Research Thesis
for the
Master of Project Management

Leadership in Highly Complex and Risky Projects

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ABSTRACT

Up until 2005 research had largely ignored leadership of the project manager as a success factor of projects. Since then, research has been performed aimed at leadership of the project manager and its relation to project success. Indeed, it was found that effective leadership of the project manager contributes to project success. Furthermore, as may be expected based on the notion that what constitutes effective leadership depends on the situation, the context of the project was found to have an impact on the relation to project success. Although leadership profiles have been developed for different types of projects, project management leadership literature has not yet provided for an in-depth understanding of effective leadership in the specific context of highly complex and risky projects.

This study sets out to develop a better understanding in this regard. To this end, the research question is as follows: How can effective leadership of the project manager in highly complex and risky projects be explained, according to experienced project managers and their line managers? In order to answer this question, a qualitative research approach was adopted. A total of nine project managers and two line managers of project managers with a minimum of ten years of experience in their function from various industries were interviewed or participated in a focus group session. Respondent validation was used as a means to increase the validity of the findings.

This study looked beyond the concepts of the leadership dimensions questionnaire (LDQ), being the main instrument used in project management leadership research so far, and instead identified concepts used by experienced project managers and their line managers. This generated a total of fourteen concepts, which were also conceptualized based on the data. The concepts were found to be interrelated to a higher extent than expected. The relations between the concepts were described, as well as the contributions to effective leadership of the concepts. These findings were then used to develop a conceptual framework that may be used to explain effective leadership of the project manager in highly complex and risky projects. Four of the concepts were classified as environmental dimensions, meaning that they relate to the project environment rather than the leader as a person. The notion that the project manager tries to establish certain environmental dimensions is a novel way to explain effective leadership compared to existing project management leadership literature that assesses effective leadership in different contexts.

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Before you lies the research thesis ‘Leadership in Highly Complex and Risky Projects’. It forms the concluding part of the Master of Project Management of the University of Applied Sciences Utrecht, which I enjoyed so much.

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I wish to thank all participants that took part in this study. It was inspiring to listen to each of you. Despite the diversity among you, the utter similarities you displayed at times were surprising and a genuine pleasure to behold.

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For those that I have thanked, I hope that you feel that these words are sincere. If this journey has thought me one thing, it is that sincerity is a virtue.

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1 Introduction & background

Up until 2005 research had largely ignored the relation between the leadership style and competencies of project managers and project success (Turner & Müller, 2005). In a later study, it was found that the project manager's leadership style and competencies indeed influence project success and also that different leadership styles are effective for different types of project (Müller & Turner, 2007). Later research has also examined this relation in several ways (e.g., Geoghegan & Dulewicz, 2008; Müller, Geraldi, & Turner, 2012; Müller & Turner, 2010b), supporting the notions that leadership of the project manager influences project success and that effective leadership depends on the context.

One of the factors that impacts what constitutes effective leadership of the project manager is the environment in which the project takes place. For example, it was found that environmental risk impacts leadership (Antonakis, Avolio, & Sivasubramaniam, 2003). Turner and Müller (2010b) found that the leadership profiles of project managers of top performing projects depend on the project type, with project complexity being one of the attribute types. Müller, Geraldi and Turner (2012) later further studied the influence of project complexity on the relationship between the project manager's leadership competencies and project success and also found that project complexity is a moderating factor.

Literature on complexity and risk provides for some suggestions as to what may be relevant in order to cope with high levels of complexity and risk in projects. Examples of factors that were found to aid in dealing with complexity are information sharing, collaboration, timely reaction and stakeholder relationship (Zhu & Mostafavi, 2017). In relation to risk, factors include effective communication, project goal understanding, project manager authority, support from the project team and problems handling (Belout & Gauvreau, 2004; Couillard, 1995). Although these are valuable findings, they are at the level of the overall project system and do not provide for an in-depth understanding of what effective leadership of the project manager entails within highly complex and risky projects.

In relation to complexity and risk, High Reliability Organizations (HROs) form a specific category of organizations that operate complex systems and are exposed to high levels of risks with potentially catastrophic consequences. Examples are aircraft carriers, nuclear power plants and air traffic control. Such organizations require nearly error-free operation whilst operating systems that have a level of complexity that prevents complete knowledge and inevitably leads to uncertainty. HRO research may contain valuable insights, but is not specifically aimed at projects. So, although the context of HROs and the projects considered in this study are similar with regard to complexity and risk, it is unknown to what extent the findings of HRO literature also apply to projects, which are temporary in nature.

1.1 Problem statement

Based on literature there is strong reason to believe that effective leadership of the project manager positively contributes to project success and that contextual factors, such as complexity and risk, play an important role. However, what exactly constitutes effective leadership of the project manager in highly complex and risky projects and how it may be explained is only partly understood. Previous project management leadership research has investigated general leadership concepts, but does not provide for guidance as to what concepts are relevant and explain effective leadership in the specific context of highly complex and risky projects. Literature related to leadership in general or HROs may contain interesting notions, but is not specifically aimed at project managers, making it unclear to what extent these findings also apply in the context of projects. This leaves the question what specific concepts explain effective leadership of the project manager in highly complex and risky projects.

Furthermore, research approaches commonly used in project management leadership literature no longer seem suitable for this specific context. For example, in one study successful project managers of highly complex projects scored high on all of the measured leadership dimensions (Müller & Turner, 2010b). Because of this and other reasons described in the literature review section, quantitative research approaches and the contingency theory

perspective frequently used in project management leadership literature have reached their limits when it comes to contributing to an in-depth understanding of effective leadership of the project manager in the specific context of highly complex and risky projects. Therefore, another approach needs to be used in order to gain further insights when it comes to this topic. This study therefore will attempt to adopt an alternative more appropriate research approach and aims to contribute to a better understanding of effective leadership of the project manager in highly complex and risky projects.

1.2 Research questions

The purpose of this study is to develop a better understanding of effective leadership of the project manager in highly complex and risky projects. Therefore, the main research question of this study is:

> How can effective leadership of the project manager in highly complex and risky projects be explained, according to experienced project managers and their line managers?

Andriessen (2011) suggests that in order to answer research questions that have an explanatory function, the associated sub questions should involve lower-order functions. The first sub question is therefore aimed at defining concepts, followed by sub questions that are aimed at describing these concepts, their relations and their contribution to effective leadership in highly complex and risky projects. The associated sub questions of this study are:

a. What concepts are used by experienced project managers and their line managers to explain effective leadership in highly complex and risky projects?
b. How can the concepts used by experienced project managers and their line managers be described?
c. How can the relations between the concepts used by experienced project managers and their line managers be described?
d. How do the concepts used by experienced project managers and their line managers contribute to effective leadership in highly complex and risky projects?

The answer to sub question (a) will be a list of concepts that were found to be used by experienced project managers and their line managers to explain effective leadership by the project manager in highly complex and risky projects. The answers to sub questions (b), (c) and (d) will be descriptions against each of these concepts, their relations and their contribution to effective leadership respectively. The answers of the sub questions will ultimately be presented in one table for the sake of overview. A developed conceptual framework derived from the data that shows the concepts and relations will be used as a form to answer the main research question.

1.3 Relevance

With regard to the theoretical relevance, this study in general aims to contribute to the existing body of knowledge by providing for a better understanding of effective leadership of project managers in the context of highly complex and risky projects. More specifically, a list of relevant concepts will be defined to answer the first sub question, which may generate novel concepts that prove to be relevant. This would be a valuable contribution, as previous studies only provide a limited understanding as to what exact concepts are relevant in this context. Furthermore, the findings of this study will also include descriptions of the concepts, thereby providing for conceptualization, which should make it easier for future research to build upon the findings of this study. Also, relations between the concepts and their contribution to effective leadership are explored, which should generate novel insights as this has not been done previously in this specific context.

In relation to the practical relevance, the relevance of the findings of this study is twofold: they may aid both development and selection of project managers. With regard to development, the findings are interesting for project managers and line mangers of project managers. Project managers themselves may learn from the findings of this study by reflecting upon the appropriateness of their own leadership in highly complex and risky projects. Line managers of project managers may use the findings as a way to look at what aspects are important to

develop for project managers for these projects. Furthermore, regarding selection, the findings of this study may help people involved in allocation of project managers, such as line managers of project managers and project sponsors, with selecting project managers for projects that are highly complex and risky. Also, in the case of line managers, it may also help with selecting project managers for their company in general.

1.4 Outline

Subsequent to this section, literature will be reviewed in section 2 covering several topics. Also, the overall conceptual framework that is adopted and will be further developed as part of this study is presented. Section 3 describes the research method and design.

For the sake of readability and in order to more easily distinguish between the factual findings and commentary, the findings are presented mainly factual in section 4 and the discussion of the findings is provided separately in section 5. Lastly, the conclusions and recommendations are given in section 6.

2 Literature Review

In this section literature relevant to the research topics is reviewed in order to assess what is currently already known. The topics of the literature review include the following:

- Leadership
- Effective leadership of the project managers
- Project complexity and risk

This section will cover each of these topics, including what is known about their relationships. At the end of this section the overall conceptual framework that is adopted will be presented, which will be further developed as part of this study as a way to answer the main research question.

2.1 Leadership

Through time multiple leadership theories have developed. Several authors (Turner & Müller, 2005; Müller & Turner, 2006; Patrington, 2007; Müller & Turner, 2010b) have presented these as the following major schools of thought:

- The trait school
- The behavioural school
- The contingency school
- The visionary and emotional intelligence school
- The competency school

These schools will be discussed separately, followed by a brief outline of these views on leadership.

The trait school

The train of thought of the trait school, which came in the 1930-1940's, is that leaders show similar traits. Knowing these generic traits would enable selection of leaders based on how these traits were possessed by individuals. Research on these traits has focussed on three main areas (Patrington, 2007): abilities (e.g., communication skills), personality variables (e.g., self-confidence) and even physical traits (e.g., size). It is important to note that what is to be led is not taken into account by this school, so the aim is to find traits for leaders, regardless of whether they lead an army or a project. A more recent study claims that generic traits can indeed be found among successful leaders: drive, leadership motivation, honesty and integrity, self-confidence, cognitive ability and knowledge of the business (Kirkpatick & Locke, 1991).

The behavioural school

The 1940's also brought the behavioural school, which focusses on the styles adopted by leaders. Thus, effective leaders do not have the same characteristics, but behave in similar ways. Parameters considered in the best-known studies of this school include concern for people, concern for production, use of authority, involvement of the team in decision-making (formulating), involvement of the team in decision-taking (choosing) and flexibility (Turner & Müller, 2005). Typical is the matrix of Blake and Mouton with the dimensions concern for people and concern for production, which is referred to as the managerial grid. They concluded that the best leaders scored high on both dimensions (Patrington, 2007).

The contingency school

With the 1960's came the thought that what makes an effective leader depends on the situation, which is referred to as the contingency school. Instead of assuming that effective leaders show the same traits or behaviour regardless of the situation, contingency factors were being considered that affected what constitutes effective leadership. One of the theories that reflects this reasoning is the path-goal theory as defined by House and Mitchell (1975). Two types of contingency factors are considered by this theory. The first type concerns the characteristics of subordinates and include locus of control, perception of their own ability and authoritarianism. Secondly, environmental factors (in the sense that subordinates do not have control over them) are considered, which are the subordinates' task, the formal authority system and the work

group (i.e., colleagues). Depending on these factors, the following four leadership styles contribute to the satisfaction and motivation of subordinates:

- Directive
- Supportive
- Participative
- Achievement-oriented

Multiple relations are described by path-goal theory, such as a positive correlation between satisfaction of subordinates who have to perform ambiguous tasks and directive leadership, and a negative correlation when the tasks are unambiguous. This is an example of the contingency of the appropriateness of directive leadership on the subordinates' task. Other contingencies are also described by path-goal theory, contributing to the notion that effective leadership depends on the situation.

The visionary and emotional intelligence school

During the 1980's, leaders that were able to change organizations through vision led to the visionary school. Bass (1990) differentiated between transactional and transformational leadership. Transactional leadership relates to the exchange of reward for effort between leader and follower. It is characterized by contingent reward and management by exception. Transformational leadership occurs when leaders are able to broaden the interests of their followers, create acceptance of the mission of the group and make followers focus on the group interest (Bass, 1990). Characteristics of a transformational leader are charisma, inspiration, intellectual stimulation and individualized consideration.

In the late 1990's the emotional intelligence school developed, also with a focus on the somewhat softer factors. Emotional intelligence is considered more important than intellectual intelligence for leaders by this school. This believe was supported by Goleman, who together with Boyatzis and McKee (2002) described four dimensions of emotional intelligence and six leadership styles. Two of the four dimensions of emotional intelligence are personal competences: self-awareness and self-management. The other two are social competences: social awareness and relationship management. With regard to the six leadership styles, four styles can have a positive long-term effect, which are labelled as visionary, coaching, affiliative and democratic. Their appropriateness depends on the situation. The two styles pacesetting and commanding have a negative long-term effect, and are only recommended during crisis.

The competency school

The most recent school focusses on competencies exhibited by leaders. Elements of the other schools are often reflected in the theories put forward by this school, such as contingency of competencies for different leadership styles and emotional intelligence competencies. Dulewicz and Higgs (2005) describe fifteen dimensions of leadership, grouped into three intellectual (IQ), five managerial (MQ) and seven emotional and social (EQ) dimensions. These dimensions can be measured by the leadership dimension questionnaire (LDQ), developed by the same authors. In their study, they also derived three broad categories of leadership styles based on previous literature: goal-oriented, involving and engaging. These range from leader-centric to facilitative, and are appropriate from low to high levels of change respectively.

Another leadership instrument is Bass and Avolio's multifactor leadership questionnaire (MLQ), that distinguishes nine leadership factors, which in turn are linked to three leadership styles of the visionary school: transformational, transactional and nontransactional laissez-faire leadership. In a study on the validity of this instrument, Antonakis, Avolio and Sivasubramaniam (2003) also argued that context factors may affect the means and interrelationships of leadership factors. It was indeed found that means and interrelations of the MLQ leadership factors differ among groups with different contextual factors, of which one was environmental risk. They argued that in high risk conditions, active management-by-exception may play a more prominent and effective role.

Views on leadership

Comparing these different schools, it may be argued that the competency school encompasses elements from the other schools. This is also referred to as the integrated model (Müller & Turner, 2010a). For example, the LDQ embraces both competencies and characteristics (Dulewicz & Higgs, 2005), of which the latter can be considered in line with the trait school. Dulewicz and Higgs (2005) also explicitly recognize the importance of behavioural factors and emotional intelligence, with EQ being one of the groups of leadership dimensions of the LDQ. Aspects from the contingency and visionary school can also be recognized: the three leadership styles defined by Dulewicz and Higgs (2005) are appropriate depending on the level of change and complexity, with the engaging style being appropriate for a highly transformational context.

In general, studies on leadership have not discarded the ideas of previous schools. For example, a study on leadership style differences between men and women was conducted in 2001, long after emergence of the trait school (Eagly & Johannesen-Schmidt, 2001). Antonakis, Avolio and Sivasubramaniam (2003) can be considered another example, who found leadership to be context-specific using the MLQ, decades after the rise of the contingency school. Recognition that traits, behaviour, context, vision, emotional intelligence, and competencies are all related to leadership, and that the ideas of the leadership schools are not mutually exclusive, may be something important to realize. Though some notions may have become less radical, aspects of those notions can remain relevant. For example, the belief that leaders are simply born is outdated, however personality traits and gender can indeed be linked to leadership (Kirkpatick & Locke, 1991; Eagly & Johannesen-Schmidt, 2001). Thus, one may argue that depending on the focus and aim of one's study, appropriate elements can be selected from any of the leadership schools.

