"EXPLORING THE CHARACTERISTICS OF STEERING COMMITTEE MEMBERS: A Q-METHODOLOGICAL STUDY"

Master Thesis written by:
Rolf van den Berg

TU Delft

KWD RESULTAATMANAGEMENT

Exploring the Characteristics of Steering Committee Members: A Q-Methodological Study

by

Rolf van den Berg

To obtain the degree of Master of Science in Construction Management and Engineering
at the Delft University of Technology.

Student number:	4392299	
Project duration:	Februari , 2022 – Januari, 2023	
Thesis committee:	Dr. ir. M. Bosch-Rekveldt,	TU Delft, chair
	Ir. J. Stoppels,	TU Delft, 1st supervisor
	Dr. ir. L. S. W. Koops,	TU Delft, 2nd supervisor
	Dr. R. Kappert,	KWD, company supervisor

TU Delft

Preface

This thesis has been written to fulfill the requirements for obtaining a Master's degree in Construction Management and Engineering at TU Delft. The research focuses on the characteristics of steering committee members using a Q-method to investigate the subjective matter. Interviews were conducted with project managers from KWD Resultaatmanagement and steering committee members provided by these project managers.

I would like to express my gratitude to Jaap Stoppels, Marian Bosch-Rekveldt and Leonie Koops for their time and valuable feedback throughout the research process. I would also like to extend my thanks to Ronald Kappert for his guidance, feedback, and assistance in managing the research processes. Lastly, I would like to extend my appreciation to all the respondents who participated in the research by taking the time for an interview or providing other respondents for the study.

Rolf van den Berg
Delft, January 2023

Executive summary

The complexity of projects has been on the rise and researchers have been working to understand the best ways to manage them. Along with project management, project governance is a crucial element in ensuring project success. One method of governing a project is through the use of a steering committee, which is a temporary entity that exists solely during the duration of the project and is responsible for the governance and support of the project. The use of steering committees can have a positive impact on project success. However, steering committees often encounter challenges that arise from steering committee members lacking certain characteristics. Even though steering committee members are chosen based on their characteristics, it is uncertain if these are the appropriate characteristics for a well-functioning steering committee. Additionally, it is uncertain if these ”right” characteristics are dependent on the context in which the project is taking place. This raises the following research question:

What are the characteristics that steering committee members must have in order to achieve a well functioning steering committee and on what contingencies do these characteristics depend?

This thesis aims to understand the characteristics that are essential for steering committee members to effectively govern and support a project. To investigate this subject matter, which is inherently subjective, the Q-method was employed as the methodology of choice. Through a review of literature and practitioner books, a comprehensive list of skills and competencies was compiled, based on tasks and behaviors that steering committee members may possess. These characteristics were then presented to a sample of 14 project managers and 11 steering committee members, who were asked to rank them in order of importance for a successful steering committee. Additionally, questions were posed to gain insights into the reasoning and context underlying their choices. The task and interview were conducted in a face-to-face and one-on-one setting..

The participants were also asked to define what they believed to be a well-functioning steering committee. This led to a set of criteria and revealed that the way in which a steering committee should function is dependent on the context. This was evident in how the participants ranked the characteristics. Four distinct perspectives were identified regarding the characteristics that steering committee members should possess in order to achieve a well-functioning steering committee (see Figure 1). Participants in Perspective 1 placed emphasis on genuine interest and effective communication as key characteristics for steering committee members, similar to the role of a project champion. Participants in Perspective 2 argued that the project manager should be empowered and that steering committee members should focus on governance. Perspective 3 emphasized the need for steering committee members to be strategic managers, and Perspective 4 posited that a steering committee member should act as project sponsor. The perspectives showed that the role of the steering committee member towards the project organization and permanent organization influences that characteristics that the steering committee member needs.

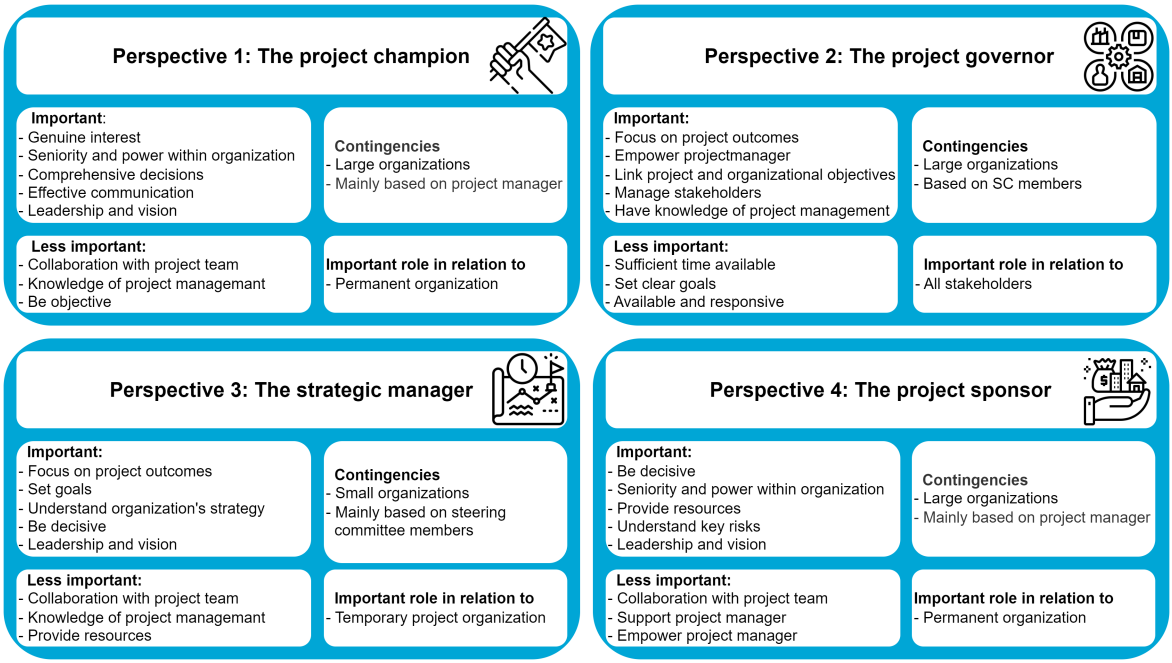

Figure 1: Perspectives

The thesis also revealed that the context in which the project takes place plays a large role in determining the necessary characteristics of a steering committee member. The respondents provided context for how they sorted the characteristics and indicated that the perspectives depend on various factors such as the size of the organization, the stage of the project, and the role of the steering committee member in relation to the project organization and the permanent organization. These insights were further discussed and validated in a session with a group of experts in the field. The findings from the interviews were then compared to literature to understand the role of contingencies in determining the necessary characteristics of a steering committee member. The thesis suggests that the size of the organization influences the phase of the project in which the steering committee member is most active, which in turn affects the expected level of strategic or monitoring skills from a steering committee member. Additionally, the thesis also highlighted that project managers and steering committee members have different perspectives on the necessary characteristics of a steering committee member. Project managers may focus more on specific behaviors and support they need from a steering committee member, while steering committee members themselves may focus more on the strategic or monitoring tasks they need to fulfill.

It can be concluded that the characteristics required for a steering committee member are highly dependent on the context in which they operate. The four perspectives presented in this study indicate that the necessary characteristics vary depending on the role of the steering committee member and whether their focus should be on the interests of the project organization, the permanent organization or the entire project environment. Additionally, the size of the organization also plays a role in determining the specific characteristics required for effective steering committee members, as well as the manner in which they provide governance and support to the project. Further research could be conducted using a different P-set or Q-set. Additionally, research could be done on the required characteristics of the entire steering committee. If these are found to be similar to this research, it would indicate that it is acceptable to have the same types of steering committee members in one steering committee.

Contents

1 Introduction

This chapter explains the context of the thesis and briefly explains the researched subject. The problem statement is stated and the corresponding research questions are formed. Furthermore, the scope of the thesis, the choice of method and the structure of the thesis are explained.

1.1. Thesis context

In recent years, projects are increasingly becoming more complex (San Cristóbal, 2017). Many researchers try to understand and try to create ways to manage these more complex projects. Not surprisingly, because competent project management is seen as decisive importance for a project to reach its set goals (Brulin and Svensson, 2011). Competent project management is not the only element that is important for reaching its set goals though. According to Arnesson and Albinsson (2014), research shows that there are four of these essential elements. Alongside competent project management, there is active ownership, committed respondents and a well functioning steering committee. The context of this thesis will be in the last mentioned element: the steering committee. The importance of a steering committee is also acknowledged by Lechler and Cohen (2009, p.42): *"Steering committees directly support project success and are instrumental for attaining value from an organization's investments in its project management system"*. Also Hjelmbrekke et al. (2014) acknowledge the importance of steering committees by stating that steering committees have the vital function to communicate the value proposition (often called the business case). This communication is the link between the strategic goals and the project output.

According to Crawford (2008), steering committees are responsible for project support and project governance. A definition of governance given by Müller (2009, p.2): *"Governance provides a framework where boundaries are also set for management action by defining the goals of the organization and the means by which they should be attained"*. Therefore, this thesis also includes some literature on project governance, which helps the reader to get a better understanding of the purpose of a steering committee. There are a few studies that dive into the functioning of steering committees. However, the amount of studies on this topic is limited and there is still a lot to explore in the subject of steering committees.

1.2. Steering committees for project governance

In literature it can be found that a steering committee is a term used to describe two different things. Some steering committees are seen as being responsible for the governance of projects, while some steering committees are seen as responsible for project governance. While governance of projects and project governance sounds similar, there is a great distinction between the two. Project governance is aimed at the steering and the management of a particular project and according to APM (2004), the governance of projects concerns those areas of corporate governance that relate to project activities. Good governance of projects ensures that the project portfolio of an organization is aligned to its objectives. Important to realize is that the governance of projects, which APM describes, can be seen as a form of portfolio management. Project portfolio management focuses on coordinating and controlling

multiple projects that have the same strategic goals and are vying for the same resources (Cooper et al., 1997). Through this process, managers prioritize projects in order to maximize strategic benefits Thus, project governance is focused on a specific project and governance of projects is focused on a portfolio of projects. This thesis looks into steering committees that are responsible for the governance of one specific project. In other words, steering committees who are responsible for the project governance.

1.3. Problem statement

The importance of a steering committee is acknowledged by multiple studies (Arnesson and Albinsson, 2014, Lechler and Cohen, 2009, Hjelmbrekke et al., 2014). The likely important role of steering committees for project success means that steering committees could enfold many positive influences on the project (Lechler and Cohen, 2009). Lechler et al. (2009) states that committees can involve senior management in project decisions to compensate for the low authority of project managers; committees could support coordination between different functional units in an organization. However, Lechler et al. (2009) also state that steering committees also could have negative influence on the project, such as delays in decisions and organizational conflicts. Also Loch et al. (2017) addresses that steering committees do not always function perfectly by listing the challenges that steering committees often face in projects. It might be that these challenges partly arise from missing characteristics of steering committee members. One example was given by many steering committee members not investing the effort to understand the logic and drivers of the project (Loch et al., 2017). Loch et al. (2017) substantiated this by stating that the steering committee members may be too busy to invest time in the project or they do not want to admit that they lack the knowledge of the project. In an interview conducted by Arnesson et al. (2017, p.334), a project manager who was talking about the steering committee meetings said: *"They (steering committee members) come when they feel like it and most of the time it doesn't seem as if they feel like it."* The project manager continued by saying that no decisions were made due to the lack of attendance of the steering committee members. Besides knowledge and time, the research of Murphy (2016) concluded that there are more characteristics that could lead to project failure. Steering committees that do not have experience, skills, level of autonomy, decision authority or absorptive capacity are prone to project failure (Murphy, 2016). This could possibly mean that project failure is correlated to steering committee members missing characteristics.

According to Loch et al. (2017), steering committees are often put together politically rather than expertise-covering. Meaning that the selection of steering committee members is based on some characteristics. However, there is no proof that these are the right characteristics for a well functioning steering committee member. This might be dangerous, because the steering committee will not understand the uncertainties of the project and have to fully rely on the expertise of another party (Loch et al., 2017). In addition, it is also not known if the "right" characteristics of steering committee members are uniform or that they are situational. Preferred characteristics of steering committee members may be dependent on the organization.

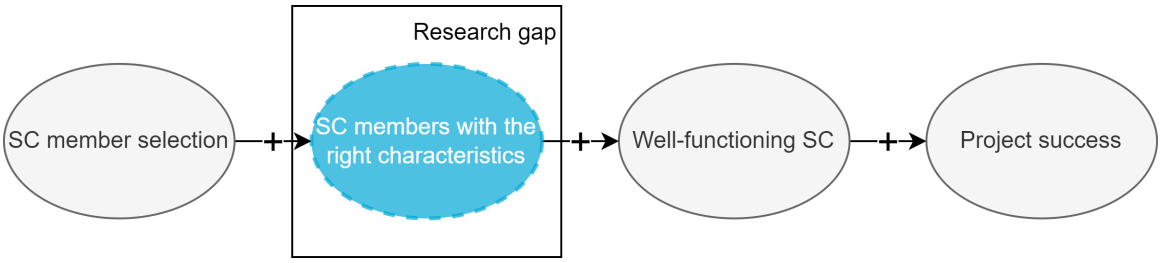

Figure 1.1: The problem statement

To conclude, steering committees might have an important role in achieving project success. Steering committees do face challenges that possibly arise from steering committee members missing characteristics. While literature mentions that member selection is based on some characteristics, it is not proven that these are the characteristics needed for a well-functioning steering committee member. Moreover, the preferred characteristics could be situational. Given the importance these authors

give to selecting on characteristics, there is a relevance to do research on this topic and to find the steering committee member characteristics that are needed for a well-functioning steering committee. Therefore, the thesis will investigate what these characteristics are.

1.4. Main question

The objective of this thesis is to find the characteristics of steering committee members that result in a well-functioning steering committee. As mentioned earlier, the preferred characteristics could be situational. Meaning that contingencies, like type of organization, might have an impact on what characteristics for a steering committee member are preferred. This variability is therefore incorporated in this thesis and the main question can be formulated as:

What are the characteristics that steering committee members must have in order to achieve a well functioning steering committee and on what contingencies do these characteristics depend?

In order to determine the preferred characteristics, all relevant characteristics of steering committee members need to be found. These characteristics are based on what is needed for a well-functioning steering committee and therefore, this thesis also needs to specify what can be understood as a well-functioning steering committee. Moreover, The contingencies lead to different preferences concerning steering committee member characteristics. These different preferences, or perspectives, need to be described together with the contingencies that these perspectives depend on. Thus, the research question can be divided into four sub-questions which can be formulated as:

- Q1: What are the potential relevant characteristics of steering committee members?
- Q2: When is a steering committee considered as well-functioning?
- Q3: Which perspectives exist on important steering committee member characteristics for a well-functioning steering committee?
- Q4: On what contingencies do the perspectives on important steering committee member characteristics depend?

1.5. Scope

The scope of this thesis is defined in this section to explain the research area that is explored. Figure 1.2 shows what is within scope and what is outside of the scope for this thesis.

Characteristics
All relevant characteristics of steering committee members are found. For the scope of this thesis, characteristics like skills and competences are considered as relevant. Demographics like age, gender or race may have influence the functioning of a steering committee member but are out of the scope in this thesis.

The steering committee member
This thesis examines the necessary characteristics for a steering committee member, focusing on the individual rather than the entire committee. While the overall functioning of a steering committee is influenced by the characteristics of all its members, this research is motivated by the challenges that arise when individual members lack certain characteristics. Through the use of Q-method, interviews and expert sessions, this thesis explores the characteristics needed for a steering committee member to contribute to a well-functioning committee. It also considers the influence of organizational size and context on the necessary characteristics. However, this research does not examine the psychological dynamics of group behavior, which can also have a significant impact on the performance and effectiveness of a steering committee, as well as the individual members within it (Levi and Askay, 2022).

The steering committee

As mentioned in section 1.2, this thesis investigates steering committee members of steering committees which are temporary and are responsible for the governance and support of one project. The members of a temporary steering committee fulfill their role temporarily and are generally not trained for this role (Stoppels et al., 2022). Therefore, the members of these temporary steering committees are even more interesting to investigate.

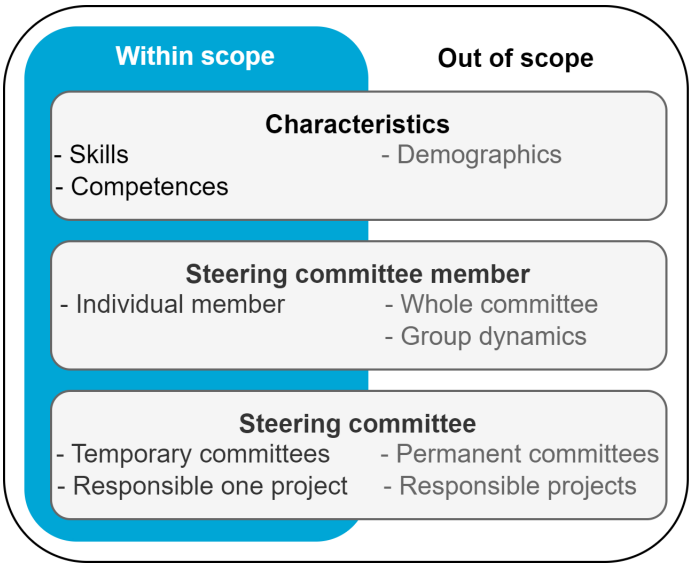

Figure 1.2: Scope thesis

1.6. Choice of Research

The aim of this thesis is to understand the characteristics that are necessary for steering committee members to have in order to achieve a well-functioning steering committee. However, the subjectivity of the respondents cannot be avoided when attempting to answer this question. Different individuals may have varying opinions on what the necessary characteristics for steering committee members are. The Q-methodology is a research method that can be used to study this subjectivity by quantifying subjective patterns in qualitative data (Shemmings, 2006). By asking multiple respondents to sort their opinions and views on statements related to the subject at hand, patterns of these views can be identified, revealing different perspectives on the subject. As the necessary characteristics for steering committee members may be dependent on various factors, the different perspectives provided by this method can uncover these dependencies. Therefore, the Q-methodology is an appropriate choice for answering the research question.

Q-methodology is executed in clear steps. According to literature (Damio, 2016; McKeown and Thomas, 2013; Watts and Stenner, 2012), the different steps are:

- Defining and building the concourse;
- developing the Q-set;
- selection of P-set;
- conducting the Q-sort;
- analysis;
- interpretation;

This research plan is executed in several steps. First, all potential statements related to the topic of steering committee member characteristics are identified. From this list, a selection of statements is chosen to form the Q-set. Next, the respondents are selected and the Q-set is presented to them for sorting and prioritization, along with an interview. The data from this step is then analyzed and clustered into factors, from which perspectives can be identified. In addition, an expert session is conducted to further discuss any contingencies that may have emerged from the interviews, providing a more comprehensive understanding of their impact on the findings.

1.7. Structure of thesis

Chapter 2 of this thesis presents a comprehensive literature review on the concepts of governance and steering committees, serving as the theoretical foundation for this research. The design of the Q-study is outlined in chapter 3. The analysis of the collected data and the identification of perspectives are discussed in chapter 4. Chapter 5 delves into the contingencies identified through the expert session and their potential impact on the findings. The results and implications of this study are discussed in chapter 6, and chapter 7 concludes with a summary of the research questions, providing answers and recommendations for future research. Figure 1.3, found on the next page, shows the flow diagram of this thesis.

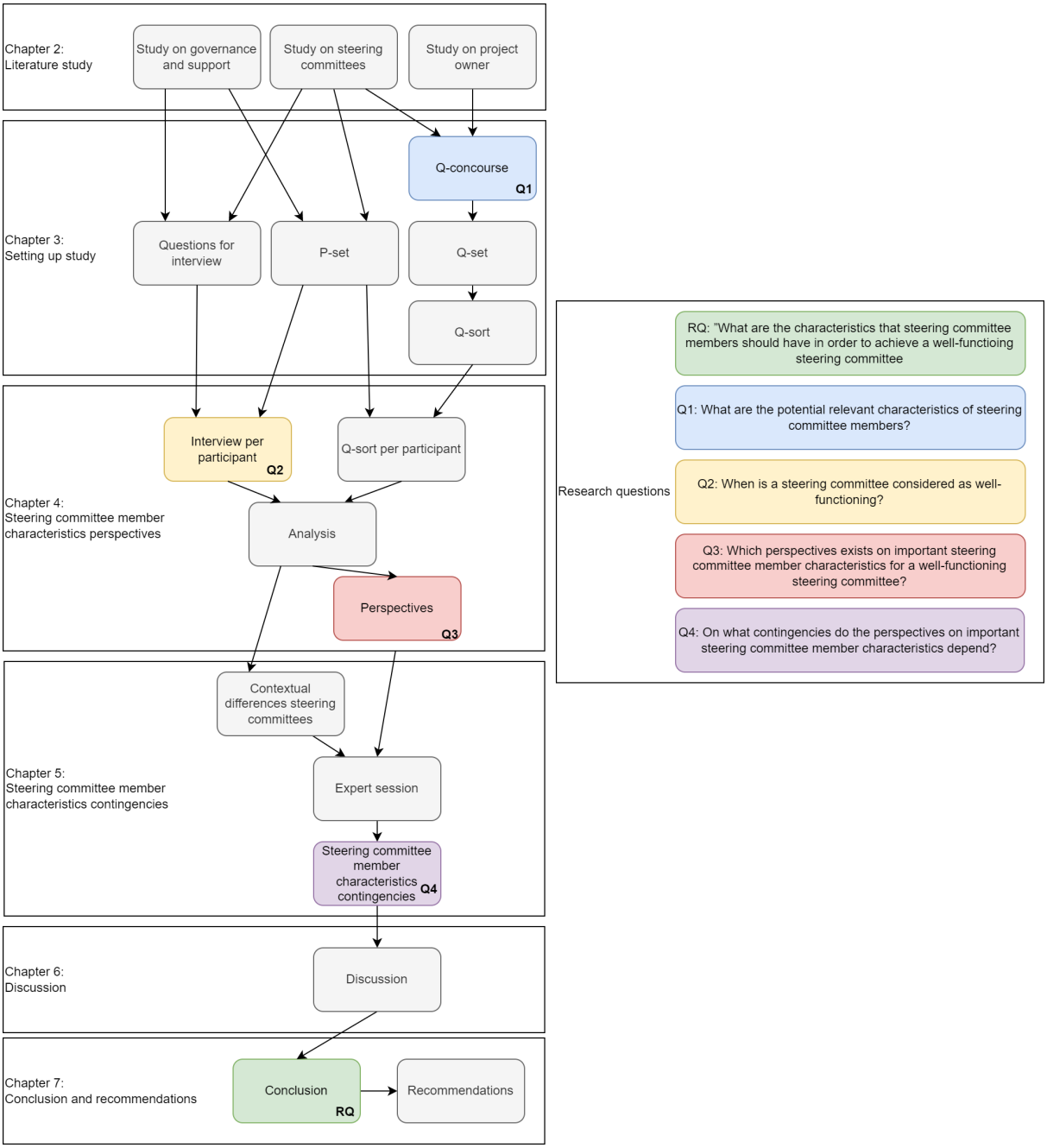

Figure 1.3: Flow diagram research design

2

Literature study

In order to determine the characteristics that steering committee members should possess, it is first necessary to explore the tasks of a steering committee member and the function of a steering committee. This literature study was conducted by searching for scientific articles on steering committees. Additionally, scientific studies on project sponsors were also researched, as the tasks appear to be similar to those of a steering committee. An explanation of this can be found in this chapter. Steering committees and project sponsors may have different names in the scientific literature, so the keywords used include: Steering committee; Steering group; Project Board and Project owners; Project sponsor; Project executive. Because steering committees are a governance body, this literature study also included search for project governance.

