the experience and intuition of its managers?

What methods do you use in order to detected issues in the decision-making process?

Do you use statistical data, or do you rely on intuition and experience, or maybe both?

What were the main issues you had to deal with when making important decisions?
Is there any difference in how you carry out a group decision-making process versus an individual decision-making process?

Could you give me examples of certain issues that require individual decision making on one hand and group decision making on another?

How many individuals are usually participated in a decision-making process?

Do you or the organization find it difficult to get other employees, from different departments, to participate in a decision-making process?

In your experience, when you’re working on a team project, do you make the most decisions, or do you prefer to step back and follow someone else’s guideline?

Think about a time when you had several options from which to choose, but none of them were sufficient enough to meet the organizations' goals. How did you decide which option to follow?

What kind of internal and external environmental factors influence the decision-making process?

Could you name a few and give examples on how and why they influence the organization?

Has decision making become more complex the bigger the organization has grown?

Has the size affected the methods you use in your decision making?

How aware are you of the psychological traps decision-makers tend to fall into in a decision-making process?

Do you believe that you have fallen into some psychological traps in your decision making?

Do you or the organization have any tests in your decision-making process for avoiding falling into some well-known psychological traps?

Is there anything you would want to add?