Leadership poses somewhat of a challenge when it comes to formulating a working definition, as there are a great many definitions of leadership in use (Silva, 2016). Over 850 definitions have been developed in decades of academic analysis, but still no clear understanding exist of what distinguishes effective leaders from ineffective leaders (Bennis & Nanus, 2012). Rather than adopting a specific working definition of leadership, this study takes specific note of the description of Warren Bennis and Burt Nanus of the difference between managers and leaders:

> To manage means to bring about, to accomplish, to have responsibility for, to conduct. Leading is influencing, guiding in direction, course, action, and opinion. This distinction is crucial. Managers are people who do things right and leaders are people who do the right things.

This description is also referred to in project manager leadership literature by Müller and Turner (2010a, pp. 2–3). As this study focuses on leadership aspects, this description is deemed helpful to differentiate between leadership and management. Furthermore, it is quite comprehensive in that it does not steer towards specific aspects of leadership, which is the case with definitions which emphasize for example topics such as competencies, vision or generating followers.

2.2 Effective leadership of project managers

Effective leadership of project managers is more specific than leadership in several ways. Firstly, it concerns the project manager, rather than leaders in general. Secondly, the adjective effectively implies some positive effect. This section will first discuss what may be understood by effective leadership. Subsequently, project management leadership literature is reviewed in more detail. Lastly, literature on project success is briefly discussed because of its relevance to the view on effective leadership of project managers that is adopted in this study.

Effective leadership

In general leadership literature, effective leadership is often used as a term, but what constitutes effective in this sense is seldomly explicitly defined (e.g., Bennis & Nanus, 2012; Dulewicz & Higgs, 2005). This may however be advisable, given the variety of measures of effective leadership that were found as part of one literature study, such as subordinate job satisfaction, group performance and commitment (Madanchian, Hussein, Noordin, & Taherdoost, 2017). Implicitly, effectiveness often refers to leadership that is appropriate for the situation at hand,

leading to some positive effect. For example, in their article about the LDQ, Dulewicz and Higgs (2005) refer to an examination of leadership effectiveness where it was found that a certain leadership style was necessary for success in a specific context, thereby implicitly relating effective leadership to success.

Within project management leadership literature, the use of the term effective leadership differs. Turner and Müller (2005) use the term frequently in suggesting that the project manager's leadership style is a success factor on projects, but do not provide a definition of effective leadership. Less prominently, the term is also used in later project management leadership literature (Geoghegan & Dulewicz, 2008; Müller & Turner, 2007). Yet, surprisingly, Müller and Turner (2010b) completely leave out the term and refer to successful project managers (i.e., project managers of successful projects) instead. The same authors do however provide an interesting and usable description of appropriate leadership, referring to it as an appropriate combination of leadership dimensions that leads to optimal project performance for a given project (2010a). Derived from this description, the working definition adopted in this study of effective leadership of the project manager is:

> The appropriate deployment of a set of leadership concepts that leads to optimal project performance within a given context.

Optimal project performance, in this sense, should positively contribute to ultimately achieving project success.

Project management leadership

Turning to project management leadership literature, Müller and Turner have, in some cases together with other authors, published many of the leading articles related to leadership of project managers. In an initial literature review Turner and Müller (2005) argued that research on project success factors had largely ignored the project manager, and its leadership style and competencies. They expressed an aim for themselves to determine in following research whether the competence, including leadership style, of the project manager is a success factor and whether difference profiles are appropriate for different projects.

In a subsequent study, they concluded that the project manager's leadership style and competencies, measured by the fifteen dimensions of the LDQ, indeed influences project success (Müller & Turner, 2007). Furthermore, they also found that different leadership styles and competencies are appropriate for different types and phases of projects. For example, on medium complexity projects, the LDQ dimensions emotional resilience and engaging communication were found to be important, whilst on high complexity projects interpersonal sensitivity was found to be important. A more in-depth look at the study reveals that a contingency model was used, shown in Figure 1, with leadership competencies of the project manager as the independent variable, project success as the dependent variable, and project type as the moderating variable. With regard to their research method, both a qualitative and a quantitative study was performed by conducting interviews and a web-based questionnaire respectively. The interviewees were line managers responsible for allocating project managers to projects. The results of the interviews were used to validate the research model, which led to modification of the elements of project type and project success. The leadership dimensions of the LDQ were ranked as part of the interviews, which has not let to any alterations. Subsequently, web-based questionnaires were used to measure the model variables and demographics, which included the respondent's job function.

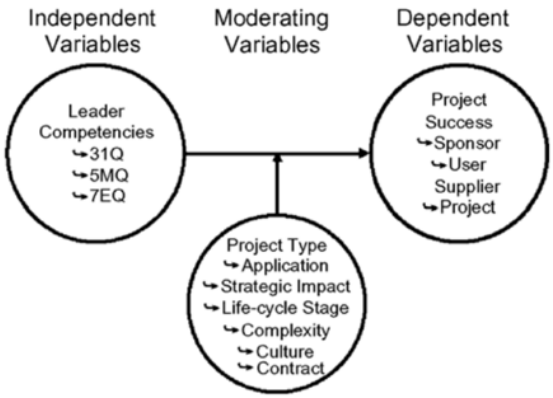

Figure 1 Research model of Müller and Turner (2007)

Looking at the method used for the quantitative study, it is mentioned that members of professional organizations in project management (e.g., PMI, IPMA) were targeted. Presidents of these organizations were asked to forward the questionnaire. No further details with regard to the exact population or sample selection are provided, so it is unclear whether only project managers were considered or that other job functions were also included. Measurement of project success and leadership was done on a self-report basis, asking respondents to rate questions on a five-point Likert scale. Müller and Turner (2007) themselves refer to the success criteria suggested by Westerveld and Gaya-Walters, which suggests measurement of appreciation of the sponsor, users, suppliers, project team and other stakeholders. Criteria related to the satisfaction of these groups were indeed included, but were rated by the respondents themselves, not by the groups in question. So, both the independent and dependent variable were measured by use of self-reports of the same respondent, which are both perceptual and subjective in nature, and represent the respondent's own competency and success. This may be heavily subject to response bias. Furthermore, the exact number of people that received the questionnaire is not known, so there is no way of determining the response rate. This makes it particularly difficult to judge whether participation bias may have influenced the results. For example, project managers that perceive themselves as competent or their projects as successful may be overrepresented. The results show that 257 of the 399 projects were rated as high performing, but no other figures were presented to verify whether this is a realistic percentage. Summarizing, the study of Müller and Turner (2007) provides for a useful framework and the both qualitative and quantitative approach is a strong point, but mainly the quantitative study has some limitations.

Müller and Turner (2010b) later studied leadership profiles of project managers of successful projects for different project types, varying in application type, complexity, importance and contract type. Project managers of successful projects were found to exhibit different leadership profiles. For example, successful project managers of highly complex projects scored high on all fifteen LDQ dimensions, whilst for projects of medium complexity successful project managers scored high on eight of the fifteen dimensions. The study focusses on the project manager profiles of successful projects, by looking at a sub-sample of high performing projects. So rather than studying the correlation and contingency factors of project manager leadership and project success, this study assumes there is a correlation and seeks to find the project manager profiles associated with successful projects in several contexts. Nevertheless, the used method is very much similar to their study of 2007 and includes the same limitations, such as response bias due to self-reporting. In addition, the results show project manager profiles for some types of high performing projects that score high on nearly all to all of the fifteen LDQ dimensions: for ICT projects the profile scores high on thirteen dimensions, for fixed price projects on fourteen dimensions and for highly complex projects on all fifteen dimensions. Leaving aside the aforementioned limitations of the study, it may indeed be true that successful project managers of highly complex projects show higher levels of leadership competencies in general compared to those of less complex projects. However, due to this, the results do not provide for specific guidance or insights for selecting project managers for such projects other than that they have to be highly competent in nearly all dimensions of leadership as measured by the LDQ. Taking into consideration the notion that different leadership styles are appropriate for different types of projects (Müller & Turner, 2007), it seems unlikely that there would be very

limited differences in leadership of the project manager between ICT, fixed price and highly complex projects. Rather, the instruments and method used in the study may not have been able to find any specific differences, because these are simply outside the range of measurement of the used instruments (i.e., the LDQ).

Focussing on complexity, Müller et al. (2012) studied the moderating effects of different types of complexity on the relationship between the IQ, EQ and MQ dimensions and project success. In this study, a contingency model similar to Müller and Turner (2007) was again adopted, with leadership competences of the project manager as the independent variable, project success as the dependent variable, and project complexity type as the moderating variable. The means of the LDQ IQ, EQ and MQ dimensions were used to operationalize the leadership competences. The project complexity types were complexity of faith (related to uncertainty), complexity of fact (related to structural complexity) and complexity of interaction (related to organizational change). Project success was measured by both soft and hard factors and the self-defined success criteria of the project. They found that the EQ and MQ dimensions of the project manager significantly and positively impacted project success, and the IQ dimensions did not. With regard to the moderating effect of the project complexity type, they found that the EQ and MQ dimensions are moderated by complexity of faith and complexity of fact: higher levels of these complexity types reduced the impact of the EQ and MQ dimensions. With regard to data collection, this was done similarly to the earlier studies of Müller and Turner with comparable limitations (e.g., mono-source, self-reporting).

In addition to Müller and Turner, other authors have also studied the relation between the project manager's leadership competencies and project success. Geoghegan and Dulewicz (2008) studied this relationship using the LDQ and the project success questionnaire (PSQ). They found that the LDQ dimensions critical analysis and judgement, influencing, motivation, resource management, empowering and developing have a significant positive correlation with the PSQ variable 'solves problem'. Resource management and empowering were also found to have a significant positive correlation with the variable 'on budget'. The dimensions self-awareness and interpersonal sensitivity significantly and positively correlate with the PSQ variable 'used by client'. This supports the notion that the project manager's leadership has an impact on project success, although not taking into consideration contextual factors. The model and method adopted by Geoghegan and Dulewicz (2008) differs somewhat from Müller and Turner's studies. Firstly, the study focusses on the correlation of the individual leadership dimensions of the LDQ with different project success variables. Also, no contingency factors were considered. In contrast with some of the studies of Müller and Turner, data for measuring project success was collected from project sponsors, rather than from the project managers that completed the LDQ. Furthermore, the response rate is known and can be considered high with 52 out of the 65 invited project managers. This addresses two of the major limitations of some of Müller and Turner's studies. However, the study was conducted in only one company that provides financial services and is based in the UK, which leaves the question to what extent the results may be generalized. The authors note that the study is exploratory in nature and indeed acknowledge this limitation explicitly.

On another note, Turner, Müller and Dulewicz (2009) examined differences between functional managers and project managers. Compared to functional managers, project managers scored higher on the LDQ dimensions conscientiousness, interpersonal sensitivity and critical analysis and judgement, and scored lower on engaging communication and developing. They also found that for project managers that leadership competences account for 31 percent of the variance in leadership performance (Turner et al., 2009), whereas for functional managers 71 percent of their leadership performance can be related to their leadership competence profile (Müller & Turner, 2010a). Leadership performance was measured in this study by six self-assessment questions included in the LDQ. The difference between functional and project managers in the correlation between leadership competences and leadership performance is notable, suggesting that the relation is weaker in the case of project managers or, alternatively, that the LDQ is a less appropriate instrument to measure leadership competences of project managers because other concepts are relevant for (the performance of) this group.

To summarize, the mentioned studies indicate that there is a relation between the leadership of the project manager and project success. Also, what constitutes effective leadership of the project manager seems to depend on the context. When it comes to an in-depth understanding of these relations, the studies are less conclusive. Geoghegan and Dulewicz (2008) disregard context and the studies of Müller and Turner have some limitations with regard to the used method and the range of measurement. Also, the LDQ dimensions seem less related to leader performance for project managers compared to functional managers (Turner et al., 2009). So, there are strong indications that there is a relation and that context plays a role, but additional research would contribute to a better and more detailed understanding, especially when looking at specific contexts.

Project success

When it comes to the topic of project success, one may consider success criteria and success factors. Whereas the success criteria are the measures against which a project is evaluated, the success factors are the elements that will contribute to success (Cooke-Davies, 2002). As this study adopts the view that effective leadership of the project manager should positively contribute to ultimately achieving project success, it is relevant to have an understanding of project success criteria, as this is where project success is measured against.

Since the 1950's views on project success criteria were largely based on the triple constraint concept, known as the iron triangle, with projects being successful if they achieve project objectives within agreed time, cost and quality (Atkinson, 1999). Atkinson (1999) noted that project management so far had focussed too much on only this set of three project success criteria, and suggested that these can be considered best guesses estimated at the time when least is known about the project and that, in addition, they may be too limited. Earlier, Wateridge (1998) stated that there are examples of projects that should be classified as a failure when considering the iron triangle criteria, but which are perceived as a success. As part of his study, criteria in general and criteria which were considered as most important were collected from respondents. Major differences and even conflicting views on project success criteria were observed among the respondents. Wateridge suggested, because criteria differ among groups and per project, that project success criteria for a project should be agreed among stakeholders during project start-up.

During the late 1980's and 1990's, other authors also suggested other criteria should be considered, such as Turner, Morris and Hough, de Wit, McCoy, and Pinto and Slevin (Atkinson, 1999). Referring to de Wit (1988), Cooke-Davies (2002) differentiates between project management success, measured against the iron triangle criteria, and project success, measured against the overall objectives of the project. This is helpful, as it helps to differentiate between the more classical view towards project success and the more recent and holistic view of project success, which considers a broader set of criteria. Referring to the latter, authors have found and suggested different project success criteria and categorizations. This has resulted in the suggestion that instead of determining a universal set of criteria, it is better to agree the project success criteria amongst stakeholders (Wateridge, 1998; Jugdev & Müller, 2005; Turner, 2007).

Turner (2007) states that project success is judged differently among people, and that the same project may be regarded successful while it is deemed a failure by others. This may be due to different interests, differences in the way people are impacted by the project and their perception. Whatever set of project success criteria is adopted for a study, it is not likely to be universally applicable and it may not be in line with what stakeholders (agreed to) consider when judging project success of a specific project. This is not the case when using a broad working definition, such as meeting the overall objectives of the project as suggested by de Wit (1988) and Cooke-Davies (2002), but it has the disadvantage of being subject to what the person in question considers to be the overall objectives, perception, and variance over time. Although project success is not measured as part of this study, due to its inherent relation with effective leadership of the project manager an explicit working definition is adopted in this study, which is as follows:

To meet the overall project objectives.

The subjective nature of this definition is acknowledged: project success in this sense may vary per respondent and over time. However, it does provide for a comprehensive definition (i.e., it can be applied to any project) and a completely objective measure for project success can be considered somewhat an illusion due to the multitude of stakeholders and variance over time (de Wit, 1988). When using definitions that are completely objective (e.g., iron triangle), the issue arises that there may be a great mismatch between the perception of stakeholders and the objective measure of project success, of which the Sydney Opera House is an example provided by Müller et al. (2012). For this study a working definition that is subjective in nature, but more closely resembles the perception of stakeholders, is chosen over an objective measure.

2.3 Project complexity and risk

This section turns to the topic of project complexity and risk. Project complexity is discussed first, followed by project risk. Lastly, literature on High Reliability Organizations is reviewed due to its relevance in relation to both complexity and risk.

Project complexity

Baccarini (1996), noted that the use project complexity as a factor was widespread, but that the concept itself had received little attention in literature. He performed a review of the literature on project complexity and proposed to define it as 'consisting of many varied interrelated parts', which can be expressed in terms of differentiation and interdependency. Differentiation refers to the number of project elements, components, etc. and interdependency refers to their degree of interrelatedness. This may refer to a broad set of topics, such as processes, technology and decision-making, which he groups into organizational and technological complexity.

The topic of project complexity started to receive more attention after the publication of Baccarini's article. Table 1 shows an overview of the definitions of project complexity from literature, as well as the main elements of which it consists as proposed by the authors.