2.1. Definition and purpose steering committee

This section defines the role and purpose of a steering committee within a project and organization. It also highlights the differences between a steering committee and a project team, and explores the impact that the size of the organization and the phase of the project have on the expectations placed on a steering committee.

2.1.1. Definition

Steering committees were given different titles in literature. As mentioned in chapter 1, this thesis only looks at temporary project steering committees. Some project steering committees named in literature did not comply with the steering committee used in this thesis and some did comply but had a different title like “project board” (Axelos, 2009), or “steering group” (Arnesson and Albinsson, 2014). The responsibilities of steering committees are also not always considered the same between literature. The concept of a steering committee is not clearly defined in literature (Lechler and Cohen, 2009). Forming an accurate definition of a project steering committee is therefore not possible yet. However, looking at the main responsibilities of a steering committee, the steering committee can be defined as an entity which is responsible for project support and project governance (Müller, 2009; Axelos, 2009; Project Management Institute PMI, 2016, ;Crawford et al., 2008). Furthermore, practitioners’ books give an indication of the responsibilities that steering committees have (Axelos, 2009; Müller, 2009).

2.1.2. Purpose

According to Zwikael et al. (2019), steering committees are strategic entities that ensure that a project progresses according to plan and that the business case is realized. Zwikael et al. (2019) also state that the project sponsor is the individual responsible for achieving the project’s business case and its target benefits (Zwikael et al., 2019). The key performance indicator for both the steering committee and the project sponsor is the realization of the business case. Additionally, Zwikael et al. (2019) state that a project steering committee is typically chaired by the project sponsor and may include members from the performing entity, as well as other key stakeholders. This chapter provides a more detailed review of these responsibilities. However, it can be concluded that part of a steering committee’s responsibilities are based on the responsibilities of the project sponsor.

2.1.3. Differences steering committee and project team

The steering committee has a strategic function and the project team has the function to execute the project (Murphy, 2016). This is not the only difference between these entities. Murphy (2016) does add more characteristics of steering committees that differ from project team characteristics in his research. Some examples: the member selection of steering committees is done from senior ranks of the organization; they typically have higher educational levels; they have periodic meetings; also have a monitoring function; they are an autonomous leadership unit and shape the context of the project to maximize strategic benefit.

2.1.4. Steering committees in different organizations and project phases

Steering committees are acknowledged as an important element in project success. Steering committees are used in different types of organizations. Larger organizations often use steering committees for their larger projects (McGrath and Whitty, 2019). The responsibilities of a steering committee could change throughout the project as the responsibilities also change for the project sponsor (Zwikael et al., 2019), which is one of the important members of the committee. According to Zwikael et al. (2019), there are four project phases: the initiation, the planning, the execution and the benefits realization. The responsibilities in these four phases are further explained by Zwikael et al. (2019). In the initiation phase the responsibility for a project sponsor is to develop the business case and to define the project target benefits. In the planning phase, the project manager is selected and is given the strategic direction for the project. In other words, the earlier stage of the project has a focus on the strategy of the project. In the execution stage, there is a more monitoring function, decision-making throughout the project and the managing of risks and stakeholders. In the benefits realization and last phase, the project is delivered and evaluated. However, in smaller organizations the steering committees tend to have a focus on the procurement only and trust the project manager and project team to implement the solution (Murphy, 2016). Meaning that the steering committee in smaller organizations is more active in the earlier stages of the project and thus, have a more strategic function.

2.2. Project governance and support

A steering committee is responsible for the project governance and project support (Crawford et al., 2008). This section elaborates on what governance and support of a project is and when they are demanded in the project organization or by the permanent organization.

2.2.1. Project governance

One of the main tasks of a steering committee is governing the project. Project governance can be explained as the governance of one project. Governance in general is defined by the system by which an entity is controlled (McGrath and Whitty, 2015). Project governance refers to the rules, procedures, and processes that guide the management of a project in order to produce a unique product, service, or result that aligns with the organization's strategic and operational goals (Project Management Institute PMI, 2016). It has its similarities with corporate governance, which also provides a framework that should guide to reaching organizational objectives. Corporate governance, however, has its focus on governing the whole company. Project governance is focused on setting up rules and processes in projects to achieve results that are in the organization's favor.

Project governance is seen as indispensable in a project (Hjelmbrekke et al., 2014). There is a separation between the project manager and the top-management of the organization which makes it difficult to let the project move in the boundaries of the organization's strategy. The project managers often have the perception that the success of projects is measured by delivering the project in time, quality and scope which differs from the perception of top-management that looks at long-term benefits that the project has on the organization which was the initial motivation for the existence of the project (Cooke-Davies, 2002). A governing body like a steering committee is needed in this case to function as a link between the project management and the strategic objectives of the organization.

2.2.2. Project support

Besides the governing of a project, the project also needs support. In projects where resources are scarce the project manager needs the support to make the project successful (Crawford et al., 2008).

The steering committee's decision-making power should be strong enough to ensure that their support is not only present at the beginning of the project, but also continues throughout the project.

2.2.3. Governance or support?

The need for project governance or project support depends on the individual specific situation (Crawford et al., 2008). More governance is necessary when:

- The parent organization has a significant level of risk exposure to the potential failure of the project.
- The project has consistently underperformed compared to the organization's expectations.
- The organization is facing rapidly changing market conditions.
- Corporate governance requirements have also brought attention to the project.
- There may be suspicion of illegal or noncompliant behavior by the project team.
- The project is considered mission-critical or has a high level of exposure.
- There is a need to align the project with a new strategy or organizational context.

More support is needed when:

- The parent organization is not providing enough resources to support the project.
- Some parts of the organization are actively opposing its implementation.
- Different stakeholders within the parent organization are attempting to impose conflicting objectives or scope on the project team, or to impose unrealistic constraints.
- The organization is also failing to make necessary decisions to maintain planned progress
- The project manager and/or team is known to be inexperienced or weak.
- There are also early indications that the project may experience difficulty, such as a potential shortfall in benefits realization.

2.2.4. permanent organization and temporary project organization

The steering committee is responsible for overseeing and supporting a project. According to Andersen (2008), a project can be defined as a temporary organization established by a base organization to carry out a specific assignment. The project has a defined start and end date and is therefore a temporary organization. On the other hand, the base organization does not have a defined start and end date and is considered a permanent organization. The steering committee is responsible for acting in the best interest of both the permanent and temporary project organizations (Crawford et al., 2008). However, as stated by Crawford et al. (2008), the execution of their responsibilities depends on the need for governance and support. The need for governance is based on the interest of the permanent organization while the need for support is based on the interest of the temporary project organization. Therefore, the role of the steering committee can vary depending on the specific needs of the project.

2.3. Governance roles

Steering committees are not the only ones responsible for governance and support. There are also other forms such as the project sponsor and project champion that could contribute to these efforts.

2.3.1. project sponsor

In the traditional sense, the project sponsor is primarily responsible for providing resources for a project (Crawford, 2001). However, as stated earlier in the chapter, the project sponsor is often considered synonymous with the project owner (Crawford, 2001). In this thesis, the term project sponsor is used. According to Crawford (2001), the project sponsor is typically responsible for ensuring that the project delivers the desired business outcomes, providing internal political support for the project and ensuring

priority for funding and resources. Additionally, Crawford (2001) notes that the project sponsor should make decisions, be responsible for the project scope, approve the project plan and may also be responsible for risk management. Helm and Remington (2005) expand upon this by stating that the project sponsor should possess seniority and power, as well as the ability and willingness to make connections between the project and the organization.

2.3.2. project champion

The primary function of a project champion is to advocate for the project and secure commitment from the organization (Gattiker and Carter, 2010). They are typically senior managers from the owner or user organization who identify the need for a new asset and the potential benefit it will bring prior to the project. A project champion may also be referred to as an executive champion and they drive the implementation of project management throughout the organization, and accelerate its acceptance, as their involvement implies executive-level support and interest (Kerzner, 2009).

2.4. Tasks steering committee

The previous section approached the tasks of a steering committee by looking at project governance and project support. According to the project management methodology of PRINCE2, the tasks of a steering committee or, how PRINCE2 names it, project board are to (Axelos, 2009):

- be responsible for the project;
- provide unified direction;
- delegate effectively
- commit resources;
- ensure effective decision making;
- support the project manager;
- ensures effective communication.

The priority of fulfilling the tasks depends on what the project needs. As stated earlier, if a project needs more project governance or more project support depends on the individual specific situation (Crawford et al., 2008). Some projects may need more project governance in, for example, provided unified direction. While some projects may need more support, for example, project manager support. The tasks of a steering committee are an indication of what characteristics a steering committee member should have. The tasks are therefore important to review. A more detailed explanation of the mentioned tasks based on literature is stated below.

2.4.1. Be responsible for the project

A steering committee should be responsible for the project. This also means that steering committee members should understand their own role in the committee. The members could possibly not frequently act in the role and may not therefore understand what is expected from them (Crawford and Brett, 2001). McGrath and Whitty (2008) do state that the understanding of the role is relevant for an effective steering committee. Not understanding their role could result in overtaking the tasks of the project manager. According to Zwikael et al (2019), the project manager has the most expertise in this field and if they are overstepped it has negative consequences for the project. To prevent this from happening and make the steering committee members understand their role, the steering committee members could attain training sessions to know what is expected from each other (Zwikael et al., 2019; Crawford and Brett, 2001). Unclear expectations concerning what had to be done results in a low sense of responsibility (Arnesson and Albinsson, 2014). Moreover, Axelos (2009) states that some steering committee members may feel insecure about being responsible.

Being responsible for the project also means that the steering committee takes responsibility for realizing the business case. According to Zwikeal et al. (2019), one of the main tasks of the steering committee is to ensure that the business case is realized. When the business case seems not going

to be realized throughout the project, the steering committee has to take responsibility for the project and steer the project in such a way that the business case is going to be realized.

2.4.2. Provide unified direction

The steering committee should provide unified direction, which means that the members of the steering committee should work as a team to have a cohesive direction. It may happen that conflicts arise between parties within the committee. It is of high importance that compromises be made to move together in the same direction forward and a steering committee does not argue only on its own interest. If the parties' directions are unaligned, the project loses momentum and/or conflicting activities arise at the project team level (Axelos, 2009). However, a research by Arnesson and Albinsson (2014) states that some steering committee members felt passed over by the committee. The committee did not want conflicts and therefore tried to exclude a member that would possibly create problems by its own interests.

Providing unified direction is possible when there is an agreement on goals between the different members. According to Loch et al. (2017), building a win-win spirit in the committee results in compromises and less conflicts. Moreover, by translating the benefits for the organization into clear goals which are measurable, goal agreement can be achieved. Furthermore, a detailed scoping document can also contribute to goal agreement. The detailed scoping document should include the required actions, rough budget, important conflicts and trade-offs among goals, required expertise, key barriers and risks, and areas of insufficient knowledge; candid working document, not political statement (Loch et al., 2017).

2.4.3. Delegate effectively

Steering committee members do often have limited time to fulfill their tasks (Loch et al., 2017; Arnesson and Albinsson, 2014). As mentioned earlier, the steering committee members should understand their role and know what their tasks are. With the limited time that the steering committees have, they often delegate. The solutions proposals should be delegated to the project team for example, as they have the most expertise (Loch et al., 2017). According to PRINCE2, effective delegation is possible if it is seen as a stage contract. In this "contract" the tasks of the steering committee is to provide direction and to commit the resources. The tasks of the project manager is to deliver the products, to meet the product quality criteria, to deliver on budget and to meet the target completion date. The quality criteria, budget and target completion date are set up by the steering committee and have their tolerances. Meaning that, for example, if the completion date is later than the target date but within the tolerances, there is no need for the project manager to seek additional approvals from the steering committee (Axelos, 2009).

2.4.4. Commit resources

According to the book of axelos (2009), the commitment of resources is one of the main tasks of a steering committee. Providing resources is seen as a supporting task Andersen, 2012. Arnesson and Albinsson (2014) state that the members of a steering committee are often managers in the highest level of the organization and are owners of resources. The project managers are often not authorized to get the resources and need the steering committee to provide them or to give approval to the project manager to get the resources themselves. Crawford et al. (2008) state that there is high necessity for commitment and involvement to the project to ensure the availability of resources needed. A steering committee member which is less involved in the project would take less effort trying to arrange the resources for the project. If the resources needed for the project are scarce, there is more support needed from the steering committee to arrange these resources for the project manager (Crawford et al., 2008).

The resources for the project is of such high importance that the essence of the steering committee is not seen as the number of members but the resources that they have to conduct their functions (Murphy, 2016). According to Murphy (2016), the steering committee mostly has members who have access to internal resources. This is different from corporate boards which select their members through external recruiting. This type of member selection could be considered by steering committees. However, external recruiting for a steering committee could result in the members not understanding the organization on a high enough level (Murphy, 2016).

2.4.5. Ensure effective decision making

McGrath and Whitty (2009) state that a steering committee should take decisions and not just give advice. A steering committee that does not have the power to make the decisions stand could only be advisory. It is therefore important for a steering committee to include a member who has power in the organization. The decisions are then made in the meetings that are organized. These meetings could be frequent, however, committees do not interfere with the day-to-day project decisions and only act in macro decisions (Lechler and Cohen, 2009. Moreover, Lechler and Cohen (2009) found only small differences in decision processes between organizations, which may conclude that the organization does not have an impact on the decision process.

2.4.6. Support the project manager

Arnesson and Albinsson (2014) state that project support is one of the primary tasks of a steering committee. According to Helm and Remington (2005), there are several attributes associated with the ability to provide effective support for the project. Supporting the project also includes supporting the project manager. Partnering with the project manager is very much needed and it mostly depends on trust (Helm and Remington, 2005). The project manager and the project sponsor (or steering committee) could establish a partnering relationship if trust is gained between them (Helm and Remington, 2005). According to Crawford et al. (2008), project support is not something that is only needed in the earlier stages of a project. The goals of the project need to be achieved in a sustainable way, meaning that they cannot be achieved if the support disappears later in the project (Crawford et al., 2008).

2.4.7. Ensures effective communication

According to Axelos (2009), effective communication should be ensured for the steering committee. Zwikael et al. (2019) acknowledge this by stating that communication has been identified as a critical factor for project success. Effective communication can be ensured when, in this case the steering committee members, stick to the issue during the meetings (Bang and Midelfart, 2017). The members should stay on the targeted goals for each agenda item and should concentrate on the essential issues for the project. Bang and Midelfart (2017) added that these targeted goals need to be clear for everyone to increase task performance and relationship quality. The members should speak up if the goals felt unclear. However, according to Bang and Midelfart (2017), members feel embarrassed when they indicate that they do not understand the goals.

Besides effective communication being important within the steering committee, effective communication is also needed towards other parties. According to Hjelmbrekke et al. (2014), the steering committees have the vital function to communicate the strategic goals to the project output. This communication can be towards the organization, the project manager and also the stakeholders. Moreover, the research of McGath and Whitty (2019) indicates that steering committees are potentially very useful communication devices.

2.5. Conclusion

Throughout the literature are different definitions of steering committees found. The definitions are mostly based on the main tasks that steering committees have. While a steering committee can be considered as an entity which has to provide project governance and support, the concept of a steering committee is not clearly defined in literature yet. There is literature on the characteristics of the project sponsor, which is part of the steering committee. However, there is almost no literature found on the steering committee member. It is therefore not a surprise that literature states that steering committee members often do not know what is expected from them. It is not clear which characteristics a steering committee member should possess. Moreover, literature suggests that the expectations of a steering committee member may differ depending on the context. Besides the dependence of the tasks of a steering committee member on the project phase and the size of the organization, there is little literature found on how the type of organization or project has an influence on the prioritization of steering committee member characteristics. However, some specific examples were mentioned and indicate that context matters and that an ideal steering committee member may not exist.

Thus, in order to gain a clearer understanding of what is expected from a steering committee mem-

ber, this thesis identified all relevant characteristics and then subjected them to a relevance sorting by respondents with experience in steering committees. In addition, by interviewing the respondents, not only the important characteristics for a steering committee member was determined, but also the context in which they were particularly relevant.

3

Setting up the Q-study

Section 1.6 introduced the Q-study as the choice of research for this thesis. In this chapter, the steps of setting up the Q-study are described and executed. Setting up the Q-study consists of a few steps:

- Defining and building the concourse;
- developing the Q-set;
- selection of P-set;
- conducting the Q-sort;

3.1. Defining and building the concourse

The first step in the study was to create a Q-concourse. The concourse is a technical concept used for the collection of all the possible statements the respondents can make about the subject (Van Exel and De Graaf, 2005). In this study, the objective is to find all possible statements concerning characteristics of steering committee members. In other words, all relevant characteristics of steering committee members need to be found. A characteristic can be understood as “relevant” whenever it has an influence on the functioning of this member. However, some specification is required to prevent an endlessly large concourse. Section 1.5, which described the scope of this thesis, indicates that characteristics concerning skills and competences are included in the concours and that demographics are excluded.

This study uses literature and practitioners’ books to collect statements on characteristics of steering committee members. These statements are either scientifically proved or based on much used project management method guides. The amount of literature on steering committees is limited. It is therefore difficult to create a complete Q-concourse based on only project steering committee literature. The literature review in chapter 2 stated that a project sponsor, or sometimes called project owner, is typically the chair of a steering committee and its tasks and responsibilities are comparable to the tasks and responsibilities of a steering committee. Therefore, characteristics of project sponsors are also included in the concourse.

All the literature that has been reviewed on characteristics for steering committee members can be found in appendix A (table A.1). It shows the writer(s) of the literature, the researched industries in the literature and the journal it was from. This information is listed to ensure that the literature is as diverse as possible. Furthermore, underlying references are listed to ensure that the found characteristics are not based on the same literature. All characteristics that were found were given a number. The last column shows how many new characteristics were found in the paper. This last column has the function clarify if theoretical saturation is met. Theoretical saturation can be understood as an indication that, on the basis of the data that have been collected, further data collection is unnecessary (Saunders et al., 2018). When reviewing a few more papers does not result in finding new characteristics, theoretical saturation is met.

Potential relevant characteristics of steering committee members			
Have knowledge of project management	Have political knowledge	Have experience in the industry	Be able to mitigate shortfall on project results
Understand the organizations strategy	Be able to connect project and organization	Should not argue in favor of own interest	Be able to maximize business benefits
Be able to monitor the project	Be personal compatible with other players	Be able to support project leader	Be able to maximize project benefits
Be able to collaborate with project team	Be objective	Report activities own organization	Be able to improve organization's skill set
Be able to provide resources	Challenge the project(team)	Able to keep informed	Be able to improve organization's efficiency
Be able to provide leadership and vision	Have access to decisionmaker in the organization	Have constructive critical thinking	Be able to prevent scope creep
Have seniority and power within the organization	Be able to shield project manager from the board	Have knowledge of subject matter	Be able to manage contingency reserves
Be able to manage stakeholders	Be able to delegate	Have high meeting attendance	Be able to do contract administration
Be able to accelerate decisions in parent organization	Have knowledge of the organization	Have prestige	Have solidarity
Be able to motivate the project manager and project team	Be able to provide organizational information to project	Have social reputation	Have imagination/creativity
Possess relevant authority	Have courage	Network actively	Be able to review project products
Be able to empower the project manager	Battle on behalf of the project	Have position in organization	Be able to give advice
Be trustworthy	Able to bear risk	Have access to resources	Be convincing
Understand their role	Stand strong in difficult times	Have control of uncertainty factors	Be able to lobby
Be able to monitor the business case	Be available and responsive	Have problem solving abilities	Have commitment
Be able to evaluate project manager performance	Have autonomy	Be supportive within the group	Be able to clarify scope
Be able to understand the key risks	Have experience in the role	Be reliable	Be able to allocate budget
Be able to validate information	Be aproachable	Have cognitive complexity	Be able to step in if project manager fails
Be decisive	Be compatible with project team	Be empathic	Be able to harmonize disagreeable voices
Have sufficient time available	Have social skills	Be able to communicate effectively	Be able to act quickly in a crisis
Be able to understand the key drivers	Have technical expertise	Put task conflict over relationship conflict	Be able to prioritize activities
Be flexible in project planning	Be able to handle ambiguity	Not be stubborn	Be highly educated
Be open about shortcomings	Be able to direct	Have access to information	Be able to work independently
Be able to distribute information	Focus on project outcomes	Be a good negotiator	Be able to come up with solutions
Collaborrate with base organization	Be able to remove project obstacles	Have genuine interest in project	Be able to replace project manager
Be able to set clear goals	Link project and organizational success factors	Be able to keep pace in project	Be able to terminate a project
Be able to make comprehensive decisions	Be able to mitigate resource shortage		

Table 3.1: Potential relevant characteristics

Table 3.1 shows all the potential relevant characteristics of steering committee members that were found in literature and practitioner's books and gives the answer to the first sub-question: "What are the potential relevant characteristics of steering committee members?"

3.2. Developing the Q-set

The next step was to sample the statements that were collected in the concourse to a Q-set. The selection of the statements that were used for the Q-set is of importance, but remains more art than science (Brown, 1980. In other words, there is not one correct way to sample the statements. This study searches for the characteristics of steering committee members that are considered as being the most important for a well functioning steering committee. Therefore, it would make sense to sample the statements on how many times they were mentioned in literature. The amount of occurrence of the characteristic in literature does not mean how important the characteristic is seen in literature. However, it does give an indication and would still be a useful sampling of the statements. Appendix A (table A.2) shows the characteristics found in literature and in which they occurred. The last column of this table shows the total amount of occurrence of the characteristic.

Some characteristics in the Q-concourse do overlap. Therefore, characteristics that share the same definition or are similar were merged. In appendix A (table A.3) the characteristics are stated and whether they need to be merged from other numbers. An example: number 17 "Be able to understand key risks" is merged from two characteristics. Number 17 itself and number 41 which is "Have control of uncertainty factors". These characteristics both indicate risk management and were therefore merged. The total occurrence becomes the summation of the two characteristics.

The merged characteristics form the Q-set. Typically, the Q-set is around three times smaller than the concourse (Corr, 2001) and characteristics that are only mentioned once or twice in a total of 15 papers are not significant enough to include in the Q-set. Therefore, the Q-set consists of 35 statements. To ensure that every important characteristic was included, a test was done with an experienced project manager that has experience with steering committees. This project manager named all important characteristics that, according to him, are important for a steering committee member. All essential characteristics that the project manager mentioned were found in the formed Q-set, which concludes that the Q-set is complete. The Q-set is found below in table 3.2

Q-set			
1	Have seniority and power within the organization	19	Be able to make comprehensive decisions
2	Be able to provide resources	20	Be able to support project manager
3	Be able to evaluate project manager performance	21	Have knowledge of project management
4	Be able to communicate effectively	22	Have knowledge of subject matter
5	Be able to provide leadership and vision	23	Be able to keep pace in project
6	Be decisive	24	Be able to empower the project manager
7	Have social skills	25	Be able to understand the key drivers
8	Be able to manage stakeholders	26	Collaborate with own organization
9	Have genuine interest in project	27	Have sufficient time available
10	Be able to collaborate with project team	28	Have access to information
11	Understand own role	29	Be objective
12	Be able to set clear goals	30	Be able to handle ambiguity
13	Have constructive critical thinking	31	Understand the organization's strategy
14	Be able to motivate the project manager and project team	32	Network actively
15	Be able to understand the key risks	33	Have imagination/creativity
16	Be available and responsive	34	Have political knowledge
17	Be able to link project with organizational objectives	35	Focus on project outcomes
18	Be trustworthy		

Table 3.2: Q-set

3.3. Selection of P-set

The P-set is a selected set of respondents for the Q-sort interviews. The respondents' view on the statements results in the different perspectives and is therefore selected strictly. The literature study concluded that a project manager works very closely with the steering committee. Therefore, the P-set does not only contain steering committee members, but also project managers. All respondents have had experiences with projects that used steering committees. The projects satisfied these requirements:

- The project has to be ongoing or delivered recently. Meaning that the project should not have been delivered earlier than a year ago. respondents may not remember the problems and struggles of projects that were delivered a long time ago.
- Preferably, the projects should have had trade-offs based on the different interests in the project. Projects with conflicting interests better expose which characteristics of steering committee members are needed to get a well functioning steering committee.
- It is important that the steering committee corresponds with the term steering committee that is used in the thesis. There are a lot of different types of steering committees. This thesis has its focus on temporary governing bodies which are responsible for the governance and support of one project. Other types of steering committees, like permanent bodies, are not considered in the P-set.

Number	Code	Type
Respondent 1	P1	Project manager
Respondent 2	P2	Project manager
Respondent 3	P3	Project manager
Respondent 4	P4	Project manager
Respondent 5	P5	Project manager
Respondent 6	P6	Project manager
Respondent 7	P7	Project manager
Respondent 8	P8	Project manager
Respondent 9	P9	Project manager
Respondent 10	P10	Project manager
Respondent 11	P11	Project manager
Respondent 12	P12	Project manager
Respondent 13	P13	Project manager
Respondent 14	P14	Project manager
Respondent 15	S1	Steering committee member
Respondent 16	S2	Steering committee member
Respondent 17	S3	Steering committee member
Respondent 18	S4	Steering committee member
Respondent 19	S5	Steering committee member
Respondent 20	S6	Steering committee member
Respondent 21	S7	Steering committee member
Respondent 22	S8	Steering committee member
Respondent 23	S9	Steering committee member
Respondent 24	S10	Steering committee member
Respondent 25	S11	Steering committee member

Table 3.3: P-set

The P-set consists of 14 project managers and 11 steering committee members (see table 3.3). Throughout this thesis, the respondents are given a code. All project managers were identified as P1 to P14 and steering committee members as S1 to S11. The P-set is usually smaller than the Q-set (Brouwer, 1999). Having a Q-set of 35 statements makes 25 respondents an acceptable amount for this study.

Selecting the P-set is done with the support of KWD Resultaatmanagement. Experienced project managers that meet the above mentioned requirements from this firm are used as respondents. A snowballing approach was used by approaching steering committee members via the network of these project managers.

3.4. Conducting the Q-sort

The collection of data is done by conducting Q-sorts with an interview. There are 25 respondents and thus, 25 Q-sorts. This section describes how the Q-sorts was designed and what the sorting procedure was.

3.4.1. Q-sort design

The sorting distribution of the Q-methodology can be understood as the boxes in which the respondent places the statements. There are a lot of ways how these boxes can be distributed. First of all, the distribution is a forced choice instead of a free distribution. In a free distribution there are no boxes and the respondent is free to place the statements wherever he or she wants. A forced choice distribution was chosen in this study because it enables a completely and clearer comparison of Q-sorts and offers information in a more usable and easily processed format. (block 2008). Having a forced choice distribution means that there are as many boxes as statements, which means that there were 35 boxes. Furthermore, a symmetrical distribution was chosen which was numbered from a positive value at one pole, through zero, to the equivalent value at the other pole. The range of this symmetrical distribution was -3 to 3. Below, figure 3.1 shows the Q-sort distribution.

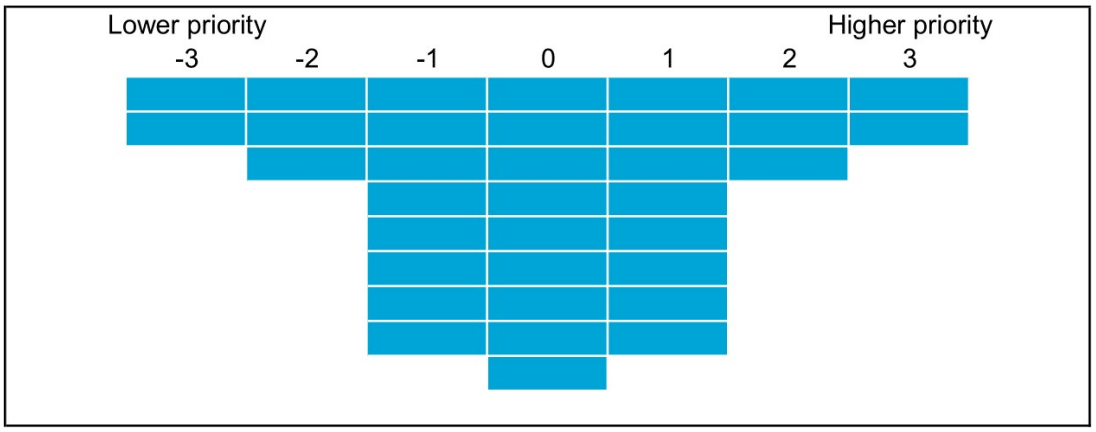

Figure 3.1: P-set

3.4.2. Procedure

The respondent had to sort the statements and answer the questions that were asked about the reasoning behind the sorting. The respondent was given the objective to sort the characteristics based on how important they are for a steering committee member to have for getting a well functioning steering committee. The literature review concluded that the prioritization of steering committee member characteristics may depend on the context. Therefore, questions were asked in addition to completing the Q-sort to understand the background of the respondent and the context in which the respondent thinks. These question were asked in advance:

- **What is your steering committee experience?**
  It is important to know if the respondent worked with different steering committees and what their role was.

- **In what type of organization was the steering committee active?**
  The answer of this question shows what the size of the organization is/was and what kind of organization it is. In this thesis, a organization with more than 500 employees is considered as large (voor de Statistiek, 2016).

- **Is there an ideal steering committee?**
  The respondent can have an opinion whether there is an ideal steering committee or whether it depends.
- **Is there an ideal steering committee member?**
  The respondent can have an opinion whether there is an ideal steering committee member or whether it depends.
- **What is a well functioning steering committee?**
  The objective of the Q-sort is to get a prioritization of the characteristics of a steering committee member for a well functioning steering committee. However, it is important to understand what the respondent thinks a well functioning steering committee is.

The respondent substantiated why they chose to sort the statements a specific way. There were some situations where a question needs to be asked: when a statement was sorted on -3, -2, 2 or 3; when a statement was directly placed without the respondent needed to think; when the respondent was thinking longer and doubting; when the respondent chose to move a statement to a different value. During the sorting the researcher tried to get a dialogue with the respondent to encourage the respondent to explain their choices. However, the researcher tried to stay objective at any time to prevent influencing the choices of the respondent. When all characteristics were given a place on the Q-sort, the researcher summarized the result of the Q-sort to check if the respondent is satisfied with their sort and to check if the researcher understands the respondent's reasoning. The data of the Q-sort was then collected. This data is used for the factor analysis (see chapter 4). The interviews were in-person, recorded and used to describe the perspectives.

3.5. Conclusion

This chapter explained the process of setting up the Q-study for this thesis. Reviewing literature and practitioner's books of steering committees, project sponsors and management teams led to a list of 106 potential characteristics of steering committee members (table: 3.1). While the Q-set gives a list of characteristics that are probably the most relevant, the Q-concourse gives a list of all potential relevant characteristics and thereby answers the first sub-question: "What are the potential relevant characteristics of steering committee members?" 25 respondents, including 14 project managers and 11 steering committee members, were asked to fill in the Q-sort. In addition, questions were asked to understand the context from which the respondent completed the Q-sort. In the next chapter, the results from the Q-sorts are analyzed.

4

Steering committee member characteristics perspectives

The Q-sorts of the respondents revealed that there are differing opinions on what characteristics a steering committee member should possess in order to have a successful steering committee. While every opinion is different, they can be clustered to form a factor. The number of factors can be determined by analyzing the data. In this chapter, this analysis has been performed and the number of factors on the subject has been determined. The perspectives from these factors are then described based on the results of the Q-sorts and the interviews that were conducted.

4.1. Factor analysis

Factor analysis consists of factor extraction and factor rotation. After completing these steps, the data has been analyzed to describe the perspectives.

4.1.1. Factor extraction

The extracting of a factor is done by performing a few steps. First, the correlation matrix is analyzed. The correlation matrix shows the relationship of each Q-sort with another Q-sort (see table 4.1). The correlation matrix reveals that many correlations have a positive value. This indicates that respondents often agree on things more than they disagree. However, both high and low correlated Q-sorts can be found, indicating that different perspectives may exist. Later in this chapter, an overview is given of the specific characteristics on which respondents generally agree and those on which they do not.

Participant	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
P1	100	24	39	9	38	21	62	46	47	58	49	25	22	28	12	12	36	7	25	28	30	37	46	13	45
P2	24	100	38	24	21	17	25	16	39	33	20	5	0	13	13	37	-5	-18	18	7	-5	-30	41	4	13
P3	39	38	100	45	55	51	50	36	39	46	43	26	33	57	22	53	57	-1	17	54	7	22	53	11	43
P4	9	24	45	100	42	22	37	16	37	36	26	14	33	9	22	41	25	13	0	39	-25	-8	29	0	17
P5	38	21	55	42	100	67	33	18	55	49	45	22	36	43	29	59	58	17	49	43	12	1	42	25	37
P6	21	17	51	22	67	100	24	-9	29	28	51	37	17	49	14	53	43	0	20	49	32	11	37	-1	20
P7	62	25	50	37	33	24	100	34	41	63	53	32	28	36	24	36	28	-1	11	7	20	20	49	3	34
P8	46	16	36	16	18	-9	34	100	26	50	28	0	55	13	38	24	34	34	16	20	24	26	41	26	25
P9	47	39	39	37	55	29	41	26	100	74	47	7	29	51	22	42	49	-7	46	-1	5	-3	43	17	46
P10	58	33	46	36	49	28	63	50	74	100	63	21	47	57	37	58	55	16	34	14	33	20	51	26	45
P11	49	20	43	26	45	51	53	28	47	63	100	51	24	50	24	38	49	9	25	30	53	28	42	12	29
P12	25	5	26	14	22	37	32	0	7	21	51	100	8	32	20	13	12	5	-11	20	24	26	22	-8	12
P13	22	0	33	33	36	17	28	55	29	47	24	8	100	28	36	46	34	38	30	18	26	26	14	29	26
P14	28	13	57	9	43	49	36	13	51	57	50	32	28	100	22	53	43	-13	33	16	20	21	26	18	32
S1	12	13	22	22	29	14	24	38	22	37	24	20	36	22	100	50	22	17	16	30	16	1	16	41	22
S2	12	37	53	41	59	53	36	24	42	58	38	13	46	53	50	100	46	25	39	33	21	-1	25	36	26
S3	36	-5	57	25	58	43	28	34	49	55	49	12	34	43	22	46	100	24	29	34	16	28	28	20	50
S4	7	-18	-1	13	17	0	-1	34	-7	16	9	5	38	-13	17	25	24	100	21	25	33	26	0	24	13
S5	25	18	17	0	49	20	11	16	46	34	25	-11	30	33	16	39	29	21	100	5	36	12	29	39	51
S6	28	7	54	39	43	49	7	20	-1	14	30	20	18	16	30	33	34	25	5	100	9	24	28	21	22
S7	30	-5	7	-25	12	32	20	24	5	33	53	24	26	20	16	21	16	33	36	9	100	55	17	20	25
S8	37	-30	22	-8	1	11	20	26	-3	20	28	26	26	21	1	-1	28	26	12	24	55	100	20	26	46
S9	46	41	53	29	42	37	49	41	43	51	42	22	14	26	16	25	28	0	29	28	17	20	100	16	33
S10	13	4	11	0	25	-1	3	26	17	26	12	-8	29	18	41	36	20	24	39	21	20	26	16	100	20
S11	45	13	43	17	37	20	34	25	46	45	29	12	26	32	22	26	50	13	51	22	25	46	33	20	100

Table 4.1: Correlation matrix

This correlation matrix has an extensive amount of data with a lot of dimensions and is therefore difficult to analyze. By performing a Principal Component Analysis (PCA) the dimensionality of the data can be reduced while the most of the variation in the data set is retained (Jolliffe, 2002). The data can be grouped in factors which makes the data easier to interpret. These factors create the basis for the different perspectives that are found on important characteristics for steering committee members. Executing a PCA on the data set resulted in eight different factors (see table 4.2). Having only 25 respondents in this study, results are more clear and more telling when using less factors. This can be explained by determining the amount of factors based on a few criteria. The calculations of these criteria can be found in appendix A.

Participant	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
P1	0,6278	0,0958	0,335	-0,3607	0,1882	-0,1738	0,1232	-0,0371
P2	0,3368	-0,5316	-0,1422	-0,3149	0,0428	0,1713	0,4845	-0,0972
P3	0,7425	-0,2728	0,0616	0,1761	0,1608	-0,2396	0,0574	0,2228
P4	0,446	-0,3858	-0,2841	0,2077	0,4373	-0,123	-0,1774	-0,1711
P5	0,7428	-0,2031	-0,164	0,254	-0,2106	-0,1497	0,0126	-0,1876
P6	0,5832	-0,259	0,2373	0,5282	-0,2852	0,027	0,0999	-0,1473
P7	0,634	-0,1521	0,265	-0,2966	0,3101	0,1329	-0,1285	-0,0066
P8	0,5121	0,3432	-0,2124	-0,3124	0,4773	0,0177	0,0323	0,0366
P9	0,6831	-0,2897	-0,1195	-0,3987	-0,2249	-0,0617	-0,2103	-0,075
P10	0,8278	-0,019	-0,0293	-0,3211	0,0392	0,1629	-0,1967	-0,039
P11	0,7238	-0,0048	0,3858	0,0475	-0,0306	0,2583	-0,044	-0,1486
P12	0,3547	-0,0508	0,5418	0,2984	0,16	0,3636	-0,0317	0,0336
P13	0,5465	0,3292	-0,3495	0,0223	0,1839	0,119	-0,2933	-0,073
P14	0,639	-0,1499	0,1577	0,044	-0,3632	0,1471	-0,2552	0,3582
S1	0,4576	0,1168	-0,3803	0,1164	0,1561	0,4246	0,0906	0,3517
S2	0,7011	-0,1311	-0,3902	0,2328	-0,1589	0,2779	-0,0248	-0,0012
S3	0,6858	0,0844	-0,0431	0,1581	-0,108	-0,3309	-0,3393	0,0388
S4	0,2287	0,5927	-0,2928	0,2429	0,1947	0,0084	-0,0196	-0,4684
S5	0,4919	0,2056	-0,266	-0,2201	-0,5731	-0,1281	0,1921	-0,1982
S6	0,463	0,0218	-0,0428	0,6046	0,2607	-0,2688	0,3465	0,1006
S7	0,3929	0,5889	0,3482	0,0078	-0,2295	0,3142	0,1872	-0,233
S8	0,3404	0,6593	0,4228	0,057	0,0668	-0,2215	0,0081	0,2099
S9	0,6217	-0,1767	0,1533	-0,2133	0,1701	-0,1301	0,3969	-0,0696
S10	0,3463	0,3958	-0,4233	-0,0309	-0,173	0,0961	0,2954	0,3714
S11	0,6	0,1964	0,0545	-0,1887	-0,1577	-0,4311	-0,0017	0,1232

Table 4.2: Unrotated factor loadings

The first criterion is the " Kaiser-Guttman criterion" (Watts and Stenner, 2012), meaning that all eigenvalues of the factors should be above the value of 1. A factor with an eigenvalue that is lower than 1 accounts for less variance than a single Q-sort. Having a factor with a lower eigenvalue than 1 would not help reducing the data and is therefore left out (Watts and Stenner, 2012). In the data of this thesis, factor 1 to 7 justifies the Kaiser-Guttman criterion.

The second criterion is having a cumulative explained variance larger than 50% (Suprapto, 2016). When this criterion is met, the solution explains more than half of the Q-sorts. At least three factors are needed for this thesis to have a cumulative explained variance higher than 50%.

The third criterion is to have at least two significantly loading Q-sorts per factor (Brown, 1980). A 2, 3 and 4-factor solution satisfies this criterion, the 5-factor solution and higher do not satisfy this criterion.

The fourth criterion used is the " Humphrey's rule" (Brown, 1980). The strict version of this rule states

that the cross-products of the two highest loadings of the factor should be higher than twice the standard error. This is the case for the 2, 3 and 4-factor solution.

Table 4.3 shows the scores of the different factor solutions on the criteria. Only a 3 and a 4 factor solution satisfies all criteria. Deciding the amount of factors is not an exact science:"Objectively, there is no one correct number of factors to use as any number of factors will provide insights into how the respondents think" (Damio, 2018). Using the scores of the factor solutions on the criteria, together with the perspectives that the interviews gave, a 4-factor solution is chosen to describe the perspectives. A 4-factor solution has a higher explained variance. Moreover, a 3-factor solution consists of a bi-polar factor, where the factor is defined by both positively and negatively loading Q-sorts. According to Watts and Stenner (2012), it is advisable to create separate factors of the bi-polar one. In this thesis, this will lead to a splitted factor including little Q-sorts.

Criteria	2 factor solution	3 factor solution	4 factor solution	5 factor solution	6 factor solution	7 factor solution	8 factor solution
Kaiser-Guttman	x	x	x	x	x	x	
Cumulative explained variance larger than 50%		x	x	x	x	x	x
Two significantly loading Q-sorts per factor	x	x	x				
Humphrey's rule strict	x	x	x				
Cumulative explained variance	43%	51%	58%	64%	69%	73%	77%

Table 4.3: Choosing which factor solution based on criteria

4.1.2. Factor rotation

Next, the unrotated factor loadings of four chosen factors are used as coordinates to map the relative positions of the Q-sorts. By rotating the factors there can be ensured that the factor offers the best viewpoint on the perspectives (Watts and Stenner, 2012). The factors are rotated by a Varimax rotation, which conducts the process automatically using statistical data. The product of the rotation is the rotated factor loadings. These rotated factor loadings are shown in table 4.4.