Table 1 Definitions and elements of project complexity from literature

Authors	Project complexity is defined as:	Project complexity elements
(Baccarini, 1996)	consisting of many varied interrelated parts	differentiation and interdependency
(Williams, 1999)	n/a (discussed but no specific definition stated)	structural complexity and uncertainty
(Maylor, Vidgen, & Carver, 2008)	n/a (discussed but no specific definition stated)	the dimensions mission, organization, delivery, stakeholders and team (and sub-elements)
(Vidal, Marle, & Bocquet, 2011)	the property of a project which makes it difficult to understand, foresee and keep under control its overall behaviour, even when given reasonably complete information about the project system	size, variety, interdependencies and context-dependence
(Bosch-Rekveldt, Jongkind, Mooi, Bakker, & Verbraeck, 2011)	n/a (discussed but no specific definition stated)	the dimensions technological, organizational and environmental (and sub-elements)
(He, Luo, Hu, & Chan, 2015)	complicated characteristics of a project as a result of composing many interconnected parts within a project	technological, organizational, goal, environmental, cultural and information complexity
(Zhu & Mostafavi, 2017)	an umbrella term for difficulty and interconnectedness	detail and dynamic complexity

Taking into consideration the definition proposed by Baccarini (1996) as well as other literature, Williams (1999) suggests that project complexity consists of two dimensions, which each have two sub-dimensions. Firstly, structural complexity is one of the dimensions, consisting of the number of elements and the interdependence of elements, which is in line with Baccarini's definition. This can refer to multiple elements of a project, including the product delivered by the project. The second dimension is uncertainty, consisting of uncertainty in goals and in methods. Uncertainty in method refers to ill-defined methods or inability to define methods, for example due to the novelty of technology. Uncertainty in goals refers to ill-defined goals or inability to define goals, which is sometimes the case in software development projects where user requirements are difficult to determine. Where Baccarini (1996) explicitly chose to consider uncertainty as a separate concept, Williams (1999) chose to include it as part of project complexity, as it contributes to the overall difficultness and messiness of the project.

In a later study, Maylor, Vidgen and Carver (2008) investigated what elements added to the managerial complexity as perceived of project managers. The results are elements of complexity, 160 in total, that are classified into the dimensions mission, organization, delivery, stakeholders and team (MODeST). These also include elements related to uncertainty. Furthermore, the authors differentiate between the structural and dynamic complexity. The term structural is somewhat confusing, as it is used in another way than by Williams (1999). Structural, in their sense, refers to the current state of the complexity (e.g., user requirements are vague), whereas dynamic complexity refers to the amount of change of the complexity (e.g., user requirements are subject to change). Bosch-Rekveldt, Jongkind, Mooi, Bakker and Verbraeck (2011) performed a similar study in which a framework and elements that contribute to project complexity are proposed, based on interviews related to six project and specifically in relation to large engineering projects. In the framework, elements are categorized in technical, organizational and environmental (TOE) elements, with sub-categorization in goals, scope, tasks, experience, risk, size, resources, project team, trust, stakeholders, location and market conditions. In a later study, He, Luo, Hu and Chan (2015) propose a project complexity model based on existing literature, including the TOE framework, and refined by use of a Delphi survey. A number of 28 sub-factors were extracted from thirteen articles and categorized in technological, organizational, goal, environmental, cultural and information complexity.

Although these studies provide some valuable insight as to what elements are perceived as contributing to project complexity, they also show that findings as to what elements contribute to project complexity and their categorization differ among studies. Furthermore, it can be said that in project complexity literature, definitions are seldom wholly adopted from previous literature. Rather, authors choose to adapt or expand previous definitions of project complexity. Multiple authors acknowledge the lack of consensus with regard to the definition of project complexity (Vidal et al., 2011; Qureshi & Kang, 2015; Zhu & Mostafavi, 2017). Without a widespread definition, framework or means to measure being available, the use of project complexity as a factor poses some challenges. Qureshi & Kang (2015) state, "Deciding on whether or not a project is complex has itself become a complex matter". In this context, when referring to project complexity, one should be clear about what exactly is meant in order to prevent ambiguity. However, looking at the definitions and frameworks in literature, some recurring aspects of project complexity can be recognized: differentiation (i.e., number of elements), the degree of interdependency between elements, and uncertainty are themes that appear in many studies, albeit with different wordings. Vidal, Marle and Bocquet (2011) proposed a definition based on several works, which is adopted as the working definition of project complexity in this study:

> The property of a project which makes it difficult to understand, foresee and keep under control its overall behaviour, even when given reasonably complete information about the project system.

This working definition has the advantage of being holistic, that is to say any aspect that contributes to project complexity is covered, and comprehensive, that is to say that it can be applied to any (type of) project.

In a recent study, Zhu and Mostafavi (2017) propose a framework to explain how projects cope with project complexity in order to maintain project performance. They state that the properties of a project system that help cope with project complexity should be congruent with the

complexity of the project. These properties are the adaptive capacity, absorptive capacity and restorative capacity of the project system. Absorptive capacity refers to the preparedness for complexity, and the ability to minimize the consequences with little effort. Adaptive capacity is the ability to react effectively to complex situations, preventing negative effects on project performance. Lastly, restorative capacity refers to the ability of the project system to recover from negative effects, in cases when the absorptive and adaptive capacity were not sufficient to cope with a complex situation. They noted that there is only a limited understanding of these relations and hence adopted a qualitative research approach to verify the framework. From nineteen interviews with project managers from the construction industry, they found factors that contribute to each property. For example, planning for complexity was found to be a major factor contributing to absorptive capacity. Information sharing, and collaboration were mentioned most frequently as factors contributing to adaptive capacity. Restorative capacity was found to be impacted by timely reaction and stakeholder relationship. This study provides for a better understanding of what factors contribute to properties of the project system that help cope with project complexity. Although not all of these factors may be directly affected by leadership of the project manager, the framework and some factors that were found can help to explain how it can affect project success in highly complex projects (e.g., through increasing collaboration).

Project risk

Project risk and risk management are key topics in project management. Risk (management) is one of the ten knowledge areas of the PMI Project Management Body of Knowledge (Project Management Institute, 2013), one of the ten subject groups of ISO 21500:2012, and one of the seven themes of PRINCE2 (Hedeman & Seegers, 2009). Dedicated standards and guides for risk management exist, such as M_o_R and ISO 31000:2009 (The Stationery Office, 2010). Although they do not adopt the same definition for risk and risk management, the differences may be deemed slight. M_o_R defines risk as an uncertain event or set of events that, should it occur, will have an effect on the achievement of objectives. If one considers project success as meeting the overall project objectives, one can already see the relevance of risk in relation to project success. Related to project risk, one may consider individual project risks and the overall project risk. Overall project risk represents the effect of uncertainty on the project as a whole (Project Management Institute, 2013).

It is noteworthy that risk management practices seem to be aimed at known unknowns (i.e., uncertainties). For example, the first step in the management of risk process as described by M_o_R is to identify the risks, without attention for the unidentifiable risks (The Stationery Office, 2010). Conventional risk management practices therefore seem to provide for appropriate techniques for coping with known unknowns. However, in the context of complex project that are difficult to understand and foresee, even when given reasonably complete information, the fraction of known unknowns in relation to all unknowns may be lower. Ramasesh and Browning (2014) suggest a conceptual framework for unknown unknowns, which they describe as unrecognized uncertainties of which the project manager is unaware. They distinguish between knowable unknown unknowns (i.e., unknown unknowns that could have been foreseen by the project manager but for some reason are not) and unknowable unknown unknowns (i.e., unknown unknowns that cannot be anticipated by the project manager in any case despite efforts). The fact that unknown unknowns are inherently not known, does not mean that one cannot have a sense for the exposure to unknown unknowns. For example, one can expect that a project that includes novel technology and unprecedented requirements is likely to have more unknown unknowns than a project that uses conventional technology and has common requirements, without knowing what the unknown unknowns in question may be. In their conceptual model, Ramasesh and Browning (2014) suggest several ways to tackle unknown unknowns, some of which are behavioural approaches: ensure effective and frequent communication, balancing central control and local autonomy, incentivizing the discovery of unknown unknowns and cultivating a culture of alertness. If one adopts the notion that conventional risk management practices are appropriate for known unknowns, and complex project have a relatively high level of unknown unknowns, it does seem plausible that behavioural approaches for coping with risks may become more relevant in complex projects. It is noteworthy that despite the attention that project complexity has received, the impact of

project complexity on risk management has received relatively little attention. Indeed, based on 13 interviews with experts in project risk management in the construction industry, Qazi, Quigley and Dickson (2016) conclude that the risk management process in this industry does not consider the complex interaction between project complexity and risks. They suggest that more research should be conducted to investigate best practices in managing complex interdependencies between project complexity and resulting risks.

In a study related to the degree of project risk and the factors that impact project success, Couillard (1995) found that when project risk is high, project success is impacted by effective communication, project goal understanding, the degree of authority of the project manager, support received from the project team and problems handling by the project team. Belout and Gauvreau (2004) also argue that the higher project risk, the more important trouble-shooting abilities become. Couillard (1995) states that the project manager should establish that the project team is responsive when problems occur, as very few projects are completed without the arise of problems. These studies therefore also support the notion that other factors than conventional risk management practices play a role in coping with high levels of project risk.

High Reliability Organizations

Related to both complexity and risk, there is a subset of organizations that make use of complex systems to the extent that uncertainty is inevitable and complete knowledge is not obtainable (Rochlin, 1989), and is subject to risks that are perceived by the organization and the public to have such grave consequences as to warrant the avoidance of failure (LaPorte & Consolini, 1991). This subset of organizations is referred to as High Reliability Organizations (HROs). Although not aimed at projects, HRO literature is briefly discussed because of its close relation to complexity and risk.

The origin of HRO research can be traced back to the eighties, when researchers LaPorte, Roberts and Rochlin as part of the High Reliability Organization Project at the University of California Berkley spent several years examining three organizations that seemed to operate nearly error-free, despite being complex, technology-intensive organisations. These were the Federal Aviation Administration's air-traffic control, two nuclear aircraft carriers or the US navy and Pacific Gas and Electric Company's electric power system (LaPorte & Consolini, 1991). Such organizations, which operate complex systems and are subject to risks with wholly unacceptable consequences, require nearly error-free performance. At the time, LaPorte argued that social and organizational studies on highly reliable systems were lacking, and that the impact on behaviour, personnel and communities was not yet understood (1982). This issue was later expressed more explicitly by Roberts in 1989, stating that organizational literature fails to deal with hazardous organizations that have high levels of performance reliability (Le Coze, 2016). HRO research has attempted to contribute to a better understanding of such organizations. For example, Rochlin (1989) describes how informal, self-designed networks swiftly come into existence in order to deal with emerging crisis, only to dissolve once the problem is solved without leaving trace a on the formal organization.

Other researchers also began to study HROs during the 1980's and 1990's, among which Weick and Sutcliffe. They developed a framework that describes five processes that are typical for HRO's and that contribute to reliability (Weick, Sutcliffe, & Obstfeld, 2008). These are:

- Preoccupation with Failure
- Reluctance to Simplify
- Sensitivity to Operations
- Commitment to Resilience
- Deference to Expertise

The latter was initially formulated as 'Underspecification of Structures', but was rephrased to 'Deference to Expertise' by Weick and Sutcliffe (2015). They have labelled organizing in line these processes as mindful organizing.

Referring to HROs where uncertainty is inevitable and complete knowledge is not obtainable due to tightly coupled and complex systems, Rochlin (1989) states:

> Thus, there is considerable, and justified, resistance to introducing new forms of formal organization, formal analysis or advanced technical systems as solutions to the problem of increased coupling and complexity, particularly when those systems or techniques are to be introduced by outsiders unfamiliar with the (often undocumented) particularities of the operating system.

This suggests that the solution for dealing with high levels of uncertainty and complexity is not to be sought in an increase of managerial instruments and control. Rather, a focus on effective leadership in this context may be more important.

Whilst not specifically aimed at projects, a project may be regarded as a temporary organization and therefore HRO research may include insights that can help to better understand how projects, and effective leadership of the project manager, can deal with high levels of complexity and risk. For example, the swift formation of informal networks to cope with emerging crisis as described by Rochlin (1989) may be an element that can be influenced by the project manager's leadership. Furthermore, the five processes of mindful organizing may as well contain elements that can be learnt from.

2.4 Conceptual framework

When it comes to the specific topic of effective leadership of the project manager in highly complex and risky projects, previous literature provides valuable notions, but also has its limitations. This study aims to use a conceptual framework that adopts the valuable existing views from previous literature and improve it in an attempt to address limitations of previous studies.

With regard to views that are adopted from literature in this study, the believe that effective leadership of the project manager is contingent on context is embraced (e.g., Müller et al., 2012; Müller & Turner, 2007). Thus, within the context of highly complex and risky projects, what constitutes effective leadership of the project manager is dependent and to some extent specific to that context. Furthermore, the description for project complexity of Vidal, Marle and Bocquet (2011) and the description for high risks of LaPorte and Consolini (1991) are adopted to come to a working definition of highly complex and risky projects. The adopted working definition is:

> A project that is difficult to understand, foresee and keep under control its overall behaviour, even when given reasonably complete information about the project system, and that is subject to risks that are perceived by both the organization and the public to have such grave consequences as to warrant the avoidance of failure.

On the other hand, some notions of previous literature are not adopted. The extensive use of the LDQ in project management leadership literature suggests an implicit belief that this instrument is well suited for research of this subject. Whilst this may be true for some contexts and it may be a convenient way to collect data for quantitative research and investigate correlations, the view that the LDQ dimensions should be taken as a basis for this study is contested for several reasons. Firstly, in relation to the context of highly complex and risky projects the LDQ dimensions may not be comprehensive, meaning that they may not cover all relevant concepts. Müller et al. (2012) suggested that project managers with higher levels of EQ and MQ may have a better fit with projects that are high in complexity of interaction, because the impact of EQ and MQ reduces with high levels of complexity of faith and complexity of fact. Assuming that the LDQ is comprehensive, this may be an appropriate conclusion. However, it may very well be that simply other concepts come into play and one should look beyond the LDQ dimensions. That is to say, EQ and MQ may not necessarily become less important, but may no longer be sufficient as other concepts start to play a role when these types of complexity are high. Indeed, although related to permanent organizations rather than projects, HRO literature suggests that in highly complex and risky environments, concepts come into play that are specific for this context, and which are less prominent in other contexts. Secondly, the LDQ seems to have reached its limits in the context of highly complex projects. The profile of successful project managers in highly complex projects scored high on all LDQ dimensions (Müller & Turner, 2010b), which only has limited value and suggests that the LDQ is no longer suitable to differentiate in leadership dimensions of the project manager in this specific context. Lastly, this study sets out to develop a better understanding. Due to this exploratory nature,

starting with a predefined set of concepts may limit new findings, thereby compromising the aim of this study. Indeed, Bowen (2006) argues that using sensitizing concepts (i.e., concepts providing for a general sense of reference) may be more appropriate than using definitive concepts (i.e., concepts with a clear definition or fixed bench marks) for qualitative research due to its inductive nature. The LDQ will therefore not be taken as a basis for this study.

Also, fully adopting contingency theory as a theoretical perspective may not be appropriate for this study. When one studies the impact of a variable on a certain relationship, contingency theory provides for a useful lens (Müller et al., 2012). However, this study focusses on how effective leadership of the project manager can be explained in a specific context, rather than its relation to another variable (e.g., project success) and the impact of the context on this relationship. The overall conceptual framework that is adopted instead in this study is shown in Figure 2. In terms of the conceptual framework, the aim of this study is to gain a better understanding of what is happening within the box of effective leadership of the project manager (within the context of highly complex and risky projects). Highly complex and risky projects is therefore not considered as a moderating variable of a relationship as it would be in a contingency perspective, but as a given context that affects what constitutes effective leadership of the project manager.

Furthermore, relations between concepts that explain effective leadership of the project manager should not be excluded beforehand. Indeed, Antonakis et al. (2003) found significant relationships between the MLQ factors. Taking into account interrelations is in line with a configurational perspective, which acknowledges synergistic effects and interactions that cannot be represented with contingency theories (Delery & Doty, 1996). This adds to the complexity of the model, as concepts that explain effective leadership of the project manager are not investigated as self-contained and separate from the others but are expected to interact with each other.

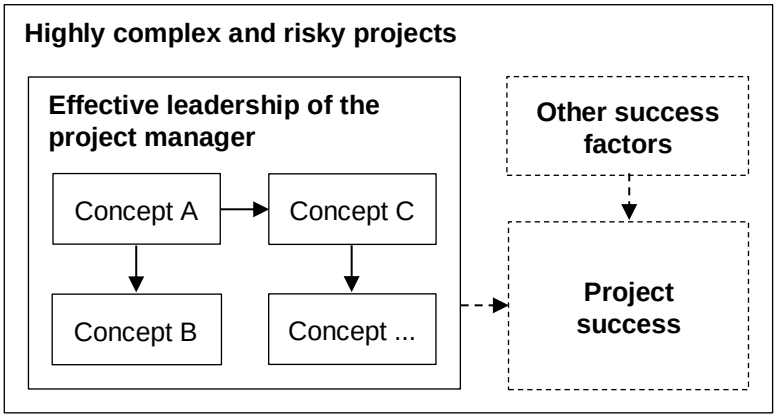

Figure 2 Overall conceptual framework

This study does not fully adopt a conceptual framework and definitive concepts from literature a priori. Instead, as is appropriate for qualitative research concerned with theory generation, sensitizing concepts and some basic theoretical arguments form the basis of the initial overall conceptual model (Bowen, 2006). For this study, the basic theoretical argument adopted from literature is that what constitutes effective leadership of the project manager is dependent on the setting, which in this case is highly complex and risky projects. To summarize and put it simply, this study sets out to further develop what constitutes effective leadership of the project manager in highly and complex and risky projects as shown in Figure 2. One of the main results of this study will therefore be a conceptual framework based on the one depicted here, in which effective leadership of the project manager is further developed, thereby contributing to an increased understanding.

3 Research design & method

As argued in section 2.4, current knowledge on effective leadership of the project manager in the specific context of highly complex and risky projects has its limitations and synthesising a theory based on previous literature may result in missing relevant concepts. Furthermore, project management leadership literature has focussed on investigating correlations, but an in-depth understanding and explanation of how effective leadership works is lacking. A qualitative research strategy is generally adopted if the goal is to generate theory, rather than to test it (Bryman & Bell, 2015). Given the above, a qualitative research strategy is adopted in this study, seeking concepts of effective leadership of the project manager and their relations in an unbiased, open manner. This is an inductive approach, in which the aim is not to test existing findings, hypotheses or theories, but to come to concepts and theory derived from data without starting with preconceived notions (Blaikie, 2009; Bowen, 2006). In doing so, it is important to note that this is not a comparative study: this study sets out to gain a better understanding of effective leadership of the project manager in highly complex and risky projects, and not to find out what differentiates effective leadership in this context compared to other contexts. Therefore, what is found in this study is believed to be true within the context of highly complex and risky projects, but part of the findings may also apply to other settings.

The research steps of this study and references to the related sections are shown in Figure 3. As indicated by Bryman and Bell (2015), qualitative research often involves development of the research questions as research is performed. An initial research question was formulated, which may be found in the appendix in section I.2. Subsequently, sampling was performed as described in section 3.1. Data collection was performed in two main steps. Firstly, a focus group session and interviews were conducted, with analysis taking place in parallel. Secondly, data was collected through respondent validation after the initial findings were formulated. The process of data collection and analysis are described in sections 3.2 and 3.3 respectively. In order to present the findings in English, data was translated by the researcher as explained in section 3.4. Ethical considerations are outlined in section 3.5. Lastly, the limitations of this study are expanded upon in section 3.6.

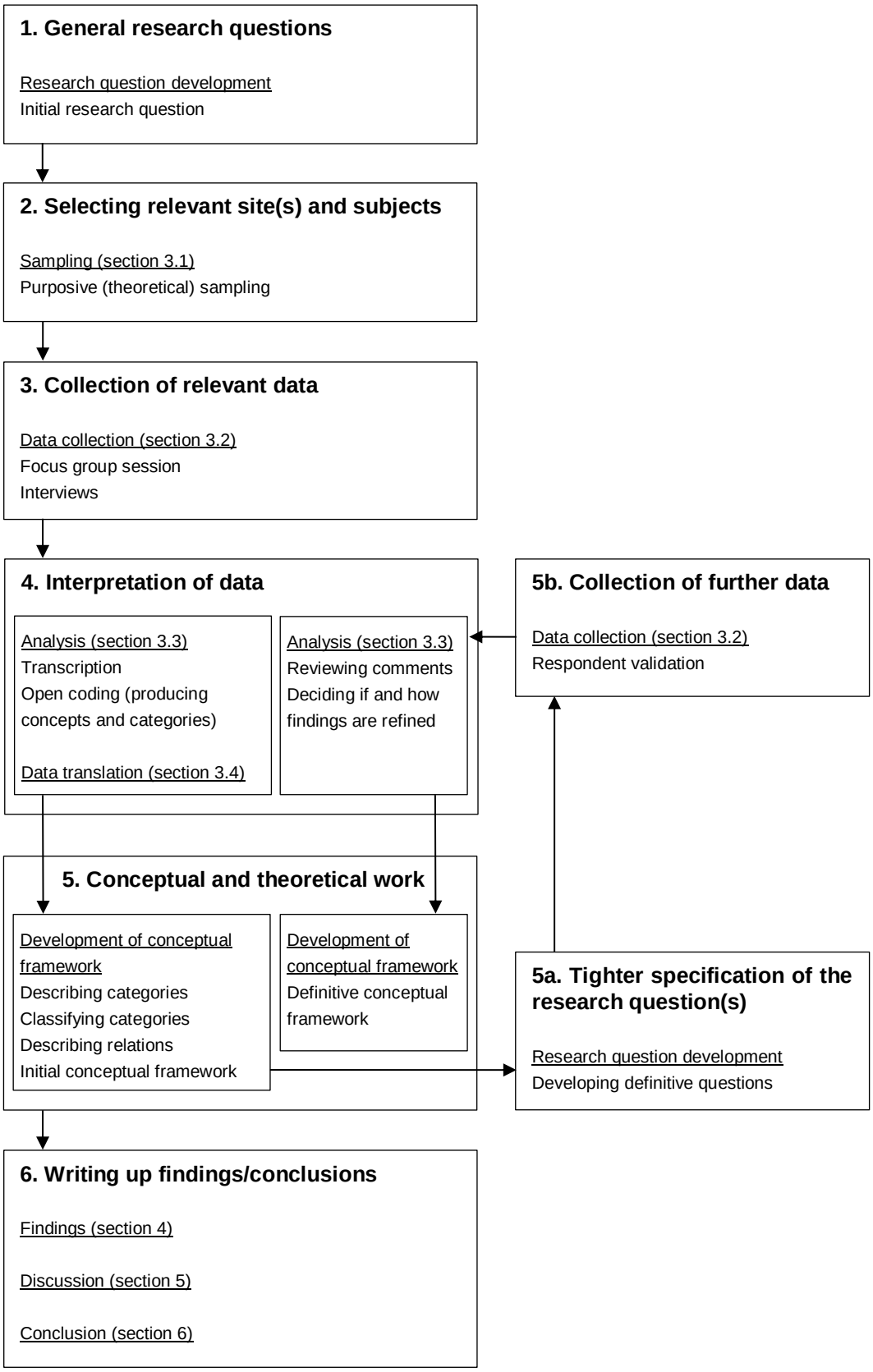

Figure 3 Research steps

3.1 Sampling

Purposive sampling, a non-probability form of sampling entailing the selection of units with direct reference to the research question, was applied as is common for qualitative research (Bryman & Bell, 2015). Theoretical sampling, a form of purposive sampling which is done to discover categories, their properties and their interrelations, was applied throughout data collection and analysis. Initially, experienced project managers and their line managers (i.e., managers responsible for assigning project managers to projects) were selected. This initial sample was based on the notion that both project managers and their line managers have to make considerations about effectiveness of leadership aspects in different types of projects. Project managers have been used as a sample in qualitative research about project complexity (e.g., Zhu & Mostafavi, 2017), and line managers of project managers have been used in a qualitative study about project manager leadership (Müller & Turner, 2007). During data collection and analysis, project managers were deemed more likely by the researcher to provide insights with regard to leadership considerations of project managers, because many of such considerations are made implicitly in the mind of the project manager. Others, who may be merely confronted with the output of such considerations by the project manager (e.g., line managers, team members, project sponsors), may therefore not be able to describe and explain what concepts and considerations are important. This resulted in sampling experienced project managers for the later interviews.

Two decisions with regard to the sample were made a priori, meaning that these were made at the beginning of the study according to a preconceived, but reasonable initial set of criteria (Coyne, 1997). Firstly, as a criterion for being experienced, all participants had at least ten years of experience in their function. This criterion, which was also applied by Zhu and Mostafavi (2017), was adopted as this group is likely to have intimate, or at least greater, knowledge and experience regarding the research topic. Secondly, participants from various industries were selected in order to maximize variation in the sample for improving the generalizability of the study, which is an approach also used by Müller and Turner (2007). Table 2 shows the number of participants per industry. Data were gathered from nine project managers and two line managers of project managers. The researcher, upon his request, was referred to two participants by earlier participants. All participants were Dutch and professionally active in the Netherlands.

With regard to specific experience of the participants with highly complex and risky projects, the researcher has aimed to select participants who have been involved in projects that are difficult to understand, foresee and keep under control, and that are subject to risks that have such grave consequences as to warrant the avoidance of failure. An example of such projects in which participants were involved are those subject to the risk of food contamination. The serious consequences of food contamination include life-threatening infections, worldwide recalls and severe reputational damage, as was recently the case with a salmonella outbreak in France (Willsher, 2018).

Table 2 Number of participants per industry

Latest industry (at time of participation)	Number of participants
Food	4
Maritime	1
Airport	1
Municipal	1
Civil	1
IT	1
More than one concurrently	2

3.2 Data collection

Data were collected by the researcher through a focus group session, interviews and respondent validation. Potential participants were contacted by phone and email, and all agreed to participate. The focus group session was conducted in February 2018 and the interviews were conducted between March 2018 and May 2018. Respondent validation was carried out

with the focus group participants in June 2018 in order to ensure correspondence between the findings of the researcher and the perspectives of the participants, thereby improving the validity. Table 3 shows the participant numbers of the participants of each data collection occasion. Note that data of participant 1, the chairman of the focus group session, was omitted from this study as the role of the chairman was facilitative, rather than participative.

Table 3 Participants of each data collection occasion

Data collection occasion	Participant number
Focus group session 1	2, 3, 4, 5
Interview 1	6
Interview 2	7
Interview 3	8
Interview 4	9
Interview 5	10
Interview 6	11
Interview 7	12
Respondent validation	2, 3, 4, 5

Focus group session

Focus group sessions allow for people with knowledge and experience to enter into a discussion, where they can challenge each other, bring forward arguments and collectively make sense of topics. Participants can often probe each other less reluctantly than the researcher is able to do in one-to-one interviews, which helps the researcher to develop an understanding why people feel the way they do (Bryman & Bell, 2015).

An initial focus group session of three hours was carried out with four participants at the researcher's place of work in order to gather a considerable amount of rich data at the beginning of the study. Participants were informed by use of an information letter prior to participation, which can be found in Appendix I, of which the content was also verbally explained by the researcher. The focus group session was held in Dutch and was audio-recorded.

During the focus group session, the researcher was assisted by a colleague who chaired the session, which allowed the researcher to observe and intervene when appropriate. Participants were requested to individually note what they considered to be key elements of leadership of the project manager. These notes were then briefly explained by the participants and grouped on a flipchart by the chair. The emphasis of the focus session lied with the subsequent plenary discussion, which revolved around the grouped topics. With regard to the level of researcher involvement, care was taken to intervene where it is required to keep the session productive (e.g., stop discussion that are off at a total tangent), but not to exercise a level of control that would limit participants in expressing their views. As suggested by Bryman and Bell (2015), comments that arose during the focus group session were tracked by use of a flipchart. This allowed participants to reflect on what had been said and acted as a stimulus for further discussion. The focus group flipchart can be found attached in Figure 5 in Appendix II.

Interviews

Subsequently, seven interviews were carried out. Participants were informed by use of an information letter prior to participation, similar to the letter used for the focus group session. The content was also verbally explained by the researcher prior to the start of the interviews. The interviews were conducted by the researcher at a location of the participant's choice, usually at their place of work, or alternatively at the office of the researcher. The interviews were held in Dutch and were audio-recorded.

In line with the inductive approach, the emphasis in the interviews lied with the interviewee's point of view rather than with concerns of the researcher. Interviews were unstructured, with the researcher initially stimulating participants to express ideas and to bring about lines of thought, rather than shifting the discussion towards specific topics. The interviews were intentionally loose controlled in order to focus on what participants consider to be important and

to be able to broadly gather insights. As a result, some interviews revolved largely around one or more cases, whereas other interviews were more conceptual in nature, with examples and experiences coming from a broader set of projects. Care was taken by the researcher not to feed earlier insights to participants, as not to influence their lines of thought. In some cases, topics were introduced by the researcher at the later stages of the interview once no new ideas were brought up (e.g., questions about the project team if the earlier focus mainly lied with other project stakeholders).

Respondent validation

Respondent validation is a form of validation used in qualitative research and involves checking research findings with the participants of the study (Barbour, 2001). The aim of respondent validation is to seek corroboration and it provides a way to ensure correspondence between the findings of the researcher and the perspectives of the participants (Bryman & Bell, 2015). Areas where the researcher's findings are not congruent with the views of the participants, and the reasons for it, may be used to refine findings. As such, respondent validation can be considered a means to improve internal validity (Mays & Pope, 2000), which is sometimes referred to as credibility in the case of qualitative research (Bryman & Bell, 2015). However, it does have some limitations. As Mays and Pope (2000) and Barbour (2001) explain, the researcher has the aim to provide an overview based on and designed for a wide audience, whereas participants have their individual concerns, inevitably leading to discrepancies. It may therefore be more appropriate to think of respondent validation as error reduction, of which the produced data will also, in turn, require interpretation (Mays & Pope, 2000).

There are also other means to improve validity, such as multiple coding and triangulation. These would respectively require a second researcher to be involved in the coding, or require more than one method of data collection (e.g., observational fieldwork and interviews) (Barbour, 2001). Both options however require an investment in resources and time that was not available to the researcher.

In this study, respondent validation was opted for in order to increase validity. After the data of the focus group session and interviews were collected and analysed, the findings were presented to the participants that took part in the focus group session. These participants were selected, because most of the found concepts were brought forward in the focus group session in some way, whereas during some of the interviews only a few of the concepts were discussed due to the inductive nature of the interviews. The findings were presented in the form of a letter with an initial version of the findings in the format of Figure 4 and Table 4. They were then discussed individually face-to-face or by phone between the participant and the researcher, in order to allow for questions and answers about the findings and the feedback. The feedback was written down by either the participant or the researcher, in which case the participant was allowed to redact. The feedback is presented in a separate section under the findings, so it is traceable where the initial findings of the researcher did not correspond with the views of the participants. Based on the feedback, the definitive conceptual framework and descriptions were developed.