Q-sort	Factor 1	Factor 2	Factor 3	Factor 4
P1	0,7255	0,3217	0,1027	0,0733
P2	0,5193	-0,4844	-0,0199	0,1037
P3	0,4804	-0,0361	0,129	0,6418
P4	0,19	-0,3768	0,1852	0,509
P5	0,3523	-0,116	0,3252	0,6641
P6	0,1947	0,1124	-0,0759	0,8284
P7	0,7305	0,1017	0,0203	0,1971
P8	0,4046	0,1503	0,5759	-0,0696
P9	0,756	-0,2522	0,2495	0,1624
P10	0,7649	0,0386	0,3897	0,2262
P11	0,5725	0,3491	0,0366	0,4733
P12	0,2164	0,3968	-0,274	0,4813
P13	0,1829	0,1046	0,6674	0,1999
P14	0,4893	0,0838	0,0858	0,4515
S1	0,1062	-0,0731	0,5326	0,2846
S2	0,2572	-0,2142	0,5091	0,5865
S3	0,3368	0,1542	0,3712	0,4788
S4	-0,2221	0,3238	0,6178	0,1116
S5	0,3515	0,0235	0,5278	0,028
S6	-0,0814	0,1387	0,2196	0,7129
S7	0,2159	0,7173	0,2373	0,0709
S8	0,1524	0,8167	0,196	0,0623
S9	0,6449	0,0225	0,0784	0,2533
S10	0,0429	0,0721	0,6703	0,0206
S11	0,4962	0,2393	0,3385	0,1382
% Explained variance	**19**	**9**	**13**	**16**
Colored cell	Significance 0.01 level			

Table 4.4: Rotated factor loadings

The rotated factor loadings are assessed on their significance level to rate if rotated factor loadings are significant to that factor. A significance level of 0.01 means that the factor loading is closer to the factor than 99% of all Q-sorts possible. This level would be an appropriate level to start with. Calculating the significance on this level has been described in this thesis. It was used as a criterion for choosing the amount of factors. Each factor loading with an absolute value larger than 0,436 could be a significant one and closely approximate the viewpoint of that factor. However, some Q-sorts have significant factor loadings in multiple factors. These Q-sorts are confounded. These Q-sorts are normally not included in the analysis as they are not beneficial for creating distinctions between the factors. However, if the perspective found in the interview of the confounded Q-sort has greater similarities with one factor, they were still included in that factor. This was the case for the confounded Q-sorts of P2, P3 and P11. If the factor loading does not exceed the 0.01 significance level, it is a non-loader. Table 4.4 shows initially no non-loaders. However, Q-sort P2 and S3 have factor loadings which are close to be confounded and exceed the 0.01 significance level barely. Therefore, these Q-sorts are chosen to be non-loaders. Table 4.5 gives an overview of the Q-sorts that are used for describing the perspectives. In total, 21 of the 25 Q-sorts are used. The second factor only has two significant factor loadings (S7 and S8). While this is not favorable, it is still a reliable factor estimate. According to Brown (1880), a factor estimate should be the composite of at least two Q-sorts.

Factor	Q-sort numbers	Total	Cumulative total
1	**P1; P2; P7; P9; P10; P11; S9; S11**	8	8
2	**S7; S8**	2	10
3	**P8; P13; S1; S4; S5; S10**	6	16
4	**P3; P4; P5; P6; S6**	5	21
Confounded	**P14; S2;** (P2; P3; P11)	2	23
Non-loader	**P12; S3**	2	25

Table 4.5: Q-sort distribution

All chosen significant factor loadings will contribute to the final factor estimate. However, the factor loading with a higher value will contribute proportionally more than factor loadings with a lower value (Watts and Stenner, 2012). The amount they contribute is based on their factor weights. Appendix (table A.10) shows the Z-scores that the statements received for each factor. These Z-scores indicate the importance of the characteristics of steering committee members for a well-functioning steering committee for each factor, meaning that there are four different perspectives on what the most important characteristics are. The four factors can be visualized in the factor arrays, or composite Q-sorts, which show a typical distribution of the statements for that factor. These factor arrays can be found in appendix A.3.

4.2. Describing perspectives

Describing the perspectives involves two parts. The first part is identifying the distinctive statements in each factor. This is done by creating crib sheets for each factor, which list the highest and lowest statements for that factor, as well as any statements that are relatively more positive or negative compared to other factors. These crib sheets, which can be found in appendix A.5, show the statements that differentiate each factor from the others. The second part needed for describing the perspectives is understanding the motivations of the respondents behind their Q-sorts. For each statement that was given a score of -3, -2, 2, or 3, the motivation of the respondent was recorded. In the perspectives described below, all characteristics that distinguish the perspectives are written with argumentation based on the answers given by the respondents in the interviews. When a characteristic is stated, the corresponding number and rank of that characteristic for the factor is noted. When justification for the characteristic is provided, the code of the corresponding respondent is also noted.

The perspectives are described below. The description begins with a brief explanation of who in this factor loads how much of the study variance is explained. The italicized part provides the essence of the perspective that the researcher has been able to determine from the results. Then, the table is presented with all the scoring characteristics in the factor, with the last pieces providing the justification for why the respondents have sorted the characteristics in this way.

4.2.1. Perspective 1: The project champion

There are 8 respondents that are associated with this factor and it explains 19% of the study variance. The group of respondents consist of six project managers and two steering committee members. Thus, this factor is primarily based on the perspective of project managers.

Examining the highest scoring characteristics found in this perspective, it is observed that this type of steering committee member can be seen as a project champion who gains commitment to the project from other stakeholders in the permanent organization by being a project ambassador. By having a genuine interest in the project, this steering committee member is willing to battle for the project and by having seniority and power within the permanent organization, they are able to get this commitment from others in the organization. By being able to communicate their comprehensive decision making they justify their actions. This type of steering committee member does not need to have an active role in the project management. Its role is more important in relation to the permanent organization.

Table 4.6 shows all characteristics with their corresponding z-score in this factor. The substantiation, based on answers of respondents loaded in this factor, are given in the sections below the table.

Table 4.6: Factor 1: Z-scores

The most distinguishing characteristic of this steering committee member is its genuine interest in the project (9; +1.874). “If a steering committee member does not have genuine interest in the project he/she is more busy with the job he/she has in the organization” (P1). The respondents in this factor think that the steering committee member needs to feel pain when the project is not successful. “This way, they are willing to work harder for the project” (P11). In addition, the respondents think that the steering committee member with interest in the project is better prepared, which is needed for making the decisions.

While the respondents loading to this factor think that it is - compared to other perspectives - not that important to be decisive (6: +0.53), they think that a steering committee member needs to be able to make comprehensive decisions (19: +1.198). “They must be able to make complex decisions” (S9). “They must be able to explain why they chose this decision” (P10). Respondent P10 adds: ‘“For the decision-making there must be cohesion between the members”. The respondents loaded in this fac-

tor think that the steering committee members must have the same vision and all interests have to be covered. They think it is allowed to have some subjectivity with those decisions, because it is not needed to be objective (29; -1.305). They think it is more important that a steering committee member is transparent about his interests. “They must be trustworthy (18: +0.879), because the decision that a steering committee member takes has no value if he/she is not trustworthy” (P7).

Furthermore, the respondents loading to this factor think that these decisions must stand. Therefore, they think it is important that this steering committee member has seniority and power within the organization (1; +1.71). “Mandate is needed to make the decisions” (P10, P9, S9). “The project manager misses this power and it is the task of the steering committee member to compensate for that” (P7). While the respondents loaded to this factor think that it might be difficult to find steering committee members that have seniority and power within the organization who are responsive, responsiveness and availability is still considered as an important characteristic for a steering committee member (16; +0.676). “The project suffers if the steering committee members are not available and responsive” (P9). The respondents think that this member also needs to show leadership and vision (5: +0.925). “Projects often induce change and a steering committee member should therefore show confidence” (P11).

While the respondents loading to this factor think that a steering committee member must be involved with the project, they think they should not be involved with the management of the project. The respondents think that a steering committee member does not need to have knowledge of project management (21: -2.359). “If they know too much of project management, the steering committee member tries to interfere with the project management of the project manager” (P1). Also knowledge of the subject matter is not seen as important (22: -1.106). “Having steering committee members with much knowledge of subject matter lead to conversations being too operational” (P10). The respondents loading to this factor think that the communication of a steering committee member must be effective (4: +1.194), because this is the basis for collaboration. They also think that a steering committee member must have good collaboration with their own organization (25: +0.436), but don’t need to collaborate with the project team (10: -1.749). The respondents loaded to this factor think that this is a task for the project manager.

4.2.2. Perspective 2: The project governor

There are 2 respondents that are associated with this factor and it explains 9% of the study variance. The group of respondents consist of two steering committee members. Thus, this factor is based on the perspective of steering committee members.

In this perspective, the steering committee member does not have a managing role but rather empowers the project manager and focuses more on the governing of the project by positioning the project organization in relation to the environment. This is done internally by having a focus on the project outcomes and connecting them to the organization's objectives to assess whether these objectives are being achieved. The positioning of the project organization is done externally through effective stakeholder management. This steering committee member is not responsible for the governance of the project in earlier stages in the project, however does provide governance throughout the project by making strategic decisions. While this steering committee member is not actively managing the project organization, the steering committee members have knowledge of project management and subject matter which makes them able to ask the right questions to the project manager.

Table 4.7 shows all characteristics with their corresponding z-score in this factor. The substantiation, based on answers of respondents loaded in this factor, are given in the sections below the table.

Table 4.7: Factor 2: Z-scores

Understanding the organization's strategy (31: +0.187) is not seen as unimportant by respondents loading to this factor. However, they think that linking a project with the organization objectives (17; +1.975) is more important than just knowing the strategy of the organization. "If the steering committee member knows what is needed in the organization, they must let the project move within the boundaries of the desired outcomes and objectives" (S8) . The respondents in this factor think that a steering committee member must have a focus on the project outcomes (35; +2.257). "A project needs to be terminated if the project outcomes do not connect with the objectives of the organization, a steering committee member must keep in mind why this project exists and must have an overarching view on the project" (S7).

While social skills (7: -0.379) are not seen as necessary by respondents loading in this factor, they think that a steering committee member should have good constructive critical thinking (13: +1.222). They think that a steering committee member also should have project management knowledge (21: 0.752) and knowledge of subject matter (22: +0.283). "A steering committee member knows to ask the right questions" (S8). Moreover, the respondents loading to this factor think that a steering committee member knows that the project manager needs support (20: 0.283) and empowerment to do his/her duties (24: +1.788). "A project manager is the most important person to make the project a success, because they can ensure that the project is within scope, time and budget" (S7). "Moreover, by giving mandate to the project manager, there can be ensured that he/she can do his/her job" (S8). The respondents think that evaluating the project manager performance (3: +0.096) also has its function. "Challenging the project manager does bring out the best in him/her" (S7).

There are some characteristics that were not seen as important for a steering committee member by the respondents in this factor. They think that information should be provided and access to this information (28: -1.692) is not their task. "A steering committee should be provided with information by other parties" (S7). Same for keeping the pace in the project (23: -1.222), this is seen as a project management task. Also setting clear goals (12: -1.222) is not seen as their task by the respondents loading to this factor. "The setting of goals is already done before the steering committee is formed" (S8).

For this steering committee member, having sufficient time available (27: -1.692) is not seen as necessary by these respondents. "A steering committee member must prioritize his/her task as steering committee member highly and should make time" (S8). The respondents loading to this factor think that a steering committee member does not always have to respond and be available (16: -1.035) though. "The availability of a steering committee member is planable" (S7).

Compared to other perspectives, the respondents with this perspective think that collaboration with their own organization (26: 0) and the project team (10: +0.187) is quite important for this steering committee. On the other hand, the respondents don't put an emphasis on leadership and vision (5: -0.752) as characteristic for a steering committee member.

4.2.3. Perspective 3: The strategic manager

There are 6 respondents that are associated with this factor and it explains 13% of the study variance. The group of respondents consist of two project managers and four steering committee members who mostly were active in relatively smaller organizations . One of the project managers mentioned that he also had experience as a steering committee member. Thus, this factor is mainly based on the perspective of steering committee members.

In this perspective, the steering committee member plays an active role in steering the project organization by setting goals based on their understanding of the organization's strategy and making decisions with a focus on the project outcomes. This steering committee member provides leadership and vision by managing the strategic direction of the project and therefore has an important role in relation to the temporary project organization.

Table 4.8 shows all characteristics with their corresponding z-score in this factor. The substantiation, based on answers of respondents loaded in this factor, are given in the sections below the table.

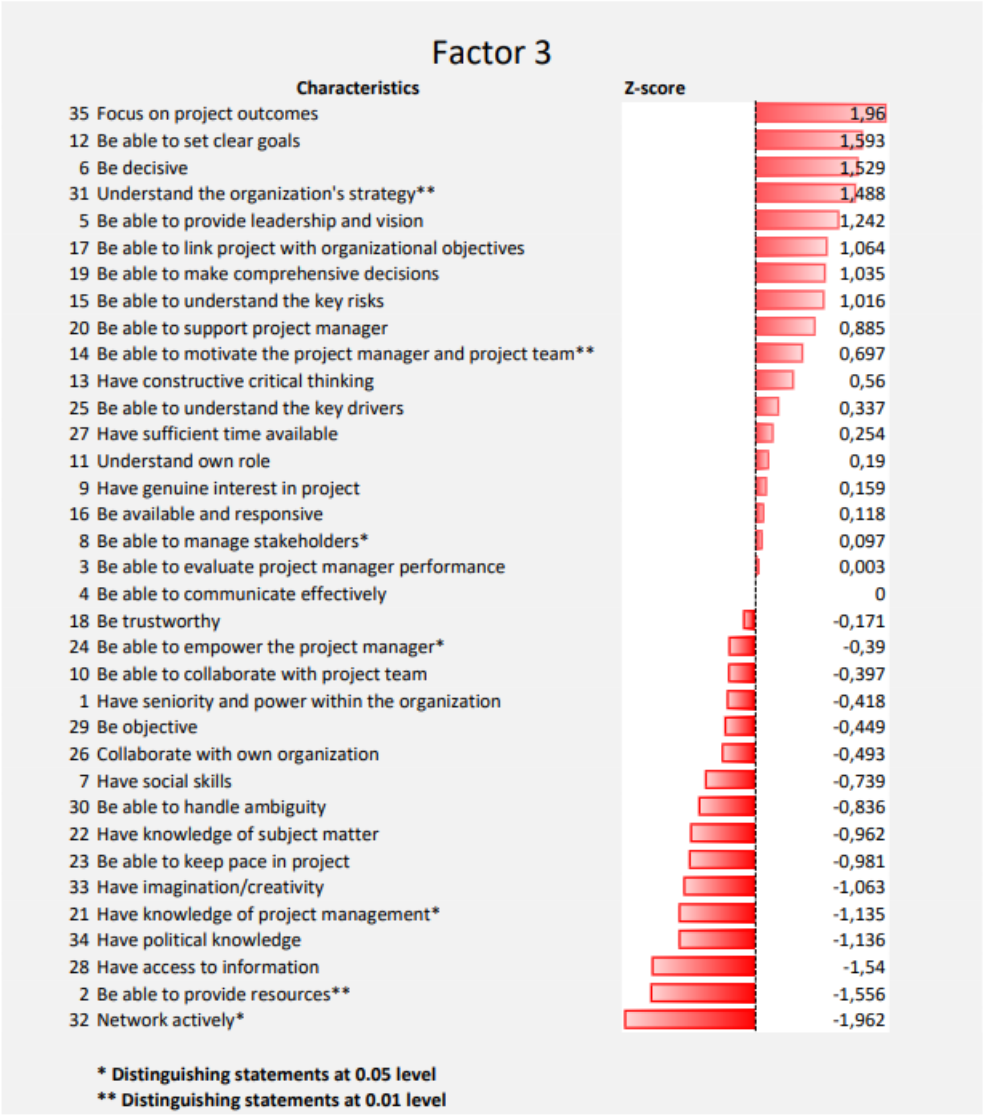

Table 4.8: Factor 3: Z-scores

Same as for the respondents loading to perspective 2, they think that a steering committee member needs to have a great focus on the project outcomes (35: +1.96). “The project outcomes are the goals that should be kept in mind” (S4). Setting these clear goals (12: +1.593) are considered necessary by the respondents in this factor, as these are the goals that determine how the project is steered. The respondents also think that to set these goals it is essential that the organization’s strategy is perfectly understood (31: +1.488). “The choices that the steering committee member makes is in the context of the strategy and understanding this strategy is needed to know in which direction to steer” (S10). Moreover, the respondents loading to this factor think that a steering committee member needs a vision for this project and needs to show leadership (5: +1.242). “Without leadership, the meetings are a tea party and there is no steering” (S10). Also decisiveness (6; +1.529) is seen as an important characteristic for a steering committee member by the respondents loading to this factor. “Taking decisions is one of the main tasks of a steering committee member” (S1).

Motivating the project manager and project team (14: 0.697) is seen as an important aspect compared to the respondents in the other perspectives. It is not seen as a task specified to a steering committee member. However, a respondent mentioned: ”Motivation is the most important factor for the functioning of the whole team” (S4). Also collaboration with the project team (10; -0.397), which is not seen as a steering committee task, is seen as beneficial for the project by the respondents loading to this factor.

While leadership and vision are seen as important characteristics by the respondents in this factor, seniority and power within the organization (1: -0.418) is considered less important. One respondent corresponding to this perspective does not believe in authority from a position: “It is about the person who you are and what you know” (S10). Also political knowledge (34: -1.136) is seen as unnecessary for a steering committee member by these respondents. “Political knowledge is especially unnecessary in organizations where there are fewer trade-offs of interests” (S5).

While the importance of being able to network actively (32; -1.962) is seen as organization dependent by these respondents, it is not really considered a characteristic for a steering committee member. They think that a steering committee member does not need to network. “You must be able to work together constructively” (S10). The providing of resources (2: -1.556) is also a characteristic that might be dependable on the responsibilities of the steering committee. In this perspective, a steering committee member does not have to provide the resources. “Providing resources is very important for a project. However, this is no task of a steering committee member” (S4).

4.2.4. Perspective 4: The project sponsor

There are 5 respondents that are associated with this factor and it explains 16% of the study variance. The group of respondents consist of 4 project managers and one steering committee member. While this perspective looks like it is based primarily on project managers, there were a few confounded Q-sorts of steering committee members who also could have been distributed to this perspective. Thus, no conclusion could be made whether this perspective is found more among project managers than steering committee members.

In this perspective, the steering committee member plays an active role in steering the project by making decisions to reach the project goals that are in the interest of the permanent organization. Thus, this steering committee member has an important role in relation to the permanent organization. This steering committee member who has a senior function in the organization can use their position of power to enforce decisions, provide resources and give political support. Managing the project is not seen as a task for this steering committee member and the well-functioning of the steering committee member is based on his performance and not the performance of the project manager. The project manager is responsible for his own support, empowerment and project team.

Table 4.9: Factor 4: Z-scores

Table 4.9 shows all characteristics with their corresponding z-score in this factor. The substantiation, based on answers of respondents loaded in this factor, are given in the sections below.

The respondents loading to this factor think that a steering committee member should feel responsible for providing the resources (2: +1.579). “Not all steering committee members should be able to do this, however, it is crucial for the project” (P3). “The project cannot be successful without resources and the project manager is unable to do his work without getting the people needed” (P6). On the other hand, the respondents loading to this factor think that a steering committee member should feel less responsible for the support of the project manager (20, -1.1). “A steering committee should be looking at the benefits of the project and be less active in the support of the project manager” (P6). Also empowering the project manager (24, -1.036) is not seen as the responsibility of a steering committee member. “The project manager is responsible for his/her empowerment” (P4). Moreover, motivating the project manager and project team (14, -1,149) is not seen as a needed characteristic by the respondents as it can be assumed that the project manager and the project team is experienced and motivated. Also evaluating the project manager (3: -0.593) is not seen as important. This task, together with collaboration with the project team (10; -2.426) are seen as project manager tasks.

According to the respondents loading in this factor, this steering committee member needs to be very decisive (6: +1.775) and has the seniority and power within the organization (1: +1.717) to give impact to these decisions. The respondents think that mandate is required to enforce decisions. “You need steering committee members that have enough authority to be able to provide the governance” (P5). This means not only their behavior, but also their position. “If a CFO does not accept a decision it is more powerful than when a junior does not accept a decision” (P4). A lot of emphasis in this perspective is laid on making relatively fast decisions. “No decisions are not beneficial for the pace of the project and the project manager needs to send reminders to the steering committee member if this is the case” (P3). “A bad decision is better than no decision” (P5). This can be substantiated by this perspective having less priority in having the steering committee member be able to make comprehensive decisions (19; -0.526). “Small issues always arise from the project and have to be removed, otherwise a solution is never met” (S6).

Despite having a bad decision rather than no decisions, the respondents loading in this factor think that the decisions should not be made without thought. The key risks of the project must be understood (15: +1.384) to make good decisions. These risks are the potential problems for the project and may have a lot of impact on the success of the project (P3). Also the stakeholders with much power may have a large impact on the project (P3, S6). It is therefore important that these stakeholders are managed well (8: +1.252)

While being able to link the project with the organizational objectives (17: 0.244) and understanding the organization’s strategy is relatively less important than in other perspectives, being able to set clear goals (12: +1.183) and leadership and vision (5: +1.306) is still seen as important for a steering committee member. “A steering committee member must have the vision to communicate the direction of the project” (P4). The respondents think that having creativity/imagination (34:-1.491) would only keep the steering committee member from steering. “The creativity/imagination characteristic is important for a project, but only for the project manager” (P6).

4.3. Consensus and disagreements

The perspectives each offer a different view on which characteristics are important for a steering committee member for a functioning steering committee. The perspectives will overlap on some aspects while other aspects are contradictory. In this section, we will look at the consensus and disagreements between the perspectives. In table 4.10, all of the characteristics from the Q-set are displayed. In the subsequent columns, the scores for the respective characteristics in the factors are shown. The last column displays the Z-score variance, which indicates the amount of variance in the scores that the characteristic received in the factors. A low variance means that there was a lot of consensus for this characteristic. A high variance means the opposite. It is important to understand that a characteristic with a low Z-score variance does not necessarily mean that every respondent agreed with each other. Some characteristics within the perspectives have received both high and low scores. In this case, these characteristics have a lower significance level in the perspective.

Nm	Statement	Factor 1	Factor 2	Factor 3	Factor 4	Z-score variance
11	Understand own role	0	1	0	1	0,052
25	Be able to understand the key drivers	1	1	1	0	0,053
30	Be able to handle ambiguity	0	-1	-1	-1	0,058
33	Have imagination/creativity	-1	-1	-1	-3	0,069
23	Be able to keep pace in project	-1	-2	-1	0	0,092
7	Have social skills	0	-1	-1	-1	0,097
26	Collaborate with own organization	0	0	-1	0	0,108
15	Be able to understand the key risks	1	1	1	2	0,109
18	Be trustworthy	1	0	0	1	0,16
3	Be able to evaluate project manager performance	-1	0	0	-1	0,183
8	Be able to manage stakeholders	1	2	0	1	0,222
6	Be decisive	0	1	2	3	0,228
13	Have constructive critical thinking	0	2	1	1	0,238
29	Be objective	-2	-2	-1	0	0,25
4	Be able to communicate effectively	2	0	0	0	0,259
22	Have knowledge of subject matter	-2	1	-1	-1	0,292
28	Have access to information	-1	-3	-2	-2	0,346
17	Be able to link project with organizational objectives	1	3	1	0	0,38
16	Be available and responsive	1	-1	0	1	0,401
19	Be able to make comprehensive decisions	2	1	1	-1	0,459
31	Understand the organization's strategy	0	0	2	0	0,478
34	Have political knowledge	-1	-1	-2	1	0,484
27	Have sufficient time available	-1	-3	1	0	0,531
20	Be able to support project manager	-1	1	1	-2	0,561
14	Be able to motivate the project manager and project team	-1	-1	1	-2	0,575
35	Focus on project outcomes	1	3	3	1	0,607
32	Network actively	-2	-1	-3	0	0,672
5	Be able to provide leadership and vision	2	-1	2	2	0,709
9	Have genuine interest in project	3	0	0	-1	0,864
1	Have seniority and power within the organization	3	0	-1	3	1,023
10	Be able to collaborate with project team	-3	0	0	-3	1,083
24	Be able to empower the project manager	0	2	0	-1	1,111
12	Be able to set clear goals	0	-2	3	1	1,226
21	Have knowledge of project management	-3	1	-2	-1	1,256
2	Be able to provide resources	1	0	-3	2	1,291

Table 4.10: Consensus and disagreements

As depicted in Table 4.10, the consensus primarily lies within the characteristics that possess a neutral or negative score. These are the most important characteristics in which disagreements occur among perspectives. Therefore, there is no single characteristic that can be deemed essential for a steering committee member in every situation. Characteristics with low Z-score variance and neutral scores were frequently identified by respondents as ”Hygiene factors.” This implies that steering committee members must possess these characteristics, but they are not often missing in practice. Examples of these characteristics include ”Be trustworthy,” ”Collaborate with own organization,” ”Be able to handle ambiguity,” ”Understand own role,” and ”Understand organization’s strategy.”

Consensus can be found partially in characteristics that are not deemed important for a steering committee member, but fall under the responsibilities of the project manager. Examples of these include ”Have imagination/creativity” and ”Collaborate with project team.” Other characteristics where consensus was found regarding their unimportance were ”Network actively,” ”Have access to information,” and ”Be objective.” Respondents indicated that most steering group members already possess a network, making active networking unnecessary; access to information should simply be arranged and does not need to be done by the steering committee member; and being objective was seen as impossible in most situations.

As previously stated, there is no complete consensus on characteristics that are extremely important for a steering committee member. However, some characteristics tend to score slightly higher on average. ”Focus on project outcomes” frequently scored highly, as did ”Be decisive.” Additionally, ”Be able to understand the key risks” is often given a high priority.

The characteristics with the highest Z-score variance, which therefore have the most disagreement, are primarily characteristics that are based on tasks or knowledge where the importance greatly depends on the specific situation. Additionally, project managers tend to view certain characteristics differently than steering group members. More information on this can be found in the discussion.

Table 4.11 illustrates the correlation among the perspectives. The positive values in this matrix indicate that the perspectives are more aligned than opposed to one another.

	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1	1	0,2887	0,4312	0,5171
Factor 2	0,2887	1	0,3895	0,1819
Factor 3	0,4312	0,3895	1	0,3026
Factor 4	0,5171	0,1819	0,3026	1

Table 4.11: Correlation between perspectives

4.4. Conclusion

By extracting and analyzing the factors, it was determined that a 4-factor solution best represents the data. This indicates that there are 4 perspectives on the desired characteristics of a steering committee member. The lack of consensus in the most important characteristics for a steering committee member does indicate that indeed perspectives exist. Figure 4.1 shows these perspectives. In general, respondents working as project managers tend to fall more into perspectives 1 and 4, while respondents working as steering committee members tend to fall more into perspectives 2 and 3. It seems that the organization and the role of the steering committee also has an influence on the desired characteristics of steering committee members. Thus, it can be concluded that the perspectives are dependent on contingencies. The next chapter will delve deeper into what these contingencies are and why a perspective relates to these contingencies.

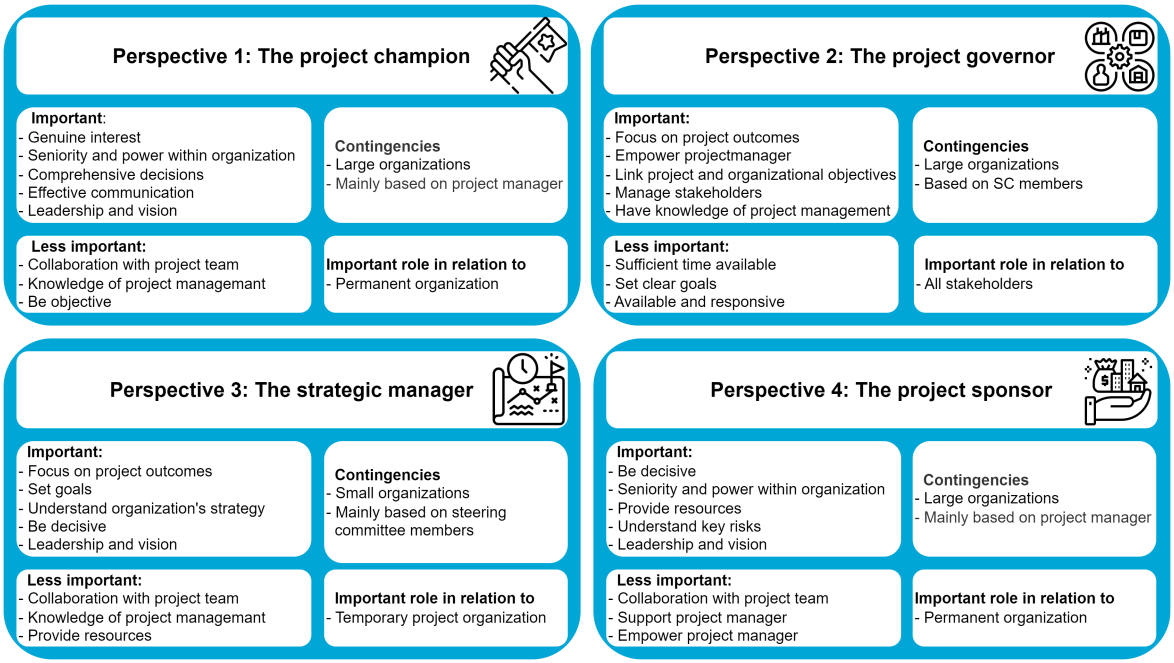

Figure 4.1: The perspectives

5

Steering committee member characteristics contingencies

The perspectives found in chapter 4 explain that there is no unanimity concerning preferred characteristics for a steering committee member. However, there are contingencies that arise from the data which may have influenced the sorting of the respondents. The contingencies that are found in the interviews were listed and presented to a group of project managers who are experts in their field. These experts used their practical experiences to substantiate the dependencies of the contingencies on the characteristics that a steering committee member needs for achieving a well-functioning steering committee.

5.1. Contingencies

Besides sorting the characteristics in the Q-sort, the respondents were asked to answer a few questions. These answers may help understand which contingencies exist in the perspectives. Below, the questions are stated with the answers given by the respondents.

What is your steering committee experience?
Almost all project managers that were interviewed have more than 15 years of experience in project management. Throughout those years, they worked with several or dozens of steering committees. There is not enough data on project managers with less experience to distinguish the data on this aspect. This is the same for steering committee members. However, there obviously is a distinction between respondents who are project managers and steering committee members.

What type of organization was behind it?
There were respondents who worked with or in steering committees in larger organizations with more than 500 employees and who worked with or in smaller organizations. Some organizations were more professional than others and some had less commercial interest than others. Out of the data is found that perspective 1, 2 and 4 are mostly based on respondents who worked with or in steering committees in larger organizations which often had some hierarchical elements. Perspective 3 on the other hand, were more in smaller organizations or organizations which were less professional.

Does an ideal steering committee exist or does it depend on contingencies?
Before the question was asked about the existence of the ideal steering committee member, the same question was asked for the whole committee. 17 out of 25 respondents do think that there is no ideal steering committee. According to these respondents, the requirements for a steering committee could depend on the project, organization, the composition and phase of the project, and the development phase of the steering committee. The remaining 8 respondents do think that an ideal steering committee exists.

Does an ideal steering committee member exist or does it depend on contingencies?
According to 19 out of the 25 respondents, there is no ideal steering committee member, but it depends on the contingencies. The contingencies mentioned by the respondents is the difference in type of projects, like project complexity, or the phase of the project. The type of organization was also mentioned one time as a contingency. However, most of the respondents that do not believe in an ideal steering committee member think that the characteristics required depend on the responsibilities, or "role", of the steering committee member. According to these respondents, not every steering committee member has the same responsibilities within the group. 2 out of 25 respondents partly think that there are ideal characteristics of a steering committee member. 3 out of 25 respondents think that an ideal steering committee member exists and does not depend on contingencies.

What do you consider to be a well-functioning steering committee?
A well-functioning steering committee is not easy to define, given the diversity in which the respondents answered this question. A summary is made in the bullets below:

- Every responsibility must be clear and covered in a steering committee
- The steering committee needs to be committed to the project
- The steering committee must have solid decision-making
- The steering committee must take ownership of the project and steers
- The steering committee must be experienced
- The steering committee must reach the business case
- All interests must be covered by the steering committee
- A steering committee must have mandate and say
- A steering committee must have a good collaboration with the project manager
- A steering committee must work as team

Most of the answers of the respondents on what makes a steering committee functioning well have a relation with the relevant characteristics for a steering committee member. Clear responsibilities (statement 11: understand their role) Decision-making (statement 19: comprehensive decisions), commitment (statement 9: genuine interest), mandate (statement 1: power within organization). Moreover, some of the answers are comparable to what is found in the literature review. For example: reaching the business case is seen as the main objective of a steering committee according to Zwikael et al. (2019). The bullets above may give the criteria of what a steering committee must possess to be a well-functioning one.

5.2. Expert session

The perspectives conclude that there is not one view on what the most important characters are for steering committee members. Moreover, according to the interviewed respondents, there are many contingencies on which this preference to certain characteristics depend. Having a discussion on the contingencies with experts gave insights into what the influence of these contingencies may have on the preference to a perspective on needed characteristics for a steering committee member. This section shows how the expert session was set-up and what the findings were.

5.2.1. Set-up expert session

The respondents mentioned multiple contingencies in the interviews on which the ideal characteristics for a steering committee member could depend. These contingencies were presented to a group of 10 experienced project managers from KWD. The expert session was set-up with these steps:

- Thesis with research question explained;
- the found perspectives with their contingencies were presented to the experts;
- the experts could ask questions on these perspectives;
- questions were asked to the experts;
- an open discussion started

The questions asked to the experts were based on all the contingencies that were found in the interviews. These included types of project, type of organization, project phase, experience of project manager, development phase steering committee, the role of a member within the steering committee. The discussion was recorded and used to write down the findings. These findings were compared with the existing perspectives to examine which contingencies may influence the prioritization of the characteristics by the respondents in the Q-sorts.

5.2.2. Findings expert session

Below, the questions are formulated followed by the answers of the experts:

Can you link the type of organizations in practice with one of the perspectives? (Think of organizational size, professionalism, organizational structure, etc.)
Some larger organizations that have a lot of projects do plan their projects in front. It could be more difficult for the project manager and team to understand why the project exists and why it is important, because they were not part of the early stages of the project. A steering committee could help the project manager by understanding the strategy and understanding the essence of the project communicating this to the project manager. In smaller organizations the link between strategy and project is more clear. It is then not needed for a steering committee member to really understand this strategy. In larger organizations a steering committee member provides resources by approving the project manager to shop in the organization. It is not always easy to shop in these organizations. Therefore, in these organizations a steering committee member should be able to provide resources. The provision of resources is less formalized in smaller organizations. Being able to provide resources is seen as a less important characteristic for a steering committee member because it is often not a problem in projects of these smaller organizations.

Does the project phase have an influence on the preference to the needed characteristics for a steering committee member?
At the start of the project the provision of resources and understanding the strategy is seen as more crucial for a steering committee member. The support base from the organization is more important in later stages of the project. When the execution of the project is going less well, a steering committee sometimes gives more empowerment and support to the project manager. The perspectives on what is needed for a steering committee member can change throughout the project. It depends on what is needed in that phase.

Does the development phase of a steering committee have an influence on the preference to the needed characteristics for a steering committee member?
Same as for the project phase, the perspectives on what is needed for a steering committee member can change throughout the development phases of the steering committee.

Interesting remarks
Motivation and strategy may have a link with each other. If someone does not understand the strategy of the organization they may lose some intrinsic motivation. A lot of steering committee members do not know what they are doing and what their role is. The different perspectives on important characteristics for steering committee members may explain how unclear the role of a steering committee member is. If a steering committee member is less experienced, they could be more busy with understanding what they should do and less with how they can help the project manager. The dynamic between the steering committee members and the project manager is very important and the steering committee member having a rapport with the project manager can solve problems. Which perspective on what characteristics are important for a steering committee member may depend on what problems the respondents in this thesis experienced in their projects.

5.3. Conclusion

The respondents provided divergent answers regarding what should be considered to be a well-functioning steering committee. Many respondents believe that an ideal steering committee does not exist, and even more respondents believe that an ideal steering committee member does not exist. Most are convinced that it depends on contingencies. The interviews show that there are many contingencies on which the preferred characteristics for a steering committee member depend. It seems like the organization and the project phase has an influence on the preferred characteristics of a steering committee member. These influences are discussed in the next chapter.

6

Discussion

All the results that were found in the previous chapters are discussed in this chapter. Moreover, the implications of the thesis are discussed.

6.1. Discussion of results

In this section, the expected results are evaluated, the observed results are examined, and these findings are compared to the existing literature and the findings of the expert session.

6.1.1. Characteristics of steering committee members

In this thesis, skills and competencies are among the characteristics of steering committee members that are studied. By studying literature and books on steering committees, project owners, and management teams, a list of characteristics has been formed that should give an idea of the potentially relevant characteristics of steering committee members (see table 3.1). Some characteristics are mentioned more often in literature than others. It was expected that the most frequently mentioned characteristics would also be the most important for a steering committee member to have. However, this did not necessarily turn out to be the case. The characteristic ”project outcomes” was mentioned relatively less often than the others in the Q-set but was still seen by several perspectives as an essential characteristic. This may be due to the fact that the characteristic “have a focus on project outcomes” was not directly stated in literature, however, project outcomes was still seen as an important aspect for a project in literature (Kloppenborg et al., 2014).

One may say that the Q-set provides a better overview of the potential relevant characteristics of a steering committee member for a well-functioning steering committee. Each characteristic was seen as relevant by at least one respondent for a steering committee member (see table 4.10). This suggests that each characteristic on the list has potential relevance. However, there could be more potential relevant characteristics besides the Q-set. The Q-concourse is therefore more complete and provides a list of characteristics that are potentially relevant for a steering committee member.

6.1.2. A well-functioning steering committee

Crawford et al. (2008) state that a steering committee is responsible for project governance and support. However, the literature study also showed that the concept of a steering committee is not clearly defined in literature (Lechler and Cohen, 2009). Therefore, in this thesis, respondents were also asked what they consider to be a well-functioning steering committee.

Chapter 5.1 shows that there are different opinions on when a steering committee is well-functioning. The lack of definition and consensus on the well-functioning of a steering committee appears to be consistent with the literature. When comparing these answers with Crawford, it can be seen that the main tasks of a steering committee depend on how much governance and support the project needs. Based on the perspectives found, together with the corresponding contingencies, it becomes clear that the amount of governance and support depends on the context. Section 2.2.3 highlights this.

6.1.3. The perspectives and contingencies

In this thesis, the perspectives on what the characteristics of steering committees should be were investigated. It was expected that some perspectives would be more focused on characteristics that are in the interest of the permanent organization and on characteristics that are in the interest of the temporary project organization. These two interests were indicated by Crawford et al. (2008).

The results show that 19 of the respondents are convinced that there is no ideal steering committee member. This also explains why the results offer 4 perspectives on which characteristics steering committee members should have to achieve a successful steering committee. When comparing the perspectives with the literature, it can be seen that all perspectives have aspects of governance and support. However, it was expected that there would be clearer differences in this regard. Furthermore, the perspectives on characteristics of steering committee members show similarities with those from other governance roles. The results showed that indeed, context plays a role. Below, the perspectives are noted and compared to literature.

Perspective 1: The project champion
This perspective showed similarities to the role of a project champion. The importance of a steering committee member who is a senior and shows interest in the project suggests that they can serve as a project ambassador. In the literature review, it was indicated that they are typically senior managers from the owner or user organization (Kerzner, 2009), which suggests that this type of steering committee member primarily takes on a role that is important for the permanent organization. This perspective was mainly based on respondents who were project managers with a lot of experience and seems to be slightly less focused on supporting the project. ”Collaborating with the project team” and ”the ability to support the project manager” are considered less important in this perspective. This perspective is supported by research from Crawford et al. (2008), who found that support is more necessary for project managers with less experience.

Perspective 2: The project governor
In this perspective, it is the task of a steering committee member to empower the project manager to perform their work effectively. However, this type of steering committee member provides little project support and primarily focuses on governance tasks and positioning the project within its environment. Comparing this perspective to literature, this steering committee member seems responsible for the project strategy. Project strategy is defined as a direction within a project that contributes to its success within its environment (Artto et al., 2008). Artto et al. (2008) states that this direction can be a governance system and that the environment is constantly changing and the project must constantly interact with it. This explains the need for stakeholder management, goal alignment and focus on project outcomes. Moreover, this perspective is based on the responses of steering committee members within larger organizations. These steering committees in larger organizations seem to be more valuable in the execution phase of the project, where they take on a more monitoring role (Murphy, 2016). In the execution phase of a project, a steering committee member is required to perform strategic tasks when a choice affects the strategic alignment of the project. This can be seen in this perspective as well, where the characteristic of ”being able to link the project with organizational objectives” is given a high score.

Perspective 3: The strategic manager
The respondents associated with this perspective believe that a steering committee member should actively guide the project organization. This perspective is mainly based on respondents who worked for smaller organizations during the project. In smaller companies, steering committees are often active in the earlier phases of the project, where a steering committee member’s emphasis is on the strategic aspects of the project (Murphy, 2016). However, this view was contradicted in the expert session, where it was noted that in smaller companies, projects are often less complex and therefore the organizational strategy is less complex. In the expert session, it was also mentioned that it is easier for project managers to obtain resources in smaller organizations. This is because the provision of resources is less formalized, which means that it is less important for a steering committee member to be able to provide these resources. This may explain why the characteristic of ”providing resources” is considered relatively unimportant in this perspective.

Perspective 4:The project sponsor
The role of the steering committee member from this perspective appears to align with that of the project sponsor as defined in the literature study. Providing resources, making decisions, and political support are important aspects, as noted by Crawford (2001). Additionally, the steering committee member holds a senior position within the permanent organization, similar to that of a project sponsor as described by Helm and Remington (2005). This perspective is mainly based on the experiences of respondents who have worked with or within steering committees at large organizations. The experts in the expert session noted that networking and political savvy are likely to be more important for a steering committee member in large organizations and that being able to provide resources is crucial because the allocation of resources is highly formalized in larger organizations. Furthermore, in this perspective the steering committee member is important in relation to the permanente organization. According to Crawford et al. (2008), this would mean that the steering committee would focus on giving governance and less on support. “Empowering the project manager” and “supporting the project manager” do have low importance in this perspective.

Difference between project managers and steering committee members on perspectives.
It is noteworthy that the perspectives on the necessary characteristics of steering committee members among project managers and steering committee members are different. Project managers tend to align more with perspective 1 and 4, while steering committee members align more with perspective 2 and 3. The correlation matrix (see Table 4.11) illustrates that perspective 1 and 4 have a relatively high correlation. This is further supported by the roles of the project champion and project sponsor, which have comparable preferred characteristics. As Crawford (2001) states, the project sponsor is primarily responsible for advocating for the project and is important in relation to the permanent organization. Which is the same for the project champion.

The perspectives based on steering committee members have a strategic focus on the characteristics deemed important for a steering committee member. The main difference between perspective 2 and 3 is that perspective 2 is viewed from a large organization, while perspective 3 is viewed from a relatively small organization. In the large organization, more monitoring characteristics were seen as important.

Conclusion
To conclude, there are 4 perspectives on what are important characteristics of steering committee members for a successful steering committee. Some perspectives tend slightly more towards providing governance and some slightly more towards providing support. However, each perspective has its own way of providing governance and support. This is related to the role of the steering committee member and who they represent. Perspective 1 and 4 highlight a more significant role for the permanent organization, while perspective 3 focuses on the temporary project organization. Moreover, this thesis identified several contingencies that were expected to impact perspectives on the characteristics that steering committee members should have. The results showed that this was the case, but it appears that very specific contingencies can determine whether a characteristic is considered important. The size of the organization was found to have an impact on preferences for steering committee member characteristics. This can be linked to the literature, which shows that the size of the organization determines the phase of the project in which the steering committee is most active. Furthermore, project managers and steering committees have different perspectives on the necessary characteristics of steering committee members. Steering committee members might focus more on the strategic and monitoring functions of a steering committee member. Project managers might focus more on the general behavior and the specific support that they need of the steering committee.

6.2. Implications of thesis

This section mentions the limitation, the validity, the contribution to literature and the practical applications of this research.

6.2.1. Limitations thesis

This thesis used the Q-method to identify and study the different perspectives on the topic of steering committee member characteristics. This method is well-suited for analyzing subjective data, but it does have some limitations.

P-set

First, there are relatively few respondents in this study. While the number of respondents is sufficient to identify the perspectives, the lack of data makes it more difficult to identify contingencies. Second, there is not much diversity among the respondents. 14 project managers were interviewed, nearly all of whom had more than 20 years of experience, all worked at the same company, and primarily managed IT projects. The remaining 11 steering committee members were more diverse, but still mostly worked on IT projects. The low diversity among respondents may lead to limit generalization.

Q-sort

The data for this thesis comes from the completed Q-sorts and interviews. The Q-sort is composed of sorted cards with statements about characteristics of steering committee members. It is possible that not every respondent interprets the characteristics in the same way. It is also possible that respondents primarily sort based on which characteristics are missing in practice. This means that any characteristics that are very important for a steering committee member may have a lower score because they are rarely missed. During the sorting, the respondents also indicated that there were characteristics that are essential for a steering committee member but often do not lead to problems and therefore receive a neutral score. These characteristics were often called ”hygiene factors” (see chapter 4.3).