3.3 Analysis

The audio recordings of the focus group session and interviews were transcribed in Dutch using the online tool Transcribe (transcribe.wreally.com) or MAXQDA2018. Names of persons, companies and specific locations were omitted from the transcripts and replaced by anonymous placeholders, due to potential sensitive nature of the data. Coding of the transcripts was performed in an inductive manner, driven by the data rather than previous theory. Both transcribing and coding were performed whilst interviews were being conducted. From the coded data, categories emerged by grouping codes using the code system functionality of MAXQDA2018. Notes and emerging relations between codes or categories were recorded during data analysis by use of the memo functionality of MAXQDA2018. The concepts of this study were based on the emerging categories. Descriptions of these concepts were subsequently synthesized from the associated data. After the concepts and their descriptions were sufficiently developed, the relations were described based on the data and the memos, whilst keeping track of which data supported the relation in question.

The written data of the respondent validation were related to previous findings and were quite condensed. As such, nearly all of respondent validation data are included in the findings in a separate section. Analysis of the data mainly consisted of reviewing the comments and deciding if and how the findings had to be refined. Those decisions and the associated considerations are also included in the findings.

3.4 Data translation

Data collection and data analysis in MAXQDA2018 were conducted in the source language (Dutch). However, the language of this report is English, as is encouraged by the Utrecht University of Applied Sciences, because it is the lingua franca of an open and transparent scientific world (Utrecht University of Applied Sciences, 2018). For this reason, verbatim quotations from participants were translated to English by the researcher. However, translation can be seen as a sensemaking process that involves the translator's knowledge, social background and personal experience (Bryman & Bell, 2015). Mechanisms can be applied to ensure conceptual equivalence between the source language and the translation, such as back-translation by others. As resources for such mechanisms were not available to the researcher, instead all verbatim quotations were numbered and can be found attached in their source language in Appendix III for the sake of transparency.

As means to refer to and edit verbatim quotations vary (Bryman & Bell, 2015; Corden & Sainsbury, 2006), it is important for the researcher to specify the used conventions. The verbatim quotations are numbered as vq.AA.BB, where vq is an abbreviation for verbatim quotation, AA corresponds with the number of the participant and BB is a sequential number unique for the verbatim quotation. Verbatim quotations are presented between single quotation marks in *italic text*, followed by, between parentheses, the participant, the verbatim quotation number and the word 'partial' in cases where the verbatim quotation is partially repeated. Quotations by the participants within the verbatim quotations are indicated by double quotation marks. Edits by the researcher for the sake of readability (e.g., to add, clarify or leave out words) are indicated by square brackets.

3.5 Ethics

The following four main areas of ethical principles, as suggested by Diener and Crandall (Bryman & Bell, 2015), were considered by the researcher:

- Harm to participants
- Lack of informed consent
- Invasion of privacy
- Deception

No harm was foreseen in collecting the data. With regard to the data itself, this may include statements or information which may harm the interviewees or their companies, should these become known by others. The raw data (i.e., recordings and transcriptions) was and is therefore only accessible by the researcher, the researcher's supervisor and the Thesis Assessment Committee. The same sensitivity applies to this report, which was therefore anonymized and specific information that may be traced back to the participants, their companies or others was left out.

To ensure informed consent, the participants were informed by email and verbally prior to participation about the following:

- Aim of the study
- Recording of audio
- No compensation for participation
- Option to decline participation or to answer questions
- No possibility for redaction
- Restricted access to the raw data
- Anonymization of the thesis report
- Public access of the thesis report

- The student's employer

Informed consent was confirmed verbally by the participants prior to the collection of data.

With regard to the invasion of privacy, no specific issues were foreseen as the discussions will mainly revolve around professional topics. However, participants were always allowed to refuse to answer questions. Regarding deception, no deception of participants was intended or foreseen.

3.6 Limitations

The finite number of man-hours that could be spent on this study by the researcher provided a constraint with regard to the amount of data that could be collected and analysed. No consensus on a minimum sample size for qualitative research exists, nor does the Hogeschool Utrecht have a guideline for master theses in this regard. Instead, achieving theoretical saturation is generally used to justify a sample size. However, criteria for deciding whether theoretical saturation has been achieved are more or less absent (Bryman & Bell, 2015). Rather than claiming complete theoretical saturation, the level of saturation will be explained as suggested by Bowen (2008): During the later interviews, no new categories emerged from the data. The content of the categories and associated concepts of this study were only slightly in motion up until after data collection, as concepts were being refined and more tightly and definitively defined. Also, a limited number of new codes were used during coding of the later interviews (e.g., bridging cultural differences) without resulting in new categories. Inasmuch one can predict this, it is the researcher's expectation that additional data collection would more likely have led to further enrichment of the categories, rather than the emergence of new categories. With regard to the relations between categories and their contribution to effective leadership that were identified in the data: up until respondent validation justification for additional relations was being found. Summarizing, the categories themselves may be considered saturated, with some room for further enrichment, and saturation for the relations between the categories and their contribution was not achieved.

With regard to data collection, one of the limitations is that the data is mainly collected from project managers and the data may therefore be considered to be largely subject to self-reporting. Furthermore, the collected data is subjective in nature, as it reflects the perception and opinion of the participants.

Also, as a qualitative research approach was opted for, limitations associated with such an approach apply to this study. Although the approach may be justifiable given the aim to develop a better understanding of the research topic, Bryman and Bell (2015) note issues associated with qualitative research with subjectivity, replication, generalization and transparency. The researcher has aimed to partially address these issues by a sample from a variety of industries and by attempting to accurately and openly depict the method and respondent validation findings. With regard to validity, the researcher has aimed to increase this by using a sample from a variety of industries and by applying respondent validation. Regarding reliability and transparency, care was taken to openly depict the method and findings: by including verbatim quotations from transcripts on which the findings are based, a transparent chain of evidence is provided. The respondent validation findings are presented separately, so it is transparent where the findings were congruent or had to be refined. Nevertheless, due to the qualitative nature of this study, issues such as subjectivity, decreased reliability (i.e., difficulty to replicate the findings) and a lack of transparency remain and need to be acknowledged.

Specifically with regard to reliability, despite providing definitions and examples, the researcher found it hard to assess whether the participants had the same mental representation of the variables in this study, especially in the case of highly complex and risky projects. These variables are subject to interpretation and the frame of reference of participants, and verifying whether these matched the provided definitions proved difficult.

With regard to the variety of the sample, it needs to be acknowledged that in some respects the variety was limited. The complete sample was from the Netherlands, which limits the generalizability of this study. Furthermore, although the selection of project managers for the

interviews was a deliberate choice, only two line managers of project managers participated in this study, resulting in a small sample size and underrepresentation of this group.

4 Findings

This section provides a mainly factual presentation of the findings, with the discussion of the findings in section 5. Firstly, the findings of the focus group session and the interviews are described in section 4.1. Subsequently, the respondent validation findings are presented separately for the sake of transparency in section 4.2 and do include some references to literature for readability purposes. Lastly, the conceptual framework developed as part of this study is depicted in section 4.3, as well as descriptions against each of the concepts and relations found in this study.

4.1 Focus group and interview findings

A total of fourteen concepts were found to explain effective leadership of the project manager in highly complex and risky projects. Only concepts that were brought forward in three or more of the eight data collection occasions (excluding respondent validation) have been included. Four concepts were found to be mainly associated with the project environment and have therefore been classified as environmental dimensions. Ten concepts were found to be mainly associated with the leader (i.e., the project manager as a person) and have therefore been classified as leader dimensions, four of which were found to support other leader dimensions.

The following concepts were found:

- Environmental dimensions
    - Psychological safety
    - Care not to assume or neglect
    - Conduct and interaction
    - Collectivism
- Leader dimensions
    - Appreciating what is below the surface
    - Reflecting openly
    - Influencing
    - Acting independently
    - Resource management
    - Realizing viable agreements
    - Analysing (supportive)
    - Courage (supportive)
    - Humility (supportive)
    - Emotional resilience (supportive)

The findings are presented per concept in this section. A description of the concept synthesized from the data is provided before the findings of each concept are elaborated upon.

Psychological safety

The environmental dimension psychological safety was part of the focus group discussion and five interviews. It can be described as an environment where people have the trust that they can openly share information, insights, interests and (personal) errors, without the fear of negative consequences. Both trust and openness were found to play an important role with regard to this concept.

Psychological safety was perceived as a precondition for people to share. Replying to the statement that the project manager needs to be able to listen, one participant stated: *'Yes, but it's more. It's also about shaping the conditions that you can listen. That means that in your environment there needs to be trust, so that people want to talk to you.' (participant 2, vq.02.01)* This implies that ability to listen is not sufficient by itself, and that an environment where people share is required to have something to listen to. Another participant added: *'So, very consciously you're busy with creating an environment where things are reported, where things are addressed, where people feel safe to share their feelings. And where others take those feelings seriously.' (participant 5, vq.05.01)* These statements imply that things are shared only if the environment is right and people experience safety. Another participant expressed the

importance of having an environment where people trust each other: *'You need to create a setting where people trust each other. That requires a certain openness, tranquillity, and also trust in you as a leader. This is very important.' (participant 9, vq.09.01)* When probed about what constitutes psychological safety, another participant stated eloquently: *'That everybody may share his concerns, have his say, have an opinion. […] I'm convinced if you are able to establish that in a team, and that eventually requires everybody, […] then you can deal with anything.' (participant 12, vq.12.11)* This statement describes psychological safety as being able to openly share without being convicted. It is noted that establishing such an environment involves all of the people within a group, but that this will contribute to coping with issues.

The relevance of openly sharing information and insights in highly complex and risky projects was explained by two participants. One participants explained that an environment of openness and trust is required for the added value of team members to surface: *'You need people with insights, and they also need to bring these [insights to the table]. So there needs to be a certain openness and trust. I think trust is a very important one.' (participant 9, vq.09.03)* The participant later explained why this is especially relevant in complex and risky projects: *'In a simple project, to start at that side, you can basically determine beforehand what needs to happen and what is required to do it. That is something that you can plan quite strictly, and you can have people execute it. In a complex project and in a risky project, you need people to be constantly alert to what is happening and also to have them share this constantly. So, you need interaction within the team. And you simply need all the eyes, all the ears and all the hands to operate well. And that's not something you can ensure by preparing a checklist, or a scenario, so to speak. You can't manage it that way. You need to figure it out as you go. That's why it's complex.' (participant 9, vq.09.04)* This statement stresses the relevance of sharing between people in highly complex and risky projects. More specifically related to risks, another participant used a similar reasoning for the relevance of sharing openly in highly complex and risky projects. The participant expressed the notion that openness makes it more likely that relevant signals related to risks surface: *'You're working with a team that needs to feed you with issues and items, because I don't have a risk matrix that includes everything. That simply doesn't work, because they [risks] are in the details that someone in your project does know about, but may be afraid to share, hoping it will go well. And you need to extract those [details]. […] So, you want to have those lines as open as possible.' (participant 6, vq.06.05)* In addition to noting that openness helps to identify signals, the participant explains that this is especially relevant in highly complex and risky projects due to the potential importance of details. In line with this view, the same participant stated: '*I can't predict it all, so I need the eyes and ears of everybody.' (participant 6, vq.06.04)* Another participant also stressed the importance of openness in relation to risks. Referring to a well-known project where there initially was lack of openness with regard to risks which negatively impacted the project, the participant stated: *'But transparency of risks… That's also related to trust. If you are transparent about your risks, and your uncertainties, then this definitely helps in the controllability of the project. So, in the last years I have become an advocate of consistent and transparent risk management. That's actually quite simple. Then you even need not fully understand everything. But from your risk analyses, from the [different] disciplines, you collect where they see chances, or where they see weaknesses. [You] directly get information and you […] monitor the development every three months.' (participant 11, vq.11.05)* This implies that an environment of trust where risks are shared openly and are not filtered is important in order to see chances and weaknesses, which can impact the project.

In addition to information and insights, the topic of openly sharing interests was also brought forward. Referring to bringing together interests in a project where there initially was some distrust between stakeholders, one participant stated: *'And at times there have been quite tough discussions. But always with the overall objective in mind. Sharing the interests. At first it was: I'm keeping my cards close to the vest. And what is it exactly that you're set out to do here [aggressively]? And why are you already here? And is that all that you are going to do or is there more? So, to consistently maintain transparency. And well, to establish a setting where you eventually also receive that transparency. So, that those cards close to the vest are put on the table.' (participant 12, vq.12.09)* The participant notes that creating an environment where interests are openly shared is important and implies that by being consistently open, the project manager may influence others to be open as well. Another participant mentioned that explicitly stating interests towards each other as a personal best practice: *'Something that I always do is*

to work explicitly. […] Not to be prejudiced regarding what the other thinks. Often, I think that I already know what is good for you, and I have preconceived thoughts about it, and I don't talk about it with you. But if I know what I want, and you know what you want, and I also know what you want, and you know what I want, then we're there, right? Then we've made it all explicit.' (participant 10, vq.10.11) This suggests that it can help to share interests, because the preconceived thoughts that parties have about the interests of others may be incorrect.

The same participant provided an example related to giving trust and preferring openness over control. Referring to the frequency of progress reports in a project, which formally was required each month, the participant explained why the frequency was reduced during the project: *'It's not required each month, each quarter is also fine. […] It takes a lot of effort for the contractor to write it all down each time. I much more prefer […] that the key figures [from our side and the contractor] discuss with each other and drink some coffee and tell each other how they are doing.' (participant 10, vq.10.06)*. This example shows the relaxation of control, and a preference for openness between parties by frequent contact between key figures.

Openness was also found to include coherency of what is communicated throughout all levels. One participant, referring to addressing the project team, explains: *'One message to the [project] team and outside. So, what I present in a steering committee [meeting] is, has to be, the same as what I present throughout all levels of the project. Simply the same, […] simply: this is the truth of today. That's what I tell in the steering committee [meeting], that's what I tell here. If we don't agree, then [speak up] now. That can all happen transparently, that's fine. […] And I say this because this way you also try to take responsibility as a team. And I also firmly address […] people regarding these kinds of things. When they say, or when I hear that someone says: "It's actually a mess, etcetera." It's fine that you feel this way, that's possible, […] but then it needs to be resolved. And then it shouldn't turn into a rumour mill. And I think: The riskier and more complex a project becomes, the more difficult it is to control this.' (participant 6, vq.06.03)* This statement suggests several things. The importance of having one shared version of the truth is mentioned. Furthermore, it is suggested that alignment of what is reported to management with the project team helps to take collective responsibility. Lastly, the rumour mill should be limited, and gossip should be ill-tolerated by the project manager. Whatever is expressed as a rumour, should be shared openly and formally so that it may be solved. Thus, the fact that something is circulated as a rumour should not be tolerated, but the message itself should not be censored and it should in fact be stimulated to formally and openly communicate it.

Replying to the question how to establish trust, the participant replied: *'By continuously being predictable. By continuously doing what you say and saying what you will do. So that people at a certain point will believe that you mean everything you say. So, it's something that grows. […] If you do this, you also see that people will start to trust each other more.' (participant 9, vq.09.02)* This suggests a role modelling mechanism, where the project manager should consistently be an example. Another participant stated: *'So, for me […] that's making the effort or showing that transparency works and [that transparency] is essential on all levels. I am transparent about what I tell headquarters. And I want everybody to be transparent about what they encounter, because in the end, if someone conceals something that could have been crucial, then we have a problem.' (participant 6, vq.06.02)* In addition to reiterating the importance of unveiling relevant information, this statement also suggests that being open as a project manager shows others that this is how one should act.

Care not to assume or neglect

The environmental dimension care not to assume or neglect was discussed during the focus group session and four interviews. It can be described as an environment where people acknowledge complexity, have a tendency to keep asking questions and investigate, and have a sharp attitude towards assumptions.