Steering committee as a group

This thesis examines the characteristics of individual members within a steering committee, and not the characteristics of the committee itself. It is possible that within the committee, characteristics may be compensated for, or that there are different responsibilities within a steering committee.

6.2.2. Validity

In the previous section, the limitations of the research were mentioned. In this section, we will explain how the research can be considered valid by mitigating the limitations of the research.

To make the Q-study as valid as possible, the researcher has attempted to carry out the steps of the method as well as possible. For the Q-concourse, data saturation was approached by searching for characteristics of steering committee members in literature until no new characteristics were found when reading the next paper. The Q-set was presented to an experienced project manager to validate that it is complete. For the P-set, criteria were presented to validate that the respondents have knowledge of steering committees and still have a clear image of their last project. During the interviews, the questions were asked as openly as possible, and the researcher did not tell the respondents anything about the sorting of other respondents in order to avoid bias.

The researcher chose to do the interviews face to face so that interaction could take place. This allows for a better understanding of why the respondent sorted the characteristics of steering committee members in this way. The justification for the sorting was recorded and used to formulate the perspectives. The perspectives were then attempted to be validated in the discussion. Multiple sources were used in this process to avoid bias from only a literature review.

6.2.3. Contribution to existing literature

There is relatively little literature on steering committees. The literature that exists mostly focuses on the purpose of steering committees and how they should function. There is still a lot of uncertainty about what is expected of a steering committee member (Arnesson and Albinsson, 2014). This thesis can

contribute by clarifying what is expected of a steering committee member in certain contexts. It shows that there are different perspectives on what a steering committee member should be able to do and that this depends on contingencies. Some contingencies are discussed and linked to literature. However, these contingencies need to be better supported and, in addition, there are probably many more specific contingencies that can influence the desired characteristics of a steering committee member. It is therefore not yet possible to sketch a profile of an ideal steering committee member in a specific context.

6.2.4. Practical applications

This thesis provides an explanation of what a steering committee member should be able to do dependable on the context. The results may be of interest to individuals forming a steering committee or to steering committee members who want to know what is expected of them in IT projects. Here are a few tips to keep in mind:

Tip 1. Determine the organization's size

The size of the organization can influence the responsibilities of a steering committee member. Based on the literature, it appears that in small organizations, it is particularly important for a steering committee member to have a thorough understanding of the organization's strategy, especially during the early stages of a project. This is when steering committees in small organizations are often most active. On the other hand, large organizations tend to be more active in later phases of a project, where the steering committee's role may focus more on monitoring and oversight. Therefore, the preferred characteristics of a steering committee member in a large organization may differ from those in a small organization.

Tip 2. Determine the role of the steering committee member

It is necessary to determine the role of the steering committee member and for whom they should carry out this role. Should the member advocate for the project? Should the member focus on positioning the project within the internal and external environment? Should the member set strategic goals? Should the member primarily prioritize the interests of the project organization or the permanent organization?

7

Conclusion

This thesis explores the characteristics of steering committee members that are necessary for a successful steering committee and the contingencies on which these characteristics depend. A Q-study was conducted, combining qualitative and quantitative research methods, and interviews were conducted with experienced project managers and steering committee members. In this chapter, the subquestions are revisited and answered separately. Afterwards, the main question is answered and recommendations for future research are given.

7.1. Answering the sub-questions

In this section, the four subquestions of this thesis are revisited. Each subquestion is answered individually.

7.1.1. Q1: What are the potential relevant characteristics of steering committee members?

A list of all characteristics of steering committee members that fall within the scope of this thesis was created to identify all potentially relevant characteristics. The list is derived from identifying tasks, responsibilities, required skills and competencies from literature and practical books on steering committees. The characteristics on this list have the potential to be relevant for a steering committee member. The list includes characteristics related to the governance and support role of a steering committee member. These are based not only on the tasks of a steering committee member but also on the behavior that a steering committee member may have.

Potential relevant characteristics of steering committee members			
Have knowledge of project management	Have political knowledge	Have experience in the industry	Be able to mitigate shortfall on project results
Understand the organizations strategy	Be able to connect project and organization	Should not argue in favor of own interest	Be able to maximize business benefits
Be able to monitor the project	Be personal compatible with other players	Be able to support project leader	Be able to maximize project benefits
Be able to collaborate with project team	Be objective	Report activities own organization	Be able to improve organization's skill set
Be able to provide resources	Challenge the project(team)	Able to keep informed	Be able to improve organization's efficiency
Be able to provide leadership and vision	Have access to decisionmaker in the organization	Have constructive critical thinking	Be able to prevent scope creep
Have seniority and power within the organization	Be able to shield project manager from the board	Have knowledge of subject matter	Be able to manage contingency reserves
Be able to manage stakeholders	Be able to delegate	Have high meeting attendance	Be able to do contract administration
Be able to accelerate decisions in parent organization	Have knowledge of the organization	Have prestige	Have solidarity
Be able to motivate the project manager and project team	Be able to provide organizational information to project	Have social reputation	Have imagination/creativity
Possess relevant authority	Have courage	Network actively	Be able to review project products
Be able to empower the project manager	Battle on behalf of the project	Have position in organization	Be able to give advice
Be trustworthy	Able to bear risk	Have access to resources	Be convincing
Understand their role	Stand strong in difficult times	Have control of uncertainty factors	Be able to lobby
Be able to monitor the business case	Be available and responsive	Have problem solving abilities	Have commitment
Be able to evaluate project manager performance	Have autonomy	Be supportive within the group	Be able to clarify scope
Be able to understand the key risks	Have experience in the role	Be reliable	Be able to allocate budget
Be able to validate information	Be aproachable	Have cognitive complexity	Be able to step in if project manager fails
Be decisive	Be compatible with project team	Be empathic	Be able to harmonize disagreeable voices
Have sufficient time available	Have social skills	Be able to communicate effectively	Be able to act quickly in a crisis
Be able to understand the key drivers	Have technical expertise	Put task conflict over relationship conflict	Be able to prioritize activities
Be flexible in project planning	Be able to handle ambiguity	Not be stubborn	Be highly educated
Be open about shortcomings	Be able to direct	Have access to information	Be able to work independently
Be able to distribute information	Focus on project outcomes	Be a good negotiator	Be able to come up with solutions
Collaborrate with base organization	Be able to remove project obstacles	Have genuine interest in project	Be able to replace project manager
Be able to set clear goals	Link project and organizational success factors	Be able to keep pace in project	Be able to terminate a project
Be able to make comprehensive decisions	Be able to mitigate resource shortage		

Table 7.1: Potential relevant characteristics

7.1.2. Q2: When is a steering committee considered as well-functioning?

Steering committees are responsible for project governance and support. However, literature also concluded that the concept of a steering committee is not well-defined yet. In this thesis, respondents were therefore asked for their thoughts on what a well-functioning steering committee would be. Answers these respondents gave were:

- Every responsibility must be clear and covered in a steering committee
- The steering committee needs to be committed to the project
- The steering committee must have solid decision-making
- The steering committee must take ownership of the project and steers
- The steering committee must be experienced
- The steering committee must reach the business case
- All interests must be covered by the steering committee
- A steering committee must have mandate and say
- A steering committee must have a good collaboration with the project manager
- A steering committee must work as team

The answers may function as criteria for a steering committee. Most of these answers were acknowledged in literature and conclude that the well-functioning of a steering committee can not be explained in a few sentences. The specific function that is most important for a steering committee depends heavily on the needs of the specific project in question. Some projects require more governance from the steering committee and some require more support. Moreover, these requirements can shift throughout the project life-cycle.

7.1.3. Q3: Which perspectives exist on important steering committee member characteristics for a well-functioning steering committee?

There are 4 perspectives on the important characteristics of a steering committee member for a well-functioning steering committee. Figure 7.1 shows these perspectives. The characteristics that distinguish the perspectives are briefly explained:

Respondents from perspective 1 think that a steering committee member should be regarded as a project champion who secures commitment for the project from other stakeholders within the permanent organization by acting as an advocate. Through a genuine interest in the project, this steering committee member is willing to champion the project, and by holding a senior position within the permanent organization, they are able to garner commitment from others within the organization. They are able to justify their actions by effectively communicating their comprehensive decision-making process. This type of steering committee member does not have to be actively involved in project management, their role is more significant in relation to the permanent organization.

Respondents from perspective 2 think that the role of the steering committee member should not focused on managing the project, but rather on empowering the project manager and overseeing the governance of the project by positioning the project organization in relation to its internal and external environment. This is accomplished internally by focusing on the project outcomes and aligning them with the organization's objectives. Externally, this is achieved through effective stakeholder management. The steering committee member's responsibility for governance does not begin at the early stages of the project, but they provide governance throughout the project by making strategic decisions. Although this steering committee member is not actively managing the project organization, they possess knowledge of project management and subject matter, which enables them to ask the right questions to the project manager.

Respondents from perspective 3 think that a steering committee member should actively guides the project organization by setting goals that align with the organization's strategy and making decisions that focus on the project outcomes. The member provides leadership and direction by managing the strategic course of the project, and thus have a crucial role in relation to the temporary project organization.

Respondents from perspective 4 think that the steering committee member, who is comparable to a project sponsor, plays an active role in steering the project by making decisions that serve the best interest of the permanent organization. As such, this steering committee member has a significant role in relation to the permanent organization. Holding a senior position within the organization, this steering committee member can utilize their influence to enforce decisions, provide resources, and offer political support. Managing the project is not considered a responsibility of this steering committee member, and their effectiveness is measured by their own performance rather than that of the project manager. The project manager is responsible for their own support, empowerment, and management of the project team.

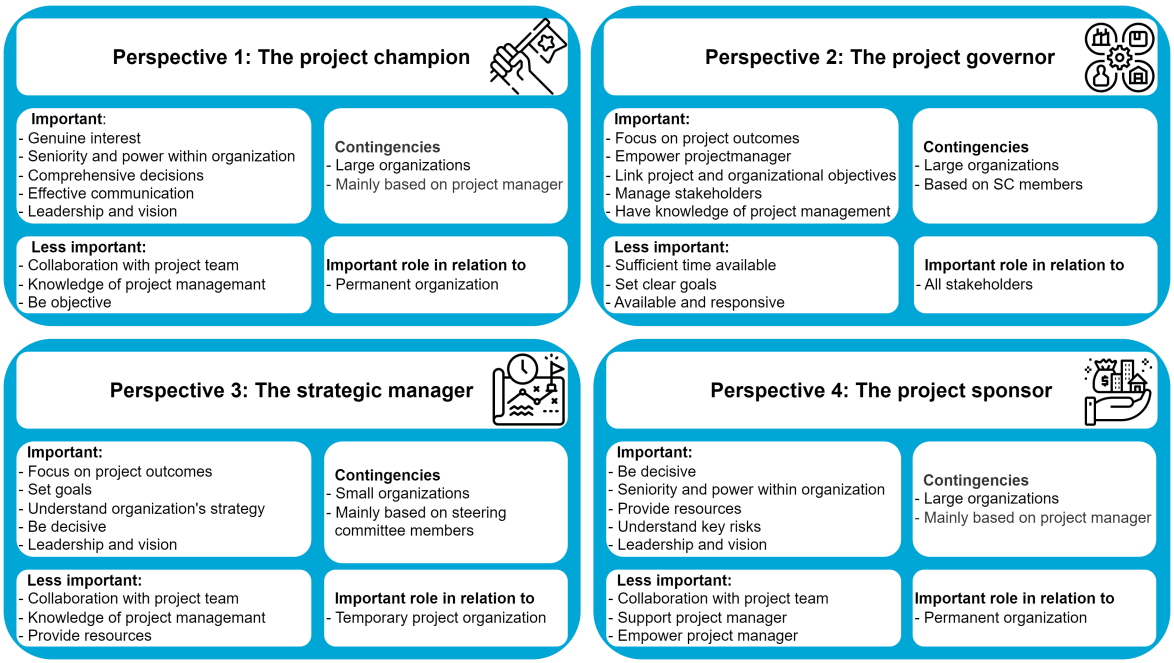

Figure 7.1: Perspectives

7.1.4. Q4: On what contingencies do the perspectives on important steering committee member characteristics depend?

There are multiple perspectives on the important characteristics for a steering committee member to achieve a successful steering committee. By studying the contingencies, it can be determined where the perspectives come from.

The size of the organization affects the phase in which the steering committee is most active. In small organizations, the steering committee is more active in the early phases of the project, while in large organizations it is more active in the later phases of the project. This implies that steering committees in smaller organizations have more strategic functions, while larger organizations have more monitoring functions. In addition, providing resources in large companies is more formalized, so it requires more attention from the steering committee member.

Project managers have a different perspective on the needed characteristics of a steering committee member than the steering committee members themselves. Project managers might focus more on

the specific behavior and support that they need from a steering committee member and the steering committee members themselves might focus more on the strategic or monitoring tasks they have to fulfill.

The role of the steering committee member determines which characteristics are important. The steering committee member may have a role that prioritizes the interests of the project organization or the permanent organization.

7.2. Answering the main question

The aim of this thesis is to identify the characteristics that a steering committee member should possess in order to create a successful steering committee. Because the desired characteristics are likely to be situational, this thesis also seeks to explore the contingencies that may influence which characteristics are desirable. A Q-study was conducted in which respondents were asked to prioritize characteristics of steering committee members and to answer questions to understand their reasoning and the context in which they made their choices.

The main question was formulated as:
What are the characteristics that steering committee members must have in order to achieve a well functioning steering committee and on what contingencies do these characteristics depend?

It can be concluded that the characteristics required for a steering committee member strongly depend on the context. While there is some consensus on which characteristics are relatively less important, there is no consensus on which characteristics are most important for a steering committee member to ensure a well-functioning steering committee. There are four perspectives that show that the necessary characteristics depend on the role of the steering committee member and whether they should be important for the permanent organization, project organization, or the entire project environment. This, along with the size of the organization, impacts which characteristics the steering committee member must possess and which way the steering committee member must provide governance and support that the project needs.

7.3. Future research and recommendations

This study examined project managers and steering committee members who were primarily active in IT projects. Further research could take the same approach as this study but apply it to a different P-set. For example, by using a P-set active in the construction industry, it could be determined whether different types of projects or organizations have an impact on what characteristics of steering committee members are required. Moreover, a P-set could be chosen that includes both experienced and less experienced respondents. Additionally, another approach for determining the Q-set could be to use qualitative methods such as interviews, in order to explore whether a different Q-set would yield different insights. It is recommended, however, to use a comparable P-set in order to maintain consistency in this variable.

Another option for future research would be to conduct the Q-study with the aim of identifying the characteristics of the entire committee instead of individual members. The Q-set would then have to be adapted to better align with group characteristics. This could be compared with this study to determine if it is better to have a steering committee with similar types of members or if it is better to have a diverse group. If similar results are found from the study of the entire committee, it can be concluded that it is not important to have different types of steering committee members in a steering committee.

Reference list

Andersen, E. (2012). Illuminating the role of the project owner. *International Journal of Managing Projects in Business*, *5*(1), 67–85. https://doi.org/10.1108/17538371211192900

Arnesson, K., & Albinsson, G. (2014). Interaction patterns in a steering group: Power and action outcome. *Economic and Industrial Democracy*, *35*(2), 325–340. https://doi.org/10.1177/0143831X13481249

Artto, K., Kujala, J., Dietrich, P., & Martinsuo, M. (2008). What is project strategy? *International Journal of Project Management*, *26*, 4–12.

Axelos. (2009). *Directing successful projects with prince2* (3rd ed.). The Best Management Practice Official Publisher.

Bang, H., & Midelfart, T. (2017). What characterizes effective management teams. *Consulting Psychology Journal: Practice and Research*, *69*(4), 1–51. https://doi.org/10.1037/cpb0000098

Brouwer, M. (1999). Q is accounting for tastes. *Journal of Advertising Research*, *39*(2), 35–39.

Brown, S. (1980). Political subjectivity. *New Haven, CT: Yale University Press*.

Brulin, G., & Svensson, L. (2011). Owning, managing and evaluating large projects. *Studentlitteratur*, *1*, 289–306.

Cooke-Davies, T. (2002). The 'real' success factors on projects. *International Journal of Project Management*, *20*(3), 185–190.

Cooper, R., Edgett, S., & Kleinschmidt, E. (1997). Portfolio management in new product development: Lessons from the leaders. *Research Technology Management*, *40*(5), 16–28.

Corr, S. (2001). An introduction to q methodology, a research technique. *British Journal of Occupational Therapy*, *64*(6), 293–297. https://doi.org/doi:10.1177/030802260106400605

Crawford, L., & Brett, C. (2001). Exploring the role of the project sponsor. *Project Management Program*.

Crawford, L., Cooke-Davies, T., Hobbs, J., Labuschagne, L., Remington, K., & Chen, P. (2008). Governance and support in the sponsoring of projects and programs. *Project Management Journal*, *39*(1), 43–55. https://doi.org/10.1002/pmj.20059

Damio, S. M. (2018). The analytic process of q methodology. *Faculty of Education, UiTM Selangor*.

Damio, S. (2016). Q methodology: An overview and steps to implementation. *Asian Journal of University Education*, 106–122.

Gattiker, T., & Carter, C. (2010). Understanding project champions' ability to gain intra-organizational commitment for environmental projects. *Journal of Operations Management*, *28*, 72–85.

Helm, J., & Remington, K. (2005). Effective project sponsorship: An evaluation of the role of the executive sponsor in complex infrastructure projects by senior project managers. *Association for Project Management*, *36*(3), 51–61. https://doi.org/10.1177/875697280503600306

Hjelmbrekke, H., Lædre, O., & Lohne, J. (2014). The need for a project governance body. *International Journal of Managing Projects in Business*, *7*(4), 661–677. https://doi.org/10.1108/IJMPB-03-2013-0012

Jolliffe, I. T. (2002). Principal component analysis for special types of data. *Springer New York*, 338–372.

Kerzner, H. (2009). *Project management: A systems approach to planning, scheduling, and controlling* (10th ed.). Wiley.

Kloppenborg, T. J., Tesch, D., & Manolis, C. (2014). Project success and executive sponsor behaviors: Empirical life cycle stage investigations. *Project Management Journal*, *45*(1), 9–20. https://doi.org/10.1002/pmj.21396

Lechler, T., & Cohen, M. (2009). Exploring the role of steering committees in realizing value from project management. *Project Management Journal*, 42–54. https://doi.org/10.1002/pmj

Levi, D., & Askay, D. (2022). *Group dynamics for teams* (Sixth). Sage Publications.

Loch, C., Mähring, M., & Sommer, S. (2017). Supervising projects you don't (fully) understand. *California Management Review*, *59*(2), 45–67. https://doi.org/10.1177/0008125617697944

McGrath, S., & Whitty, S. (2015). Redefining governance: From confusion to certainty and clarity. *International Journal of Managing Projects in Business*, *8*(4), 757–787. https://doi.org/10.1108/IJMPB-10-2014-0071

McGrath, S., & Whitty, S. (2019). Do steering committees really steer? *International Journal of Managing Projects in Business*, *12*(3), 785–807. https://doi.org/10.1108/IJMPB-04-2018-0064

McKeown, B., & Thomas, D. (2013). *Q methodology* (2nd ed.). SAGE Publications inc.

Müller, R. (2009). *Project governance*. Gower publishing.

Murphy, K. (2016). A theory of steering committee capabilities for implementing large scale enterprise-wide information systems writing an online tophat textbook view project steering groups and digitization view project. *CASE WESTERN RESERVE UNIVERSITY*.

Project Management Institute PMI. (2016). *Governance of portfolios, programs, and projects: A practice guide*. Project Management Institute.

San Cristóbal, J. R. (2017). Complexity in project management. *Procedia Computer Science*, *121*, 762–766. https://doi.org/10.1016/j.procs.2017.11.098

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., & Burroughs, C., H. Jinks. (2018). Saturation in qualitative research: Exploring its conceptualization and operationalization. *Quality Quantity*, *52*, 1893–1907. https://doi.org/10.1007/s11135-017-0574-8

Shemmings, D. (2006). 'quantifying' qualitative data: An illustrative example of the use of q methodology in psychosocial research. *Qualitative Research in Psychology*, *3*(2), 147–165. https://doi.org/10.1191/1478088706qp060oa

Stoppels, J., Bosch-Rekveldt, M., Mooi, H., & Bakker, H. (2022). Exploring project steering committees. *Paper presented at the Euram 2022.*

Suprapto, M. (2016). Collaborative contracting in projects. *Annalen der Physik*.

Van Exel, J., & De Graaf, G. (2005). Q methodology: A sneak preview. www.jobvanexel.nl

voor de Statistiek, C. B. (2016). Company size.

Watts, S., & Stenner, P. (2012). *Doing q methodological research: Theory, method and interpretation*. SAGE Publications inc.