Acknowledgement of complexity was mentioned by two participants. One participant stated: *'It's complex, so be it. [..] And you should not want to simplify it [..]. If it is difficult, then you should of course try to understand it by breaking it into pieces, but you shouldn't say: "That's*

not important, that's not important and that's not important." And subsequently you're in trouble, because the trouble in this type of projects can come from every tiny detail.' (participant 6, vq.06.09). This suggests that if aspects are complex, care should be taken not to simplify or to deem aspects unimportant out of ease. Rather, effort should be made to deconstruct such aspects into parts that can be processed. A proper appreciation of the complexity by others was brought forward by another participants: *'The first thing that comes to mind is the perception of complexity. […] The downplaying of the task at hand. And how will you handle this? How do you get people to be aware of the risks and complexity that may or may not be there?' (participant 12, vq.12.08)* This supports the notion that care needs to be taken not to downplay complexity. Furthermore, this statement specifically addresses the questions of how others can be made aware of the risks and complexity, suggesting that it not sufficient that the project manager alone has this awareness, but others should have this as well.

Several participants noted that the project manager should have and invoke in others a sharp attitude towards assumptions in order to ultimately establish an environment in which assumptions are not made. One participant stated: '*One of the most important things is that you never make assumptions in your project. […] You should establish that atmosphere in a project, that nobody makes assumptions, especially if it's so complex. I think it applies to every project, but especially to this type of projects where implicit assumptions can have disastrous consequences.' (participant 6, vq.06.10)* The participant explains that assumptions can have large consequences within complex and risky projects if they turn out to be incorrect. Also, by stating that an atmosphere should be established where assumptions are not made, it is implied that the project manager should not only take care not to make assumptions, but needs to establish an environment in which others also do not assume. The same participant, together with others, also mentioned that they are sensitive for certain expressions that indicate assumptions. The participant stated: *'If I hear "and I assume" or "I heard that" or those kinds of things, it makes the hair stand up on the back of my neck. […] For me that's not good enough. Who says that? What is the supporting evidence? Is that supported with data or whatever?' (participant 6, vq.06.21)* Another participant stated: *'You can say: "I now have a timeframe of eighteen hours for the stop. I think that's about right." Well, I'm sorry, but with all due respect, "I think that's about right," that's not helping me. I need you to have commitment from your suppliers that that is going to be right.' (participant 12, vq.12.07)* A third participant made a similar statement: *'What you encounter a lot in projects is: I think that the contractor is finished in time. No, not "I think," or "I expect that the contract is finished in time," no: knowing.' (participant 2, vq.02.13)* All three statements include an alertness for use of language that implies assumptions, followed by a call to action for increasing certainty.

Another way to take care not to assume or neglect that was found is to keep asking questions. After mentioning the importance of establishing an environment where assumptions are avoided, one participant continued: *'Secondly, but this is also a personal trait that is associated with it, is to keep asking questions. This can be done, especially at the beginning of a project, by simply [asking] the dumbest questions, so to speak. That resembles: don't assume.' (participant 6, vq.06.18)* Referring to one-on-one conversations with team leaders within the project, the participant later added: *'If there's something of which you think: I'm not at ease with this. Or: I'm not in control or this may become dangerous or whatever. To firmly keep asking questions and not leave until you have an answer and have a sense for: Will this work or won't it?' (participant 6, vq.06.19)* These statements imply that to keep asking questions is a way to not assume or neglect. Referring to achieving clarity, another participant stated: *'Clarity is obviously a subjective term, because it's subject to interpretation. But for me it has got to do with tackling the aspect of risk. Are things vague or unclear, which will delay you, or which will suddenly lead to a cost increase that was unforeseen? See, that's why I believe you should keep asking questions.' (participant 8, vq.08.02)* This participant seems to relate asking questions to achieving clarity in order to reduce vagueness and risks. These statements mainly refer to the project manager, rather than to the environment. However, consistency in how the project manager acts and the environment that the project manager aims to establish can be expected and may also be explained as a form of role-modelling, which is described in further detail under influencing below. This effect is illustrated by a statement of one participant: *'We don't make assumptions. […] To get to the point where people will tell you: "But now you're making an assumption." So, to set the example and also accept to accept that people will give*

that feedback. And also, to stimulate that.' (participant 6, vq.06.30) Therefore, the concept care not to assume or neglect is classified as an environmental dimension, rather than a leader dimension.

It was also found that there is a tension between taking care not to assume or neglect and making the required progress in a highly complex and risky project. Replying to the question how a leader makes sure that relevant risks surface, one participant stated: '*By giving the space and taking the time to discuss these questions. Because it takes time, it takes energy. Because you also want to approach it from different angles. I think that's an important precondition. And the difficulty is, and that's why it is difficult to reduce complicatedness, you do in fact get a lot of "yes, buts" that are not relevant. And eventually, you also want to get to the point. So, it's constantly balancing between giving space and staying focussed.' (participant 9, vq.09.05)* When asked to expand on this balance between giving space and creating focus, the participant continued: *'Whichever way you do it, it always comes down to giving space and openness in the beginning and making sure that everything that there is, is there [on the table]. And that you then start to confine. And to stay alert that you are not too stringent, for me that's one of the most difficult things, that you are not stringent in converging in such a way that potential new relevant insights that someone has developed, are pushed away. "You've had your chance, it's not there," so to speak.' (participant 9, vq.09.06)* These statements imply a tension between giving space to arising insights and questions, and making progress. These two aspects need to be balanced, and care should be taken not to let new insights be overshadowed for the sake of focus or progress.

Conduct and interaction

The environmental dimension conduct and interaction was discussed as part of the focus group session and four interviews. It can be described as an environment where stakeholders coordinate among themselves with an appropriate frequency and have pleasant contact.

The importance of interaction between people was expressed by one participant, referring to big teams in highly complex and risky projects: *'If you have a very big project team, then it starts to turn into an island, so to speak. And that's something that you want to prevent, especially with this kind of projects. […] Then the unofficial relationships become more important because there's no way you can manage it all.' (participant 6, vq.06.26)* This suggests that increase in team size also increases the likelihood of seclusion. This also suggests that informal relationships increase in importance if complexity and risk is high, because such project are less manageable. Referring to informal get-togethers between key personnel to deal with items that have impact on the project, another participant stated: *'The contractor was situated across from us. […] Short lines of communication, that is also very important. To quickly walk into each other's office, not to wait until there is a formal moment. No, [you should] particularly use those informal moments to deal with these kinds of things. They [the contractor] also did that. […] We both believed that this should happen.' (participant 10, vq.10.07)* This suggests that short lines of communication and interaction between groups is important. The note that it should be possible to quickly interact with each other, without waiting until there is a formal occasion, suggests that stakeholders should interact with an appropriate frequency. Interaction was also mentioned as a prerequisite for achieving consensus between parties that have opposing standpoints. During a discussion about stakeholder analyses, one participant stated: *'What is the degree of interaction? And on another axis, you can plot: What standpoints are far apart? And then you see that that the standpoints that are far apart also have a limited degree of interaction. Well, that way you will never reach agreement.' (participant 5, vq.05.05)* This statement implies that interaction is required for parties with differing positions to reach agreement. Another participant mentioned a practical example of an intervention that can be used to bring parties into contact: *'Together we removed the square table and changed it to a table like this one [a round table]. We started having coffee with each other, we put out cookies. Well, that always works. See, things like that may be small, but they are interventions. Because if there's cookies somewhere, then people eat cookies. That's what people do. And they eat cookies together.' (participant 3, vq.03.09)* This example implies an active role for the project manager in bringing parties together. Another participant replied by arguing that the project manager should also use the help of others for bringing people together: *'Well, you don't do*

this alone. You also have liaison officers in your team, and if you are able to point them out… There are a couple of people in your team that can do this naturally.' (participant 4, vq.04.04)

With regard to the way people interact, during the focus group session one participant expressed the believe that this affects performance: *'Practice has shown that if all those parties communicate in a normal way, firstly, it is more fun, and secondly, that this leads to a good end result more effectively. […] It doesn't happen by itself, so you'll have to put in effort and apply tricks to connect those people.' (participant 2, vq.02.04)* This statement also suggests that the project manager needs to actively pay attention to the way people interact and that it requires effort. Replying to this statement, another participant stressed the temporary nature of project organisations: *'It is not a permanent organisation that has to optimize a process to coming twenty years. No, it's an ad hoc partnership, a marriage of convenience, that needs to become a success. It's not true love either, because you were brought together: He was the most competitive contractor, he had the best price for something else, and he was still there, you inherited him. Let's see you make an ad hoc partnership out of it. It's a one-time exercise to make a team out of it, knowing that you'll part.' (participant 4, vq.04.01)* Two aspects seem to be brought forward in this statement. Firstly, control by the project manager over who is part of the group of people that is involved may be less compared to line managers in a permanent organization. Secondly, it suggests that the temporary nature and the knowledge that partnerships may end together with the project are also factors that make it more challenging. The importance of pleasant interaction was further highlighted by the statement of another participant: *'The health of the [communication] lines is, I dare almost say, a strong indicator for the health of a project. And if you manage to get the thickest lines, where there should be the most interaction, […] if you manage to get those green [instead of red], that already goes a long way.' (participant 3, vq.03.04)* During an interview, replying to the question whether proper conduct is specifically important in complex, risky projects, one participant also explained its importance: '*Yes, because you are under stress more. So, it applies more. It applies more, because you will be under pressure, and you will be under pressure as a team. That is when you need to be there for each other. That is related to the way how you behave towards one another.' (participant 7, vq.07.03)* This implies that the pressure and stress is higher in highly complex and risky projects, and with that the importance of proper conduct increases as well.

Several participants made statement with regard to how to establish proper conduct and interaction. One participant stated that in one project, a code of conduct was developed together with multiple parties during a project start-up: *'We also developed a code of conduct. We developed it together in the project start-up: What are things that are important for you? Those are very much related with empathy, because things that annoy us, that annoy you […], let's just talk about that. It bothers us.' (participant 10, vq.10.13)* This describes a process of collectively making explicit what rules of conduct are sought by a group. One of these six rules was to allow each other to have fun in your work. Referring to this rule, the participant stated: *'This may be number one. Because if you allow each other to have fun in your job, well, if people have fun in their job, then they are capable to do much more compared to when they come to work ill-tempered. […] If someone is sad or has no fun, act on it. So, what is wrong there? In other words: Discuss it.' (participant 10, vq.10.14)* This suggests that allowing each other to enjoy the work is part of proper conduct and interaction, and that it increases people's performance. Also in relation to establishing proper conduct and interaction, other participants mentioned that they have a low tolerance for improper conduct and interaction. For example, one participant stated: *'I saw an email of which I thought: It's not about its content, but I thought it was wrongly expressed. So, then I have them come here. And they think: This is about a calculation or something of that sort. But it's not about calculations: It is about the way you talk.' (participant 7, vq.07.02)* Another participant explained why overly judgemental interaction should be ill-tolerated when discussing the topic of psychological safety as follows: *'But if there's an immediate judgement: "Yes, but how could you come up with that?" Or: "What do you know about it?" Then the next time that person is less likely to give his opinion, which may be very relevant at that moment. So, that means that as a leader you simply have to be very sharp regarding how people respond. And you have to be very clear that you do not appreciate an immediate judgement. "What do you know about it?" Wait a second, he is not saying it with the reason to make it difficult for you. He is saying it because he is genuinely concerned.' (participant 12, vq.12.05)* Both statements imply that the project manager should actively

intervene regarding the way people express themselves towards one another. In the latter statement it is more specifically argued that with regard to interaction, overly judgemental reactions make people more reluctant to express themselves, thereby negatively impacting psychological safety. With regard to the behaviour of the project manager, another participant also supported the notion that conduct and interaction affects psychological safety: *'But if you only do you work and lead meetings correctively, then everybody shuts off and shuts down. And you notice […], well, I have not encountered other people, or you have to be extraordinary, [you notice]: being complemented for something, even if it's something obvious, well, that stimulates transparency tremendously.' (participant 11, vq.11.06)*

Collectivism

The environmental dimension collectivism was found to brought forward in the focus group session and four interviews. It can be described as an environment where stakeholders approach each other with empathy, and sincerely take into account the overall interest and the perspective of others into one's own considerations. Empathy in this sense should be read as putting oneself in someone else's shoes.

Taking into account the overall interest was explained with use of an anecdote by one participant during the focus group session: *'Is it good for my project? No, maybe not. […] But it is better for the whole or for the group that is to be served. So, you can look beyond your own confined project issues if you know that it is better for the business, to achieve the strategic goals of the organisation, that kind of things. And that helps you. […] Merkel does not necessarily always do what is better for Germany, because she knows that there is something more important and bigger.' (participant 3, vq.03.06)* This implies that interests of others need to be weighted and that in some cases these may outweigh the interests of the project. The participant mentions that this requires being able to look beyond one's own interests. The notion that taking into account the overall interests is important was supported by a statement of another participant during an interview: *'You need to stay objective and rise above the project interests. So, to really put yourself in someone else's shoes: If I were the boss, well, what then? Will this go well or will it not? It obviously doesn't mean that you have to solve it all, but you need to continuously use your antenna, because this is where your project fails. Especially for this kind of projects, they will surely fail on this aspect. They seldom fail on technical aspects.' (participant vq.06.25)* This participant notes that considering the overall interests is important, because not seeing or considering these interests may even lead to potential failure of a project, specifically in the case of complex and risky projects. Furthermore, the participant mentions that one should try to put oneself in someone else's shoes, which can be seen as an emphatic way to approach others. During the focus group session, the participant expanded on the concerns of settings where parties have a strong focus on their own interest: *'A lot of projects are characterised by […] the fact that everybody is competing from within their own role, their own authority, their own task, their own responsibility. And [everybody] is doing this well, but that does not establish a fruitful project environment. A real-life example […]: The contractor was doing things incredibly well. Additional work was submitted to the client thick and fast, all very well kept track of, standing firmly for what they were originally contracted for, holding the client to its starting points, and those designers would design based on the formalized requirements, but the interaction afterwards was limited. Those parties would do this well. Amazingly, they were located on the same site, but they might as well have been 100 kilometres apart, because they did not find each other. And this made us say: "Well, why don't you have some coffee with each other, twice a day or whatever, and try to establish a connection. Why are you doing what you do? What is driving you? When is the project a success for you? Are you still enjoying yourself? We have got one of the nicest projects, but we all come to work with our heart in our boots. How are we doing this to each other and why are we doing this to each other?" Well, that's uniting.' (participant 3, vq.03.08)* The negative consequences of an environment where parties are overly focusing on their own interest described by the participant include an unfruitful project environment, secluded behaviour and people to have less joy in their work. Furthermore, the statement suggests that openly asking questions with a reflective nature helps to decrease secluded behaviour and overly focusing on one own's interest.

Other participants brought forward the subject of empathy, explained as being able to put yourself in someone else's shoes. Discussing the cooperation with the main contractor of a project, one participant stated: *'I think it is also related to empathy. Try to put yourself in someone else's position. We also discussed this: imagine that you are the client […] and I am the contractor. How would we do it? What would happen? If you think about this, then you also get more understanding for the situation a contractor may be in. And that [creates] mutual understanding, so them also towards us…' (participant 10, vq.10.02)* The participant argues that empathy, in the form of imagining the project from the perspective of your counterpart, helps to improve mutual understanding. The same participant also stated: *'We also introduced the peer review: Have a look at someone's work and see how he does it. And ask questions about it. Enter into a conversation.' (participant 10, vq.10.04)* This statement proposes showing interest in the work of others and discussing it as an intervention for empathy. The notion that understanding the work of others is important was also supported by another participant: *'You also need to be able to understand and empathize with the problems of someone else.' (participant 11, vq.11.02)* Another participant mentioned that people should try to realize the implications for others: *'Go and talk with the production planner. [To understand] what it means for him. Look into it. And realize, if you are delayed, what it means for him and for the company. I also simply sent some people: Go and talk with him. Realize, start to realize what it means for the other side.' (participant 12, vq.12.10)* This implies an active role for the project manager in stimulating empathy. The importance of having a good sense and understanding of the environment that will be affected by the project by looking into it, was expressed by another participant: *'Imagining it. […] What you often see is that a lot is prepared from behind a desk about how to approach something. Well, I don't believe in that. So, you need to be there. You need to watch. You need to know: How does it work? How should we do it? […] So, it's good to also understand how this will be experienced by [someone] when we start moving this from A to B. I think that you generate a lot of goodwill this way, but it also enables you to be sharp, especially when during transitions or towards an end state.' (participant 6, vq.06.23)* In addition to being better able to assess the work, the participant suggests that showing interests also generates goodwill.