Zwikael, O., Meredith, J., & Smyrk, J. (2019). The responsibilities of the project owner in benefits realization. *International Journal of Operations and Production Management*, *39*(4), 503–524. https://doi.org/10.1108/IJOPM-02-2018-0086

□

A

Q-methodology

Reference	Paper	Industry	Journal	Characteristics	Underlaying reference	New found
Zwikael et al. (2019)	The responsibilities of the project owner in benefits realization	Multiple large private and state owned companies	International Journal of Operations & Production Management	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 47, 61	Zwikael and Meredith, 2018 Dvir and Lechler, 2004 Pinto and Slevin, 1987 Morris and Hough, 1987 APM, 2012 Andersen (2012) Winch and Leiringer 2016	18
Loch et al. (2017)	Supervising Projects You Don't (Fully) Understand: Lessons for Effective Project Governance by Steering Committees	Multiple industries	California Management Review	8, 17, 18, 19, 20, 21, 22, 13, 23		7
Arnesson and Albinson (2013)	Interaction patterns in a steering group: Power and action outcome	IT in nursing and caring	Blekinge Institute of Technology	16, 24, 25, 8, 5, 26, 27, 7, 28, 20, 19, 11, 29, 30, 31, 32, 14, 33, 34, 35, 36, 37, 38, 39, 40, 41, 50, 53	Antvik an Sjöholm, 2006 Weber, 1983 Chernesky and Tirrito, 1987	20
Bang and Midelfart (2017)	What Characterizes Effective Management Teams		Consulting Psychology Journal: Practive and Research	3, 42, 19, 24, 6, 26, 43, 44, 33, 47, 45, 46, 48, 49, 4, 25, 7, 50, 14, 12, 17	Nadler, 1998 Yukl, 2013	6
McGrath and Whitty (2018)	do steering committees really steer?	Multiple industries	International Journal of Managing Projects in Business	1, 19, 47, 51, 14, 52, 40, 35, 53, 8, 61	Murphy, 2016 Mosavi, 2014	2
Helm and Remington (2005)	EFFECTIVE PROJECT SPONSORSHIP: AN EVALUATION OF THE ROLE OF THE EXECUTIVE SPONSOR IN COMPLEX INFRASTRUCTURE PROJECTS BY SENIOR PROJECT MANAGERS	Multiple industries	Association for Project Management.	5, 7, 54, 55, 10, 6, 4, 47, 56, 57, 58, 59, 60, 30, 61, 62, 38, 63, 53, 19, 64 65, 66, 67, 68, 13 69, 70, 71, 72, 73, 74, 75	Crawford and Brett, 2001	21
Müller (2009) BOOK chapter: 2, 3, 5	Project Governance		Gower Publisher Company (PUBLISHER)	76, 27, 7, 54, 55, 10, 6, 4, 47, 56, 57, 58, 52, 70, 73, 2, 11, 26, 77, 78, 5, 19, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 17, 1, 15, 22, 89, 24, 90	APM, 2004 Helm and Remington, 2005 Müller and Turner, 2002, 2004 Crawford et al. 2008	15
David Hinde (2012) BOOK chapter: 3	PRINCE2 Study Guide		Hoboken: John Wiley & Sons (PUBLISHER)	15, 27, 5, 11, 21, 40, 61, 3, 16, 91, 92, 13, 68, 52, 93, 20		3
Minichilli et al. (2009)	Making Boards Effective: An Empirical Examination of Board Task Performance		British Journal of Management	5, 92, 38, 8, 15, 16, 3, 94, 95, 90, 33, 48, 27		2
Crawford et al. (2008)	Governance and support in the sponsoring of projects and programs	Multiple industries	Project Management Institute	3, 5, 11, 96, 4, 10, 47, 8, 7, 6, 30, 95, 97, 98, 21, 52, 68	Cooke-Davies, 2002 Remington Pollack, 2002 Kapur, 1999 Hartman Ashrafi, 2002	3
Walker (2012)	Its the Sponsor, Stupid! Engage, Involve, and Listen	Multiple industries	Project Management Institute	6, 34, 7, 11, 99, 4, 24, 5, 25, 68, 100, 90, 28, 14, 8, 26, 53, 79	Sutterfield et al., 2006 Melymuka, 2004 Hugos, 2005 Wright, 1997	2
Murphy (2016)	A Theory of Steering Committee Capabilities for Implementing Large Scale, Enterprise-Wide Information Systems	Information technology	Weatherhead School of Management	47, 27, 5, 2, 6, 17, 101, 3, 102, 96 82, 103, 34, 19, 41, 13, 44, 4, 25, 79, 30, 104, 71, 72, 48, 33, 105, 12, 22	Mosavi, 2014 Torkzadeh and Xia, 1992 Karimi et al., 2000	5
Kloppenburg et al. (2010)	Project Success and Executive Sponsor behaviours: Empirical Life Cycle Stage Investigations.	Multiple industries	Project Management Institute	52, 12, 16, 8, 105 91, 47, 21, 106, 30	Kloppenburg et al., 2006	1
Lechler and Cohen (2009)	Exploring the Role of Steering Committees in Realizing Value From Project Management	Multiple industries	Project Management Institute	7, 9, 74, 45, 11, 1, 19, 106, 78, 8		0

Table A.1: Reviewed literature

Number	Characteristic	Zwikael et al. (2019)	Loch et al. (2017)	Arnasson and Albinson (2013)	Bang and Midelfart (2017)	McGrath and Whitty (2018)	Helm and Remington (2005)	Müller (2009) BOOK chapter: 2, 3, 5	David Hinde (2012) BOOK chapter: 3	Minchilli et al. (2009)	Crawford et al. (2008)	Walker (2012)	Murphy (2016)	Kloppenburg et al. (2010)	Lechler and Cohen (2009)	Total occurance
1	Have knowledge of project management	1				1		1							1	4
2	Understand the organizations strategy	1						1					1			3
3	Be able to monitor the project	1			1				1	1	1		1			6
4	Be able to collaborate with project team	1			1		1	1			1	1	1			7
5	Be able to provide resources	1		1			1	1	1	1	1	1	1			9
6	Be able to provide leadership and vision	1			1		1	1			1	1	1			7
7	Have seniority and power within the organization	1		1	1	1	1	1			1	1			1	9
8	Be able to manage stakeholders	1	1	1						1	1	1		1	1	8
9	Be able to accelerate decisions in parent organization	1													1	2
10	Be able to motivate the project manager and project team	1					1	1			1					4
11	Possess relevant authority	1		1				1	1		1	1			1	7
12	Be able to empower the project manager	1			1								1	1		4
13	Be trustworthy	1	1				1		1				1			5
14	Understand their role	1		1	1	1						1				5
15	Be able to monitor the business case							1	1	1						3
16	Be able to evaluate project manager performance	1		1					1	1				1		5
17	Be able to understand the key risks		1		1			1					1			4
18	Be able to validate information		1													1
19	Be decisive		1	1	1	1	1	1	1				1		1	9
20	Have sufficient time available		1	1												2
21	Be able to understand the key drivers		1						1		1			1		4
22	Be flexible in project planning		1					1					1			3
23	Be open about shortcomings		1													1
24	Be able to distribute information			1	1			1				1				4
25	Collaborrate with base organization			1	1							1	1			4
26	Be able to set clear goals			1	1			1				1				4
27	Be able to make comprehensive decisions			1				1	1	1			1			5
28	Have experience in the industry			1								1				2
29	Should not argue in favor of own interest			1												1
30	Be able to support project leader			1			1				1		1	1		5
31	Report activities own organization			1												1
32	Able to keep informed			1												1
33	Have constructive critical thinking			1	1					1			1			4
34	Have knowledge of subject matter			1								1	1			3
35	Have high meeting attendance			1		1										2
36	Have prestige			1												1
37	Have social reputation			1												1
38	Network actively			1			1			1						3
39	Have position in organization			1												1
40	Have access to resources			1		1			1							3
41	Have control of uncertainty factors			1									1			2
42	Have problem solving abilities				1											1
43	Be supportive within the group				1											1
44	Be reliable				1								1			2
45	Have cognitive complexity				1										1	2
46	Be empathic				1											1
47	Be able to communicate effectively	1			1	1	1	1			1		1	1		8
48	Put task conflict over relationship conflict				1					1			1			3
49	Not be stubborn				1											1
50	Have access to information			1	1											2
51	Be a good negotiator					1										1
52	Have genuine interest in project					1		1	1		1			1		5
53	Be able to keep pace in project			1		1	1					1				4
54	Have political knowledge						1	1								2
55	Be able to connect project and organization						1	1								2
56	Be personal compatible with other players						1	1								2
57	Be objective						1	1								2
58	Challenge the project(team)						1	1								2
59	Have access to decisionmaker in the organization						1									1
60	Be able to shield project manager from the board						1									1
61	Be able to delegate	1				1	1		1							4
62	Have knowledge of the organization						1									1
63	Be able to provide organizational information to project						1									1
64	Have courage						1									1
65	Battle on behalf of the project						1									1
66	Able to bear risk						1									1
67	Stand strong in difficult times						1									1
68	Be available and responsive						1		1		1	1				4
69	Have autonomy						1									1
70	Have experience in the role						1	1								2
71	Be aproachable						1						1			2
72	Be compatible with project team						1						1			2
73	Have social skills						1	1								2
74	Have technical expertise						1								1	2
75	Be able to handle ambiguity						1									1
76	Be able to direct							1								1
77	Focus on project outcomes							1								1
78	Be able to remove project obstacles							1							1	2
79	Link project and organizational success factors							1				1	1			3
80	Be able to mitigate resource shortage							1					1			2
81	Be able to mitigate shortfall on project results							1								1
82	Be able to maximize business benefits							1								1
83	Be able to maximize project benefits							1								1
84	Be able to improve organization's skill set							1								1
85	Be able to improve organization's efficiency							1								1
86	Be able to prevent scope creep							1								1
87	Be able to manage contingency reserves							1								1
88	Be able to do contract administration							1								1
89	Have solidarity							1								1
90	Have imagination/creativity							1		1		1				3
91	Be able to review project products								1					1		2
92	Be able to give advice								1	1						2
93	Be convincing								1							1
94	Be able to lobby									1						1
95	Have commitment									1	1					2
96	Be able to clarify scope										1		1			2
97	Be able to allocate budget										1					1
98	Be able to step in if project manager fails										1					1
99	Be able to harmonize disagreeable voices											1				1
100	Be able to act quickly in a crisis											1				1
101	Be able to prioritize activities												1			1
102	Be highly educated												1			1
103	Be able to work independently												1			1
104	Be able to come up with solutions												1			1
105	Be able to replace project manager												1	1		2
106	Be able to terminate a project													1	1	2

Table A.2: All characteristics

number	Characteristics	Merged from numbers
7	Have seniority and power within the organization	7+11+36+39+59
5	Be able to provide resources	5+40+80
16	Be able to evaluate project manager performance	16+3+15
47	Be able to communicate effectively	47+24
6	Be able to provide leadership and vision	6+61
19	Be decisive	
73	Have social skills	73+56+72+46+99+93
8	Be able to manage stakeholders	
52	Have genuine interest in project	52+95
4	Be able to collaborate with project team	
14	Understand own role	14+70
26	Be able to set clear goals	26+96+86
33	Have constructive critical thinking	33+48
10	Be able to motivate the project manager and project team	10+58
17	Be able to understand the key risks	17+41
68	Be available and responsive	68+71
79	Be able to link project with organizational objectives	79+55+63
13	Be trustworthy	
27	Be able to make comprehensive decisions	
30	Be able to support project manager	
1	Have knowledge of project management	
34	Have knowledge of subject matter	34+28
53	Be able to keep pace in project	
12	Be able to empower the project manager	
21	Be able to understand the key drivers	
25	Collaborate with own organization	
20	Have sufficient time available	20+35
50	Have access to information	50+18+32
57	Be objective	49+57+29
75	Be able to handle ambiguity	75+22
2	Understand the organization's strategy	
38	Network actively	
90	Have imagination/creativity	
54	Have political knowledge	54+62
77	Focus on project outcomes	77+82+83

Table A.3: Merged characteristics

number	Characteristics
1	Have seniority and power within the organization
2	Be able to provide resources
3	Be able to evaluate project manager performance
4	Be able to communicate effectively
5	Be able to provide leadership and vision
6	Be decisive
7	Have social skills
8	Be able to manage stakeholders
9	Have genuine interest in project
10	Be able to collaborate with project team
11	Understand own role
12	Be able to set clear goals
13	Have constructive critical thinking
14	Be able to motivate the project manager and project team
15	Be able to understand the key risks
16	Be available and responsive
17	Be able to link project with organizational objectives
18	Be trustworthy
19	Be able to make comprehensive decisions
20	Be able to support project manager
21	Have knowledge of project management
22	Have knowledge of subject matter
23	Be able to keep pace in project
24	Be able to empower the project manager
25	Be able to understand the key drivers
26	Collaborate with own organization
27	Have sufficient time available
28	Have access to information
29	Be objective
30	Be able to handle ambiguity
31	Understand the organization's strategy
32	Network actively
33	Have imagination/creativity
34	Have political knowledge
35	Focus on project outcomes

Table A.4: Q-set

A.1. Correlation matrix

The first step in the factor analysis is to find the correlation matrix (see table A.5). The intercorrelation of each Q-sort with every other sort creates the correlation matrix (Watts and Stenner, 2012). In other words, the numbers in the table below shows what the relation is between the different Q-sorts. The Q-sort of P1 is 100% the same as that of P1, logically. The Q-sort of P1 shares for 24% the opinion of P2, enz.

Participant	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
P1	100	24	39	9	38	21	62	46	47	58	49	25	22	28	12	12	36	7	25	28	30	37	46	13	45
P2	24	100	38	24	21	17	25	16	39	33	20	5	0	13	13	37	-5	-18	18	7	-5	-30	41	4	13
P3	39	38	100	45	55	51	50	36	39	46	43	26	33	57	22	53	57	-1	17	54	7	22	53	11	43
P4	9	24	45	100	42	22	37	16	37	36	26	14	33	9	22	41	25	13	0	39	-25	-8	29	0	17
P5	38	21	55	42	100	67	33	18	55	49	45	22	36	43	29	59	58	17	49	43	12	1	42	25	37
P6	21	17	51	22	67	100	24	-9	29	28	51	37	17	49	14	53	43	0	20	49	32	11	37	-1	20
P7	62	25	50	37	33	24	100	34	41	63	53	32	28	36	24	36	28	-1	11	7	20	20	49	3	34
P8	46	16	36	16	18	-9	34	100	26	50	28	0	55	13	38	24	34	34	16	20	24	26	41	26	25
P9	47	39	39	37	55	29	41	26	100	74	47	7	29	51	22	42	49	-7	46	-1	5	-3	43	17	46
P10	58	33	46	36	49	28	63	50	74	100	63	21	47	57	37	58	55	16	34	14	33	20	51	26	45
P11	49	20	43	26	45	51	53	28	47	63	100	51	24	50	24	38	49	9	25	30	53	28	42	12	29
P12	25	5	26	14	22	37	32	0	7	21	51	100	8	32	20	13	12	5	-11	20	24	26	22	-8	12
P13	22	0	33	33	36	17	28	55	29	47	24	8	100	28	36	46	34	38	30	18	26	26	14	29	26
P14	28	13	57	9	43	49	36	13	51	57	50	32	28	100	22	53	43	-13	33	16	20	21	26	18	32
S1	12	13	22	22	29	14	24	38	22	37	24	20	36	22	100	50	22	17	16	30	16	1	16	41	22
S2	12	37	53	41	59	53	36	24	42	58	38	13	46	53	50	100	46	25	39	33	21	-1	25	36	26
S3	36	-5	57	25	58	43	28	34	49	55	49	12	34	43	22	46	100	24	29	34	16	28	28	20	50
S4	7	-18	-1	13	17	0	-1	34	-7	16	9	5	38	-13	17	25	24	100	21	25	33	26	0	24	13
S5	25	18	17	0	49	20	11	16	46	34	25	-11	30	33	16	39	29	21	100	5	36	12	29	39	51
S6	28	7	54	39	43	49	7	20	-1	14	30	20	18	16	30	33	34	25	5	100	9	24	28	21	22
S7	30	-5	7	-25	12	32	20	24	5	33	53	24	26	20	16	21	16	33	36	9	100	55	17	20	25
S8	37	-30	22	-8	1	11	20	26	-3	20	28	26	26	21	1	-1	28	26	12	24	55	100	20	26	46
S9	46	41	53	29	42	37	49	41	43	51	42	22	14	26	16	25	28	0	29	28	17	20	100	16	33
S10	13	4	11	0	25	-1	3	26	17	26	12	-8	29	18	41	36	20	24	39	21	20	26	16	100	20
S11	45	13	43	17	37	20	34	25	46	45	29	12	26	32	22	26	50	13	51	22	25	46	33	20	100

Table A.5: Correlation matrix

A.2. Principal Component Analysis (PCA)

By performing a Principal Component Analysis (PCA) the dimensionality of the data can be reduced while the most of the variation in the data set is retained (Jolliffe, 2002). By grouping the data into factors, it becomes easier to interpret and analyze. The application of PCA on the data set resulted in the identification of eight different factors, as shown in Table A.6, which presents the unrotated factor matrix with unrotated factor loadings. These factors provide the basis for understanding the perspectives of steering committee members on important characteristics.

Participant	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
P1	0,6278	0,0958	0,335	-0,3607	0,1882	-0,1738	0,1232	-0,0371
P2	0,3368	-0,5316	-0,1422	-0,3149	0,0428	0,1713	0,4845	-0,0972
P3	0,7425	-0,2728	0,0616	0,1761	0,1608	-0,2396	0,0574	0,2228
P4	0,446	-0,3858	-0,2841	0,2077	0,4373	-0,123	-0,1774	-0,1711
P5	0,7428	-0,2031	-0,164	0,254	-0,2106	-0,1497	0,0126	-0,1876
P6	0,5832	-0,259	0,2373	0,5282	-0,2852	0,027	0,0999	-0,1473
P7	0,634	-0,1521	0,265	-0,2966	0,3101	0,1329	-0,1285	-0,0066
P8	0,5121	0,3432	-0,2124	-0,3124	0,4773	0,0177	0,0323	0,0366
P9	0,6831	-0,2897	-0,1195	-0,3987	-0,2249	-0,0617	-0,2103	-0,075
P10	0,8278	-0,019	-0,0293	-0,3211	0,0392	0,1629	-0,1967	-0,039
P11	0,7238	-0,0048	0,3858	0,0475	-0,0306	0,2583	-0,044	-0,1486
P12	0,3547	-0,0508	0,5418	0,2984	0,16	0,3636	-0,0317	0,0336
P13	0,5465	0,3292	-0,3495	0,0223	0,1839	0,119	-0,2933	-0,073
P14	0,639	-0,1499	0,1577	0,044	-0,3632	0,1471	-0,2552	0,3582
S1	0,4576	0,1168	-0,3803	0,1164	0,1561	0,4246	0,0906	0,3517
S2	0,7011	-0,1311	-0,3902	0,2328	-0,1589	0,2779	-0,0248	-0,0012
S3	0,6858	0,0844	-0,0431	0,1581	-0,108	-0,3309	-0,3393	0,0388
S4	0,2287	0,5927	-0,2928	0,2429	0,1947	0,0084	-0,0196	-0,4684
S5	0,4919	0,2056	-0,266	-0,2201	-0,5731	-0,1281	0,1921	-0,1982
S6	0,463	0,0218	-0,0428	0,6046	0,2607	-0,2688	0,3465	0,1006
S7	0,3929	0,5889	0,3482	0,0078	-0,2295	0,3142	0,1872	-0,233
S8	0,3404	0,6593	0,4228	0,057	0,0668	-0,2215	0,0081	0,2099
S9	0,6217	-0,1767	0,1533	-0,2133	0,1701	-0,1301	0,3969	-0,0696
S10	0,3463	0,3958	-0,4233	-0,0309	-0,173	0,0961	0,2954	0,3714
S11	0,6	0,1964	0,0545	-0,1887	-0,1577	-0,4311	-0,0017	0,1232

Table A.6: Unrotated factor loadings

A.3. Choosing the amount of factors

Kaiser-Guttman criterion: eigenvalues should be above 1.
The eigenvalues are an indicator of a factor's statistical strength and explanatory power (Watts and Stenner, 2012). An eigenvalue smaller than one should not be considered in the solution. An eigenvalue that is lower than 1 accounts for less variance than a single Q-sort and would not help reducing the dimensions of the data. Factor 1 to 7 satisfies this criterion (see table A.6).

Cumulative explained variance: should be larger than 50%
At least three factors are needed for this thesis to have a cumulative explained variance higher than 50% (see table A.6) (33%+10%+8%=51%).

Significantly loading Q-sorts per factor: at least two per factor.
Brown (1980) states that a factor can be considered for the solution if it has at least two significant factor loadings per factor. A factor loading is seen as significant (with a 0.01 level) if it satisfies the following equation:

$$\text{Factor loading} > \frac{2.58}{\sqrt{n_{\text{items Q-set}}}}$$

With a Q-set of 35 items, the equation that can be computed is:

$$\text{Factor loading} > \frac{2.58}{\sqrt{35}}$$

$$\text{Factor loading} > 0.436$$

To determine which factor solution meets this requirement, all rotated (more on this in the next section) factors in the factor solution must meet the requirement.

2-Factor solution:

- Factor 1 does satisfy this equation (0.78, 0.75)
- Factor 2 does satisfy this equation (0.74, 0.71)

3-Factor solution:

- Factor 1 does satisfy this equation (0.79, 0.72)
- Factor 2 does satisfy this equation (0.76, 0.66)
- Factor 3 does satisfy this equation (0.70, 0.67)

4-Factor solution:

- Factor 1 does satisfy this equation (0.76, 0.76)
- Factor 2 does satisfy this equation (0.82, 0.72)
- Factor 3 does satisfy this equation (0.67, 0.67)
- Factor 4 does satisfy this equation (0.83, 0.71)

5-Factor solution:

- Factor 1 does satisfy this equation (0.80, 0.76)
- Factor 2 does satisfy this equation (0.80, 0.74)
- Factor 3 does satisfy this equation (0.69, 0.67)
- Factor 4 does satisfy this equation (0.87, 0.66)
- Factor 5 only has one significant loading and does not satisfy this equation

6-Factor solution:

- Factor 1 does satisfy this equation (0.80, 0.76)
- Factor 2 does satisfy this equation (0.80, 0.74)
- Factor 3 does satisfy this equation (0.69, 0.67)
- Factor 4 does satisfy this equation (0.87, 0.66)
- Factor 5 only has one significant loading and does not satisfy this equation
- Factor 6 does satisfy this equation (0.72, 0.67)

7-Factor solution:

- Factor 1 does satisfy this equation (0.80, 0.65)
- Factor 2 only has one significant loading and does not satisfy this equation
- Factor 3 does satisfy this equation (0.69, 0.69)
- Factor 4 only has one significant loading and does not satisfy this equation
- Factor 5 does satisfy this equation (0.66, -0.62)
- Factor 6 does not satisfy this equation (0.79, 0.64)
- Factor 7 does not satisfy this equation (0.75, 0.70)

Out of these factor solutions can be concluded that a factor solution with 2, with 3 and with 4 satisfies the requirement of two significantly loading Q-sorts per factor. From now, only these factor solutions are considered in the next criteria.