Engaging stakeholders to collect input was mentioned by one participant, referring to project with a brownfield nature: *'We put a lot of time in engaging the environment, the brownfield-environment in which it took place, in order to realize it [the project]. […] We drank a lot of coffee, as we used to call it, on all levels in order to get people to understand what we were going to do, why we were going to do it, how we were going do it, how we planned it, [and to ask] whether they had ideas to do things differently or better, or if we had forgotten things. So, there was a lot of preparation time before executing. And that's how we achieved consensus and maintained it as well, because you're not done after one conversation. It's also a regular phone call or email.' (participant 12, vq.12.01)* This statement describes the process of engaging with others continuously and discussing the project to improve understanding and inviting others to come with suggestions. Although this can be seen as simply interacting with one another, more importantly this is specifically aimed at exchanging perspectives and also serving the interests of others. Another participant expressed the importance of trusting each other and being open to each other's way of working, which is achieved through conversing with each other: *'To have trust and to know this of each other. If I need to work with you or three, four people, then I want to know. Then you should talk about it. And you may be very different, even totally different as a person or in the way you act. But, ultimately, you need to involve each other, and you need to tell where you are and what you expect of others. […] That way you also get stable project management. If you notice that people are open to each other's way of working… Even if that [way of working] is different, and it is different, take it from me that that is different.' (participant 11, vq.11.03)* So, stakeholder need to engage with each other in order to understand the perspectives of others and be open to each other's way of working. After being probed about how to achieve and maintain consensus, another participant stated: *'I believe it's being open. Telling it like it is. Also sharing your dilemmas, so explaining choices, why you made them. And, well, sharing the considerations that come with it. So, in order to prevent that later, in hindsight, you end up in discussions like: "But, how did they manage to come up with this?"' (participant 12, vq.12.02)* This statement highlights the importance of sharing dilemmas and considerations so others may better understand your perspective, especially if choices have to be made that may be to the dislike of others. In addition to sharing

considerations, involving others in decision was also suggested by the participant: *'Try not to judge about right or wrong. Instead: We're in this together. You tell us. Now you can still think with us regarding possibilities and solutions. And we really started this in an early stage very consciously.' (participant 12, vq.12.03)* This is a way to achieve consensus about solutions that sufficiently serve the interests of those involved. However, this may not always be possible due to conflicting interests. Referring to such cases, the participant stated that the following would be explained to the ones involved: *'But then we will deliver that message together [to management], and let a choice be made. And if that is not in the interest of the project, that's fine, but then we'll escalate. So, also to be very clear, explaining the path: This is what it means if we don't resolve it together.' (participant 12, vq.12.04)* This suggests that disagreement should be resolved by formal escalation, rather than by clashing on a personal level with one another. Referring to items or topics where there would be conflicting interests, another participant stated: *'Those were actually often resolved on the work floor and if that wasn't possible, then they were timely escalated to [the project manager of the contractor] and me. And if we could not agree, then we could go to our project sponsors. […] And this was a way of working that was very much to our liking.' (participant 10, vq.10.03)* This statement also suggests that formal escalation can be a mechanism to avoid hefty clashes and maintain positive relationships, despite conflicting interests.

Appreciating what is below the surface

The leader dimension appreciating what is below the surface was part of the focus group session discussion and four interviews. It can be described as observing soft signals and issues, acknowledging their importance and making effort to resolve them.

The importance of appreciating what is below the surface was expressed by several participants. During the focus group session, one participant stated: *'There are numerous examples where there are fantastic information systems within projects, but where team members say: "My gut tells me that this will not go well." Well, I believe, as a good project manager, you have to act on it. And you will need to take care that people come to you with their gut feeling. That you know the gut feeling of people.' (participant 2, vq.02.02)* This suggests that, even if a signal is not supported by formal hard information, such soft signals should not be dismissed as unimportant and should be taken seriously. The participant later added: *'A gut feeling is a fact as well.' (participant 2, vq.02.03)*. This implies that the fact that someone has a certain gut feeling, although it may not be captured in figures, can be acknowledged as a fact that is not subordinate to facts that are supported by hard evidence. Also referring to soft signals, another participant stated: *'But you do have to zoom in on it. What is going on? And what are we not doing that is causing this? Or what are we doing that is causing this? So, I believe that you have to respond to it in a correct manner, so to speak. […] You have to do something about it.' (participant 6, vq.06.08)* This statement also supports the importance of acknowledging soft signals. Referring to signals from team members that someone is having issues, another participant stated: *'And those signals […] were important [to deal with] in a correct, timely manner. […] Someone was not feeling well. I hadn't seen it yet. What is going on there? Let's have some coffee with him. And then, sometimes there would be a very emotional story behind it. [I was] glad to now see and hear this. And the other side would say: "I'm glad that I now have been able share this." Don't wait too long with it, but share it. The door is always literally and figuratively open. And that's what I always said to everyone: "Don't wait with it," because then I can help you. Because that is also my role. I want you to enjoy your job. I have to be able to take care that you have fun in your job. And if that's not possible, or something is troubling you, or it is too much, you can't handle it, that's also possible, the pressure is too high, then we need to take care of it. […] If you have an eye for it, then you will also have a well-oiled machine.' (participant 10, vq.10.01)* This statement suggests several things. Firstly, it supports that soft signals should be acknowledged as being important. Secondly, it suggests that both sides feel better if the underlying causes of soft issues are shared. Lastly, there seems to be a strong believe that solving soft issues and ensuring the well-being of the team is part of the job responsibilities of the project manager.

The importance was explained by one participant as follows: *'If someone is unhappy in a project, I'm convinced that that person is more inclined [to think]: "Well, they won't listen to me,*

and if it goes wrong, so be it." So that person strays away from the team, so to speak. […] My experience is that in those cases, things start to block. That does not resolve itself. Everybody can be grumpy for a day, that's fine, but the next day, within 24 hours so to speak, it needs to be allocated somewhere. If you keep it to yourself, then it doesn't go well and you stay grumpy.' (participant 6, vq.06.13) This implies that not solving soft issues can lead to disengagement of people, resulting in that they stop sharing. Another participant explained the importance in a different way. Referring to managerial activities such as planning and organising as the hard side, one participant stated: *'You can only be effective on the hard side, if you have taken care of the soft side. So, if you don't work on the relationships in your project, or if you don't work on your personality, on your character, in your project, then you'll be less effective on that hard side.' (participant 8, vq.08.01)* This suggests soft aspects should be considered in order to be effective regarding the hard, managerial aspects.

As part of appreciating what is below the surface, the topic of being able to observe soft signals was also brought forward. This was reflected in two anecdotes expressed by one participant: *'If he says: "For me project success is simply staying within [the boundaries of] time, money and quality," and he's looking at the job site of […] for a next step, then I know that project success for him is to make a career step.' […] It is to sense: "I'm doing super well," but if you meanwhile look disengaged and you're only looking at your phone, I need to be able to act on that. The empathy… I simply mean to say: to be in direct contact with each other.' (participant 3, vq.03.02)* Although the statement includes other topics such as empathy and acting, these examples also imply that the project manager should not only listen to what is being said, but should observe more broadly in order to also see softer signals (e.g., non-verbal communication, being occupied with something else). Two other participants expressed that they gratefully make use of team members that were able to pick up soft signals that they themselves do not observe. Referring to a group of project assistants, one participant stated: *'So they picked up things that I didn't hear or see. So, I said: "If you notice things, then you should tell me. I don't see everything or hear everything." And I learned a lot from that, because you also start to develop your own antenna a bit more.' (participant 10, vq.10.15)* Another participant stated: *'I have to say, especially when I had a big team: Make sure that you have a good secretarial office, because I always ask them if there is someone that is having issues. […] Because I don't notice it. And then they say: "You should watch Peter, because he has…" Those are skills that you have in your team, so to speak. And you shouldn't think: "I'll take care of that myself."' (participant 7, vq.07.01)* Both statements refer to making use of observations of soft signals by team members that would be better able to do so.

With regard to how to solve soft issues, one participant mentioned several examples: *'That is, if someone is extremely distracted, to say: "Shall we not do this conversation now?" Or: "Do you also feel that this is an awkward conversation?" Or: "Shall we just have some coffee or have a walk outside?"' (participant 3, vq.03.05)* These examples seem to include making feelings explicit and proposing small interventions. Also referring to solving soft issues, another participant explained that effort should be made to understand what the underlying causes of soft issues are. Referring to an example of a team member of which others feel that he complains a lot, the participant stated: *'"He's always complaining about everything." No, he's complaining because of some particular reason.' (participant 6, vq.06.06)* The participant later continued: *'I also think it is a lesson for myself as well, to continuously learn from: What am I not monitoring? […] And that may be very project specific. And [you have] to be able to put your finger on it. Because in the end it's always something concrete that makes you have a gut feeling that something is wrong.' (participant 6, vq.06.07)* This suggest that the effort that is made to understand soft issues should ultimately lead to something that can be pinpointed and subsequently be solved.

Reflecting openly

The leader dimension reflecting openly was a topic in the focus group session and in four interviews. It can be described as showing vulnerability and reflecting openly on the behaviour of oneself and others on personal and group level.

Regarding showing vulnerability, one participant explained its importance in complex and risky projects as follows: *'Showing vulnerability, I think that, especially for this type of projects, it's crucial. Because it shows people: You have to bring it to the table. Because I think that it is crucial to bring these projects to a success. For me it is something that stands out, that really is distinctive, for this type of projects. To really have the transparency that if something is not well, then it is not well, and we should discuss it.' (participant 6, vq.06.16)* After probing, the participant continued: *'I relate it to transparency. Then people also see: He shows what he really thinks. […] So, I should also be doing that.' (participant 6, vq.06.17)* These statements imply that showing vulnerability is not only important for the project manager, but for others as well. The participant suggests that publicly showing vulnerability shows that it is safe to do so and that it is something that should be done for the sake of transparency.

The notion that courage is required for reflection and showing vulnerability was expressed by some participants. After being probed about reflective conversations, the participant replied: *'It starts with having the courage to pay attention to it. […] Some think: "Oh, I'm not going to do that. I would have to put myself in a very vulnerable position." I believe you should show your vulnerability.' (participant 10, vq.10.10)* This suggests that courage is required for showing vulnerability. Responding to a statement about giving the example as a leader, another participant stated: *'And if you make an example of yourself, that also means that you can fail in front of everybody. So, you also need to have the courage to make a mistake in front of everybody from time to time. It happens.' (participant 4, vq.04.07)* After being asked how the participant deals with such events, the participant replied: *'I'm very open in what I share about what that does with my emotions. […] Yes, for me it's the only way out. […] But in the end, setbacks make you stronger. […] You stumble, not everything goes well. The question is how you handle it.' (participant 4, vq.04.08)* These statements also suggest that courage is required, because the project manager is not free of error and therefore needs to accept potential public mistakes. Another participant also expressed that it is important to dare show that one is never completely in control: *'You don't know everything, you're not in control 100%. There are always things that you're dependent on, and you should dare to show it. Because people that don't show that, there's something wrong there. I respond to it. Because you can't be in control 100%.' (participant 8, vq.08.05)* This suggests that not showing any vulnerability is something that people respond to negatively, because it is not possible not have complete control. Another participant also expressed the importance of showing vulnerability and explains that it is related to trust: *'I always try to be open towards others and maybe sometimes too vulnerable. I have never been a manager that directs top-down. I can't do that. That's not my style, because it is not real. That's something I feel, that that is not real. I can't direct someone to do something, [but] I can ask someone to do something. But to really direct, once perhaps, but it is not my style. So, I rather show something of myself, of my own weak sides and what drives me. […] You show your passion, so to speak. And by doing that, you set others in motion. […] The other side also has to be receptive to it. There are people that […] want to know everything, but not tell anything about themselves. Well, those people don't get my trust easily. I mean: it becomes very difficult to give trust to someone if you need to tell things, but the other side does not give anything back.' (participant 11, vq.11.04)* This implies that people that it is more difficult to establish trust with people that are not willing to be open about their weaknesses and what drives them.

With regard to reflection, during the focus group session one participant stressed the important of self-reflection and self-knowledge. Considering the project manager, the participant stated: *'No self-reflection without self-knowledge. If you're surprised about your own conduct, your own emotions… And: Oh, dear, what's happening to me? […] That's why I wrote down: "no self-reflection without self-knowledge." […] [It's required] to a great extent, because you're always in front of the group, the center of attention. There's a lot of emotions involved. You can never duck, never dive, never lean over.' (participant 4, vq.04.16)* Self-reflection seems to be especially relevant for the project manager, due to the nature of the role and the involved exposure. The same participant also explained the importance of self-reflection and self-knowledge for others: *'Self-knowledge and self-reflection, that's something that you wish for everybody in your team. Both on a personal level, but it also benefits the group. And especially as a project manager it should be a priority to focus on this and you have a leading role in achieving this in the group. Because if people in the group don't have sufficient self-knowledge,*

don't want to reflect on their actions and seclude themselves, then you get the behaviour described by [participant 3, refer to citation vq.03.08]. In order to get the out of that mode, you will have them equip them with some things of introspective nature.' (participant 4, vq.04.09) The participant advocates that lack of reflection leads to secluded behaviour and therefore the project managers should make it a priority and has a leading role to achieve reflection within the group. This suggests that openly reflecting with others decreases seclusion, thereby increasing collectivism.

The reflection style of another participant seemed to be characterised by reciprocity, meaning that the participant would ask the counterpart to also reflect on the performance of the participant. Discussing one-on-one conversations with team members, the participant stated: *'And then the conversation was not only about the role of the employee, but also about my role. I have always asked: What do you think about me? Because that helps me with my leadership and guiding the process.' (participant 10, vq.10.09)* The participant seems to have a willingness to improve. This style of reflection was also applied on the level of groups. After discussing the reflection between team members, the participant stated: *'But also towards the contractor: What do you see looking at us? Because, the contractor would ask, since it was part of our agreements, to evaluate them on six aspects. Well, then you write up a text. I thought: This is very nice. I will gather this from the team, collect it and eventually give it to the contractor and enter into a discussion about it. And then I said: It would be very unbalanced if I would not ask the question to you: What do you think about me, the client? I also did that. So eventually, this led to reflective conversations. And this turned out to have a lot of added value, because regarding several aspects the contractor really saw relentlessly where we could improve. And that helped: Because we improved, it also helped him in return. […] This also worked the other way around. With other words, you then have a whole other way of interacting with each other.' (participant 10, vq.10.05)* The participant suggests that not only the party that is receiving feedback benefits, but the party providing the feedback benefits as well, because of the improved performance of the receiving party. This suggests that by reflecting upon one another, parties help each other and improve performance. Referring to 360-degree feedback sessions with people that you work with in a project, another participant stated: *'Taking the position of project manager of a big organisation […]: How are you performing in this organisation? Not in your company or whatever, no, who are you working with? And if you do this every nine months or year, what you should do in a project, well, that benefits the project. Because everybody, at the time [of providing feedback] is anonymous, although you need not be afterwards […], but [everybody] has been allowed to say what they feel. Well, that is important.' (participant 11, vq.11.07)* This supports the view that providing feedback to each other is important and benefits the project.