Humphrey's rule: cross-product of two highest loadings should be larger than standard error

Humhrey's rule has a strict version and a less strict version. In the strict version the factor is significant if the cross-product of the two highest loadings exceeds twice the standard error (brown,1980). The standard error can be calculated by this equation:

Standard error = $\frac{1}{\sqrt{n_{\text{items Q-set}}}}$

With a Q-set of 35 items:

Standard error = $\frac{1}{\sqrt{35}} = 0.17$

The cross-products of the factors in a 2, 3 and 4-factor solution are:

2-Factor solution:

- Factor 1: (0.78 x 0.75)= 0,59
- Factor 2: (0.74 x 0.71)= 0,53

3-Factor solution:

- Factor 1: (0.79 x 0.72)= 0,57
- Factor 2: (0.76 x 0.66)= 0,50
- Factor 3: (0.70 x 0.67)= 0,47

4-Factor solution:

- Factor 1: (0.76 x 0.76)= 0,58
- Factor 2: (0.82 x 0.72)= 0,59
- Factor 3: (0.67 x 0.67)= 0,45
- Factor 4: (0.83 x 0.71)= 0,59

With a standard error of 0,17 and twice 0,34, the 2, 3, and 4-factor solutions satisfy the strict Humprey's rule.

Criteria	2 factor solution	3 factor solution	4 factor solution	5 factor solution	6 factor solution	7 factor solution	8 factor solution
Kaiser-Guttman	x	x	x	x	x	x	
Cumulative explained variance larger than 50%		x	x	x	x	x	x
Two significantly loading Q-sorts per factor	x	x	x				
Humphrey's rule strict	x	x	x				
Cumulative explained variance	43%	51%	58%	64%	69%	73%	77%

Table A.7: Factor solutions

The amount of factors

According to table A.7, only a 3 and a 4 factor solution satisfies all criteria. Deciding the amount of factors is not an exact science:"Objectively, there is no one correct number of factors to use as any number of factors will provide insights into how the participants think" (Damio, 2018). Using the scores of the factor solutions on the criteria, together with the perspectives that the interviews gave, a 4-factor solution is chosen to describe the perspectives. A 4-factor solution has a higher explained variance. Moreover, a 3-factor solution consists of a bi-polar factor, which has to be split.

{Factor rotation Next, the unrotated factor loadings of four chosen factors are used as coordinates to map the relative positions of the Q-sorts. By rotating the factors there can be ensured that the factor offers the best viewpoint on the perspectives (Watts and Stenner, 2012). The factors are rotated by a Varimax rotation, which conducts the process automatically using statistical data. The product of the rotation are the rotated factor loadings. These rotated factor loadings are shown in the matrix of table A.8.

Q-sort	Factor 1	Factor 2	Factor 3	Factor 4
P1	0,7255	0,3217	0,1027	0,0733
P2	0,5193	-0,4844	-0,0199	0,1037
P3	0,4804	-0,0361	0,129	0,6418
P4	0,19	-0,3768	0,1852	0,509
P5	0,3523	-0,116	0,3252	0,6641
P6	0,1947	0,1124	-0,0759	0,8284
P7	0,7305	0,1017	0,0203	0,1971
P8	0,4046	0,1503	0,5759	-0,0696
P9	0,756	-0,2522	0,2495	0,1624
P10	0,7649	0,0386	0,3897	0,2262
P11	0,5725	0,3491	0,0366	0,4733
P12	0,2164	0,3968	-0,274	0,4813
P13	0,1829	0,1046	0,6674	0,1999
P14	0,4893	0,0838	0,0858	0,4515
S1	0,1062	-0,0731	0,5326	0,2846
S2	0,2572	-0,2142	0,5091	0,5865
S3	0,3368	0,1542	0,3712	0,4788
S4	-0,2221	0,3238	0,6178	0,1116
S5	0,3515	0,0235	0,5278	0,028
S6	-0,0814	0,1387	0,2196	0,7129
S7	0,2159	0,7173	0,2373	0,0709
S8	0,1524	0,8167	0,196	0,0623
S9	0,6449	0,0225	0,0784	0,2533
S10	0,0429	0,0721	0,6703	0,0206
S11	0,4962	0,2393	0,3385	0,1382
% Explained variance	**19**	**9**	**13**	**16**
Colored cell	Significance 0.01 level			

Table A.8: Rotated factor loadings

The rotated factor loadings are accessed on their significance level to rate if they are significant to that factor. A significance level of 0.01 means that the factor loading is closer to the factor than 99% of all Q-sorts possible. This level would be an appropriate level to start with. Calculating the significance on this level is done earlier in this thesis. It was used as a criterion for choosing the amount of factors. A factor loading is seen as significant (with a 0.01 level) if it satisfies the following equation (Brown, 1980):

$$\text{Factor loading} > \frac{2.58}{\sqrt{n_{\text{items Q-set}}}}$$

With a Q-set of 35 items, the equation that can be computed is:

$$\text{Factor loading} > \frac{2.58}{\sqrt{35}} = 0.436$$

Each factor loading with an absolute value larger than 0,436 could be a significant one and closely

approximate the viewpoint of that factor. However, some Q-sorts have significant factor loadings in multiple factors. These Q-sorts are cofounded. These Q-sorts are normally not included in the analysis as they are not beneficial for creating distinctions between the factors. However, if the perspective found in the interview of the cofounded Q-sort has greater similarities with one factor, they can still be included in that factor. This was the case for the cofounded Q-sorts of P2, P3 and P11. If the factor loading does not exceed the 0.01 significance level, it is a non-loader. Table A.8 shows initially no non-loaders. However, Q-sort P2 and S3 have factor loadings which are close to be cofounded and exceed the 0.01 significance level barely. Therefore, these Q-sorts are chosen to be non-loaders. Table.. gives an overview of the Q-sorts that are used for describing the perspectives. In total, 21 of the 25 Q-sorts are used. The second factor only has two significant factor loadings (S7 and S8). While this is not favorable, it is still a reliable factor estimate. According to Brown (1880), a factor estimate should be the composite of at least two Q-sorts.

Factor	Q-sort numbers	Total	Cumulative total
1	**P1; P2; P7; P9; P10; P11; S9; S11**	8	8
2	**S7; S8**	2	10
3	**P8; P13; S1; S4; S5; S10**	6	16
4	**P3; P4; P5; P6; S6**	5	21
Confounded	**P14; S2;** (P2; P3; P11)	2	23
Non-loader	**P12; S3**	2	25

Table A.9: Q-sort distribution

All chosen significant factor loadings will contribute to the final factor estimate. Nonetheless, the factor loading with a higher value will contribute proportionally more than factor loadings with a lower value (Watts and Stenner, 2012). The amount they contribute is based on their factor weights.

A.4. Z-scores

		Factor 1		Factor 2		Factor 3		Factor 4	
N	Statement	Z-score 1	Rank 1	Z-score 2	Rank 2	Z-score 3	Rank 3	Z-score 4	Rank 4
1	Have seniority and power within the organization	1,71	2	-0,19	22	-0,42	23	1,72	2
2	Be able to provide resources	0,59	13	0	17	-1,56	34	1,58	3
3	Be able to evaluate project manager performance	-0,94	28	0,1	16	0	18	-0,59	26
4	Be able to communicate effectively	1,19	4	0	18	0	19	0,06	17
5	Be able to provide leadership and vision	0,96	5	-0,75	26	1,24	5	1,31	5
6	Be decisive	0,53	14	1,03	6	1,53	3	1,78	1
7	Have social skills	-0,18	22	-0,38	23	-0,74	26	-0,98	29
8	Be able to manage stakeholders	0,69	10	1,22	4	0,1	17	1,25	6
9	Have genuine interest in project	1,87	1	0	19	0,16	15	-0,64	28
10	Be able to collaborate with project team	-1,75	34	0,19	14	-0,4	22	-2,43	35
11	Understand own role	0,11	17	0,47	9	0,19	14	0,68	9
12	Be able to set clear goals	-0,09	18	-1,22	31	1,59	2	1,18	7
13	Have constructive critical thinking	-0,14	19	1,22	5	0,56	11	0,71	8
14	Be able to motivate the project manager and project team	-1,05	29	-0,94	29	0,7	10	-1,15	32
15	Be able to understand the key risks	0,82	8	0,47	10	1,02	8	1,38	4
16	Be available and responsive	0,68	11	-1,03	30	0,12	16	0,25	13
17	Be able to link project with organizational objectives	0,93	6	1,98	2	1,06	6	0,24	14
18	Be trustworthy	0,88	7	0	20	-0,17	20	0,32	12
19	Be able to make comprehensive decisions	1,2	3	0,75	7	1,03	7	-0,53	23
20	Be able to support project manager	-0,46	25	0,28	11	0,89	9	-1,1	31
21	Have knowledge of project management	-2,36	35	0,75	8	-1,14	31	-0,53	24
22	Have knowledge of subject matter	-1,11	31	0,28	12	-0,96	28	-0,63	27
23	Be able to keep pace in project	-0,85	26	-1,22	32	-0,98	29	-0,39	22
24	Be able to empower the project manager	0,42	16	1,79	3	-0,39	21	-1,04	30
25	Be able to understand the key drivers	0,81	9	0,28	13	0,34	12	0,23	16
26	Collaborate with own organization	0,44	15	0	21	-0,49	25	0	18
27	Have sufficient time available	-0,25	23	-1,69	34	0,25	13	-0,22	21
28	Have access to information	-0,37	24	-1,98	35	-1,54	33	-1,37	33
29	Be objective	-1,31	33	-1,32	33	-0,45	24	-0,2	19
30	Be able to handle ambiguity	-0,16	20	-0,47	24	-0,84	27	-0,55	25
31	Understand the organization's strategy	-0,17	21	0,19	15	1,49	4	-0,22	20
32	Network actively	-1,3	32	-0,57	25	-1,96	35	0,24	15
33	Have imagination/creativity	-1,09	30	-0,75	27	-1,06	30	-1,49	34
34	Have political knowledge	-0,89	27	-0,75	28	-1,14	32	0,65	10
35	Focus on project outcomes	0,66	12	2,26	1	1,96	1	0,48	11

Table A.10: Z-scores

A.5. Factor arrays

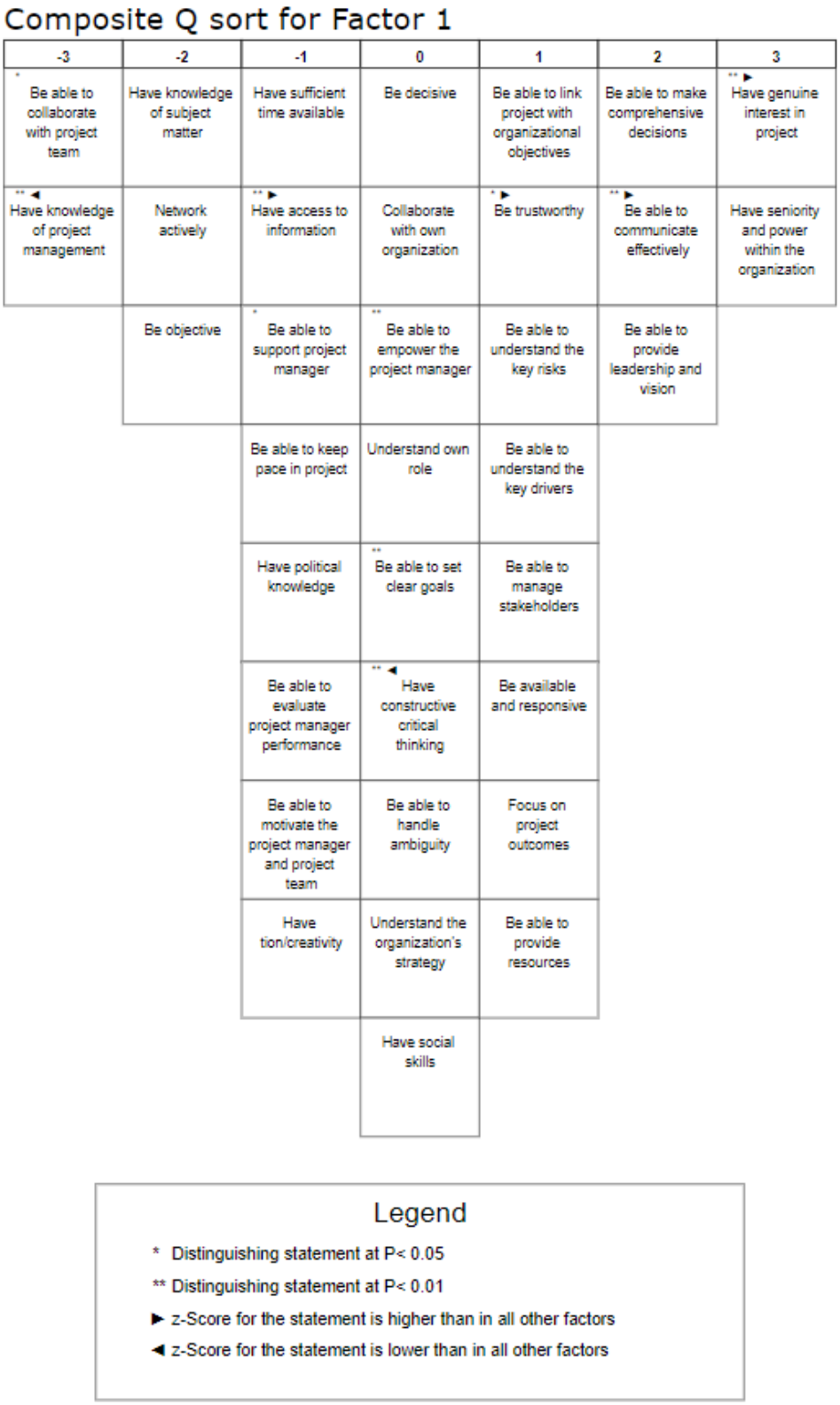

Table A.11: Array factor 1

Composite Q sort for Factor 2

-3	-2	-1	0	1	2	3
** ◄ Have sufficient time available	** ◄ Be able to set clear goals	Have social skills	Be able to collaborate with project team	Be decisive	** ► Be able to empower the project manager	Focus on project outcomes
Have access to information	Be able to keep pace in project	Be able to handle ambiguity	Understand the organization's strategy	Be able to make comprehensive decisions	Be able to manage stakeholders	* ► Be able to link project with organizational objectives
	Be objective	Network actively	Be able to evaluate project manager performance	** ► Have knowledge of project management	Have constructive critical thinking	
		** ◄ Be able to provide leadership and vision	Be able to provide resources	Understand own role		
		Have political knowledge	Be able to communicate effectively	Be able to understand the key risks		
		Have tion/creativity	Have genuine interest in project	Be able to understand the key drivers		
		Be able to motivate the project manager and project team	Be trustworthy	Be able to support project manager		
		** ◄ Be available and responsive	Collaborate with own organization	* ► Have knowledge of subject matter		
			Have seniority and power within the organization			

Legend

* Distinguishing statement at P< 0.05

** Distinguishing statement at P< 0.01

► z-Score for the statement is higher than in all other factors

◄ z-Score for the statement is lower than in all other factors

Table A.12: Array factor 2

Composite Q sort for Factor 3

-3	-2	-1	0	1	2	3
** ◄ Be able to provide resources	* Have knowledge of project management	Have seniority and power within the organization	Understand own role	Be able to link project with organizational objectives	Be decisive	Focus on project outcomes
* ◄ Network actively	Have political knowledge	Be objective	Have genuine interest in project	Be able to make comprehensive decisions	** ► Understand the organization's strategy	Be able to set clear goals
	Have access to information	Collaborate with own organization	Be available and responsive	Be able to understand the key risks	Be able to provide leadership and vision	
		Have social skills	* ◄ Be able to manage stakeholders	Be able to support project manager		
		Be able to handle ambiguity	Be able to evaluate project manager performance	** ► Be able to motivate the project manager and project team		
		Have knowledge of subject matter	Be able to communicate effectively	Have constructive critical thinking		
		Be able to keep pace in project	Be trustworthy	Be able to understand the key drivers		
		Have tion/creativity	* Be able to empower the project manager	Have sufficient time available		
			Be able to collaborate with project team			

Legend

* Distinguishing statement at P< 0.05

** Distinguishing statement at P< 0.01

► z-Score for the statement is higher than in all other factors

◄ z-Score for the statement is lower than in all other factors

Table A.13: Array factor 3

Composite Q sort for Factor 4

-3	-2	-1	0	1	2	3
Have tion/creativity	* ◄ Be able to support project manager	** ◄ Be able to make comprehensive decisions	* ◄ Be able to link project with organizational objectives	Be able to manage stakeholders	** ► Be able to provide resources	Be decisive
* ◄ Be able to collaborate with project team	Be able to motivate the project manager and project team	* Have knowledge of project management	* ► Network actively	Be able to set clear goals	Be able to understand the key risks	Have seniority and power within the organization
	Have access to information	Be able to handle ambiguity	Be able to understand the key drivers	Have constructive critical thinking	Be able to provide leadership and vision	
		Be able to evaluate project manager performance	Be able to communicate effectively	Understand own role		
		Have knowledge of subject matter	Collaborate with own organization	** ► Have political knowledge		
		Have genuine interest in project	Be objective	Focus on project outcomes		
		Have social skills	Have sufficient time available	Be trustworthy		
		* ◄ Be able to empower the project manager	Understand the organization's strategy	Be available and responsive		
			Be able to keep pace in project			

Legend

* Distinguishing statement at P< 0.05

** Distinguishing statement at P< 0.01

► z-Score for the statement is higher than in all other factors

◄ z-Score for the statement is lower than in all other factors

Table A.14: Array factor 4

A.6. Interpretation

The crib sheets list all statements that were the highest and the lowest of the factor. In addition, all statements that were relatively more positive or negative compared to other factors are listed.

A.7. Crib sheets

Factor 1

n	Highest Ranked Statements	Score
9	Have genuine interest in project	3
1	Have seniority and power within the organization	3
n	Positive Statements Ranked Higher in Factor 1 Array than in Other Factor Arrays	Score
19	Be able to make comprehensive decisions	2
4	Be able to communicate effectively	2
5	Be able to provide leadership and vision	2
18	Be trustworthy	1
25	Be able to understand the key drivers	1
16	Be available and responsive	1
26	Collaborate with own organization	0
30	Be able to handle ambiguity	0
7	Have social skills	0
n	Negative Statements Ranked Lower in Factor 1 Array than in Other Factor Arrays	Score
6	Be decisive	0
11	Understand own role	0
13	Have constructive critical thinking	0
31	Understand the organization's strategy	0
3	Be able to evaluate project manager performance	-1
22	Have knowledge of subject matter	-2
29	Be objective	-2
n	Lowest Ranked Statements	Score
10	Be able to collaborate with project team	-3
21	Have knowledge of project management	-3

Table A.15: Crib sheet factor 1

A.8. Crib sheets

Factor 2

n	Highest Ranked Statements	Score
35	Focus on project outcomes	3
17	Be able to link project with organizational objectives	3
n	Positive Statements Ranked Higher in Factor 2 Array than in Other Factor Arrays	Score
24	Be able to empower the project manager	2
8	Be able to manage stakeholders	2
13	Have constructive critical thinking	2
21	Have knowledge of project management	1
11	Understand own role	1
20	Be able to support project manager	1
22	Have knowledge of subject matter	1
25	Be able to understand the key drivers	1
10	Be able to collaborate with project team	0
3	Be able to evaluate project manager performance	0
26	Collaborate with own organization	0
n	Negative Statements Ranked Lower in Factor 2 Array than in Other Factor Arrays	Score
31	Understand the organization's strategy	0
4	Be able to communicate effectively	0
18	Be trustworthy	0
7	Have social skills	-1
30	Be able to handle ambiguity	-1
5	Be able to provide leadership and vision	-1
16	Be available and responsive	-1
12	Be able to set clear goals	-2
23	Be able to keep pace in project	-2
29	Be objective	-2
n	Lowest Ranked Statements	Score
27	Have sufficient time available	-3
28	Have access to information	-3

Table A.16: Crib sheet factor 2

A.9. Crib sheets

Factor 3

n	Highest Ranked Statements	Score
35	Focus on project outcomes	3
12	Be able to set clear goals	3
n	Positive Statements Ranked Higher in Factor 3 Array than in Other Factor Arrays	Score
31	Understand the organization's strategy	2
5	Be able to provide leadership and vision	2
20	Be able to support project manager	1
14	Be able to motivate the project manager and project team	1
25	Be able to understand the key drivers	1
27	Have sufficient time available	1
3	Be able to evaluate project manager performance	0
10	Be able to collaborate with project team	0
n	Negative Statements Ranked Lower in Factor 3 Array than in Other Factor Arrays	Score
11	Understand own role	0
8	Be able to manage stakeholders	0
4	Be able to communicate effectively	0
18	Be trustworthy	0
1	Have seniority and power within the organization	-1
26	Collaborate with own organization	-1
7	Have social skills	-1
30	Be able to handle ambiguity	-1
34	Have political knowledge	-2
n	Lowest Ranked Statements	Score
2	Be able to provide resources	-3
32	Network actively	-3

Table A.17: Crib sheet factor 3

A.10. Crib sheets

Factor 4

n	Highest Ranked Statements	Score
6	Be decisive	3
1	Have seniority and power within the organization	3
n	Positive Statements Ranked Higher in Factor 4 Array than in Other Factor Arrays	Score
2	Be able to provide resources	2
15	Be able to understand the key risks	2
5	Be able to provide leadership and vision	2
11	Understand own role	1
34	Have political knowledge	1
18	Be trustworthy	1
16	Be available and responsive	1
32	Network actively	0
26	Collaborate with own organization	0
29	Be objective	0
23	Be able to keep pace in project	0
n	Negative Statements Ranked Lower in Factor 4 Array than in Other Factor Arrays	Score
17	Be able to link project with organizational objectives	0
25	Be able to understand the key drivers	0
4	Be able to communicate effectively	0
31	Understand the organization's strategy	0
19	Be able to make comprehensive decisions	-1
30	Be able to handle ambiguity	-1
3	Be able to evaluate project manager performance	-1
9	Have genuine interest in project	-1
7	Have social skills	-1
24	Be able to empower the project manager	-1
20	Be able to support project manager	-2
14	Be able to motivate the project manager and project team	-2
n	Lowest Ranked Statements	Score
33	Have imagination/creativity	-3
10	Be able to collaborate with project team	-3

Table A.18: Crib sheet factor 4