Influencing

The leader dimension influencing was discussed during the focus group session and two interviews. It can be described as altering environmental factors and the behaviour of others by role-modelling and applying interventions.

Replying to a statement about shaping the environment in order for people to feel safe to share, one participant stated: *'That's what I mean with influencing culture. […] To influence effective behaviour. So, leadership is really to influence that environment, that culture.' (participant 5, vq.05.04)* This implies that the project manager needs to be able to alter environmental factors in order to establish a setting that is appropriate. Changing the context of a project was also reflected in a statement of another participant: *'I think that a lot of project managers think that a project is a project. But there are a lot of change management elements in it. There are also a lot of process elements in it. If only: change management of the environment in which you realise the project. You need to recognize this, there needs to be attention for it, because otherwise you deliver something in an environment less effectively compared to when you would have taken it into account.' (participant 2, vq.02.14)* The participant argues that the receiving party of the project may also need to be influenced or changed in order to improve project success. This notion was supported by a fictional example of another participant: *'An airport is a nice example of course. There's a small local airport and suddenly two runways and a new departure area and whatever need to be added. So, there's an organization where*

everybody knows each other [that needs to go] to a professional organization. That's what I mean: How well is the permanent organization equipped to receive such a project? And I think it is crucial to appreciate this for the sake of the complete organization and the project. So, we can build, make, deliver all of this technically and fantastically, but these people will [have to operate it]. They need to be involved, expanded, whatever it takes, changed even maybe, in order to eventually make the project successful.' (participant vq.06.24)

The use of interventions was mentioned by participants as a way to influence. This is supported by a previous notion about collectivism, where one participants stated: '*It doesn't happen by itself, so you'll have to put in effort and apply tricks to connect those people.' (participant 2, vq.02.04 partial)* Regarding conduct and interaction, two participants also mentioned interventions. One participant mentioned calling people in to discuss the tone of a message: *'So, then I have them come here.' (participant 7, vq.07.02 partial)* Another participant suggested firmly addressing judgemental reactions: *'And you have to be very clear that you do not appreciate an immediate judgement.' (participant 12, vq.12.05 partial)* Several other interventions in order alter the behaviour of others were also mentioned by participants. For example, one participant provided an example of how the importance of certain norms can be explained by confronting people with the potential consequences of wrong behaviour. It involved showing videos of the vulnerable target group of specialized food in order to stress the importance of hygiene in the workplace. The participant stated: *'I showed them [the videos] to the construction workers before we started building. […] The room went silent.' (participant 4, vq.04.03)* Another intervention that was mentioned is to have a zero-tolerance policy concerning behaviour that exceeds certain established norms. Referring to airport sites where debris poses an unacceptable risk, one participant stated: *'It is unthinkable that some insulation material [is left somewhere] and that you would not immediately reprimand someone.' (participant 3, vq.03.03)* Yet another participant mentioned an intervention in order to ensure that the most important risks or goals remain top of mind. Referring to the main project risks or variables (e.g., time), the participant stated: *'So, keep referring to it continuously. So, have two or three main messages and keep recurring to it.' (participant 6, vq.06.14)* The participant later argued that deviations to the most important variables should be well explained in order to maintain the credibility and consistency of the message. Referring to delaying the delivery of a project of which the main risk that was to be controlled was late delivery, the participant stated: *'You have to be very clear about it, because if each time [you say]: "A little more is ok," then your message is not consistent. So, if you move it, whether it is money or time or whatever it is that you are controlling: "We do this, because otherwise we would really not achieve our goal." So, if you reset the element that you're controlling, then that should be well explained at all levels.' (participant 6, vq.06.15)* This suggests that if a deviation from an important variable is opted for, the rationale for the decision should be clear at all levels.

Lastly, role modelling is a specific mechanism of influencing that was found throughout other leadership concepts. As a general comment, one participant stated: *'Leadership also means giving the example. That means that if you're acting in a certain way in the project, then you can also demand this from all the people in the project that are working for you.' (participant vq.02.12)* This implies that in order to expect others to exhibit certain behaviour, the project manager should first show that behaviour. Another participant stated: *'In order to unite, all those practical things, the project manager has to make the leap first: showing vulnerability, expressing his emotions, showing courage, giving the example. And this invites others to do the same.' (participant 4, vq.04.13)* This statement is similar in that it suggests that the project manager should be the first to give the example, thereby inviting others. With regard to psychological safety, two participants implied a role modelling mechanism. Referring to doing what you say and saying what you do, one participant stated: *'If you do this, you also see that people will start to trust each other more.' (participant 9, vq.09.02 partial)* With regard to transparency, one participant expressed the wish that others act similarly: *'I am transparent about what I tell headquarters. And I want everybody to be transparent about what they encounter […]. (participant 6, vq.06.02 partial)* Also related to transparency, but with regard to interests, another participants mentioned: *'So, to consistently maintain transparency. And well, to establish a setting where you eventually also receive that transparency. So, that those cards close to the vest are put on the table.' (participant 12, vq.12.09 partial)* These statements imply

that by exhibiting open behaviour, similar behaviour can be asked from others and may eventually be established.

Acting independently

The leader dimension acting independently was part of the focus group discussion and two interviews. It can be described as taking, organizing or forcing decisions where required and to taking the right course of action, even in the light of opposing forces and pressure .

The topic of acting was found to be intertwined with other concepts. For example, referring to the gut feeling of people, the statement that *'as a good project manager, you have to act on it,' (participant 2, vq.02.02 partial)* demonstrates the believe that, related to soft issues, action of the project manager is required. This similarly applies to the statement '*If someone is sad or has no fun, act on it.' (participant 10, vq.10.14 partial)* With regard to analysing, two statements suggest that analysis should be followed by action. This is implied by the statement *'I give myself the space to make an in-depth analysis and on the other hand to quickly act on it,' (participant 8, vq.08.04 partial)* as well as the following statement about stakeholder analysis: *'there's a tremendous need for communication, but there isn't any [communication]. Then I'll act on that first.' (participant 4, vq.04.10 partial)* So, this supports the notion that acting is important, either based on issues or after an appropriate course of action has been determined.

Somewhat more specific is the topic of acting independently. This refers to acting as one believes is right, despite opposing forces or pressure. One participant stated: *'If I would be led by fear or be convinced that I would do something wrong, then I wouldn't do anything here. […] There's always a manager that has an opinion, but I'm not led by it, because I look at what is good for the project.' (participant 8, vq.08.03)* This suggests that, as a project manager, doing what you believe is appropriate should outweigh the fear of making error or judgement of others. Later, the participant continued: *'Saying what you think isn't necessarily always helpful, but you have to dare make a point if you believe something isn't right. […] If it's required for the sake for the project, I'll do it, otherwise I don't. […] Within the lines there where needed, or as is prescribed by the context, and outside the lines there where the project needs it.' (participant 8, vq.08.04)* So, there seems to be a differentiation between items important for the project that are worth standing up for, and other items where conforming to others is acceptable.

During the focus group session, one participant explained in detail the importance of maintaining the balance between the goals and associated responsibility that are given to you as a project manager on one hand, and the means and authority you receive for realization on the other hand. The importance of acting independently is made throughout several statement. The participant started with: *'It's also about standing up at the beginning and saying to the project sponsor: "Your project goals, they are simply unachievable," if that is required. […] And this is where many projects fail, that this simply doesn't happen in the beginning.' (participant 2, vq.02.09)* According to this statement, the project manager should act freely towards to the project sponsor to the extent that difficult messages are conveyed, and not doing so may even be detrimental to project success. After probing, the participant continued: *'Well, it's a combination of things. So, firstly, to have the analytical capability and experience that you understand that you will need to examine several things at the beginning in order to maintain grip during the project, towards your project sponsor and whomever. So that is one thing that you need to be aware of. And subsequently you will need to act on it. So, once you've figured it out: Now I'll need to act. […] That takes courage.' (participant 2, vq.02.05)* The point here seems to be that understanding what needs to be done is not sufficient and the project manager will also need to act accordingly. To further explain the importance of maintaining balance between means and authority, and goals and responsibility, the participant compared the project manager to another professional occupation: *'If you go to the hospital and your knee needs surgery, then you say: "I'm going to the professional. I'm going to the orthopaedic surgeon, because he is the best at doing surgery for me knee." The interesting thing here is: That surgeon will say: "I'm willing to do surgery on you, but it will happen under my conditions."' (participant vq.02.10)* Later, the participant continued using the same example: *'Imagine that within your project, you already were provided with all the tools at the beginning, well, within that project suddenly something changes. Then I believe that you can stand up and say: "This*

way I cannot perform my job. So, either you change that, or I will give you back the keys and you can find someone else." Think about the comparison that I made with the orthopaedic surgeon. I believe that a project manager, at this level, is a professional. […] So, if he says: "Under these circumstances I simply cannot do my job," then this has consequences.' (participant vq.02.11) These two statements support the notion that the project manager should act freely to the extent that sufficient means and authority for the project are demanded. The participant continued to explain that, ultimately, the project manager should rather resign than continue an assignment that somehow exceeds limits of integrity: *'Good project managers are able to define for themselves: If you cross this line, then I quit. And that may be with regard to numerous matters. That may be with regard to safety or if things are being asked of you that exceed your own integrity. Or if things are being asked of you, where you are responsible for the performance, and you do not get the required means or the authority to manage it, then it's my belief that the project manager has to intervene. Because, in what other way can you truly be held responsible for the task at hand? You can't.' (participant 2, vq.02.06)* The explanation seems to be that truly bearing the responsibility for the project is only possible if the project manager believes that the provided means and authority are sufficient to allow success.

Referring to an example of a bold intervention by a project manager that is left out for the sake of anonymity, another participant stated: *'Lawyers will be at your doorstep, the project sponsor will be at your doorstep. It may all be impossible and not acceptable, but it was the only way to recover the project. So, you make a decision for the sake of the whole that is not driven by self-interest. You perhaps make your own position impossible and may be discharged. But he saw this as the only way to make headway in the project. The local residents had to be reconciled with.' (participant 4, vq.04.12)* This example illustrates that there may be moments where actions by the project manager are required that should be taken, regardless of opposing forces and pressure.

Resource management

The leader dimension resource management was a topic in the focus group session and three interviews. It can be described as mobilizing the required expertise and maximizing the team's problem-solving ability throughout different phases.

Firstly, the conscious selection of team members was a topic conveyed by three participants. During the focus group session, one participant stated: *'My opinion is that the project manager should realize what needs to be considered when assembling a team.' (participant 2, vq.02.15)* This expresses the believe that knowing how to select team members is an important skill. This notion was supported by another participant in an interview: *'If you select for the national football team, then you select a forward and a goalkeeper. I think you don't select eleven goalkeepers. […] Or twenty forwards, that's not the intention, right? It all needs to be there in order to get the job done.' (participant 7, vq.07.09)* A third participant mentioned that this not a one-time exercise, but requires continuous attention: *'You should actually continuously reconsider the project team for yourself: Well, at this moment in this phase, do I still have the right people and the right team? Or do I need to change it now? […] Obviously you need to have a certain continuity, but eventually you will need to [say]: "Well, this is something I need less of now, and this is something I need more of." So even in cases where someone is performing perfectly: Well, in three months we will be in the phase and then we need to do this differently, so I have to anticipate on it.' (participant 6, vq.06.29)* So, the project manager should anticipate on future phases and pro-actively make changes accordingly.

Considering complex and risky projects, participants also mentioned the importance of having the required expertise on board or at least at arm's length of the project. One participant referred to the development of a project team: *'And slowly it became a bigger organisation that was half municipal officials, and half external staff, for the simple reason that you don't have the in-house expertise to run the project.' (participant 10, vq.10.17)* The same participant also mentioned that, instead of hiring expertise, it can also be developed: *'So, one of the things I did as a leader: I just wanted an organisation that was equipped to do this. So, we also hired people to train us. Throughout the years […] it was learning by doing, which I'm fond of, because you can't learn everything from books. You shouldn't think that you simply get everything right the first time, so*

[…] involve expertise or colleagues or experts that can help you with it or also train you.' (participant 10, vq.10.18) Training, learning by doing and involving others are mentioned as ways that expertise can also be achieved. Another participant, referring to the front-end of a project, stated: *'And then we spoke to a number of people: "Where is the know-how?" […] And that means that at that moment you try to gather everything. So: This is the assignment. This is the know-how that is required and make sure that you have mobilised it. Then you already have it.' (participant 7, vq.07.07)* This does not necessarily refer to the team members, but this statement implies that contact is established pro-actively prior to the moment is may be required.

Although not specifically mentioned in the previous statement, the same participant later seems to relate the mobilisation of expertise to the problem-solving ability of the project team. Referring to an event with negative impact on the project, the participant stated: *'That was a risk that we had not foreseen. What you do at that moment is to stabilize very quickly. So, getting the know-how on board. "What do I have to do?" Stabilize quickly. Which we did. […] So, you actually resort to: Have I maximized by problem-solving ability? Do I have everything in my team, or at arm's length, to gather for these kinds of things?' (participant 7, vq.07.06)* Maximizing the problem-solving ability is related by the participant to quickly solving issues when they arise. The importance of this was further stressed by the participant: *'It is important to eventually, what I call, maximize the problem-solving ability in your team. Maximize your problem-solving ability. If your problem-solving ability in a team […] is maximized, then you can never do more than that. […] You did what you could.' (participant 7, vq.07.10)* The participant also seems to note that it is importance to maximize the problem-solving ability, because otherwise the team may have been better equipped to deal with issues. Another participant also explained why the problem-solving ability is important in complex projects: *'If I know it is a complex project and I know I'm going to get problems, but I don't know which ones, so, what to control then [?], then I start to focus on other things. Then I focus on the problem-solving ability of the group. Then I focus on: Are all disciplines on board that may help me in the future? Can they cooperate? Is the problem-solving ability at the best level? I'm not going to solve it. I don't even know what is going to come at me. Then I very much focus on the team.' (participant 4, vq.04.05)* This statement also refers to pro-actively mobilising know-how and addressing the problem-solving ability, because it is difficult to predict what issues may arise.

Realizing viable agreements

The leader dimension realizing viable agreements was brought forward as part of the focus group session and two interviews. It can be described as making agreements that are viable for both sides and maintain the effort to ensure their fulfilment.

Referring to making clear agreements during the focus group session, one participant stated: *'It's a skill, and it has a meaning. The result that you try to achieve with it, is that you, as project manager, know how your project is doing at all times. That's the core of what you're trying to achieve. […] And I believe that this requires making clear agreements and that you address people regarding meeting those agreements.' (participant vq.02.16)* The participant advocates that the main reason for making clear agreements is that it helps the project manager to know the status of the project. In addition to making clear agreements, meeting them is something that should be addressed.

The same participant explained that formalized agreements are not necessarily clear agreements. The participant stated: *'What you often see within projects is that people believe they have made clear agreements when a contract is in place. And I believe that this is fundamentally incorrect.' (participant 2, vq.02.17)* This notion was supported by another participant, who referred to an unreasonable agreement in a contract: *'Well, it's a superb contract. Or, it's a contract at least, but that's not an agreement, not an interpersonal agreement. Because you both know that it's nonsense and you'll end up using lawyers and you'll say: "It was due to your late supply of information." "No, it was due to your ineptitude. You underestimated it." Whatever. It's a contract. It's a good contract. It's an incredibly bad interpersonal agreement, because you're fighting each other on a case that is nonsense.' (participant 3, vq.03.10)* In this example, parties entered into a contract, knowing that the

agreement was not viable and would lead to conflict. Another participated summarized such agreements as follows: *'Nice on paper, but you know that, in reality, it will never work. […] So, to have a sense for: Well, he says yes, but that can never be correct.' (participant 6, vq.06.27)* This implies that it is important that the project manager is able to assess the viability of agreements. The danger of having unviable agreements that lead to conflict was also stressed by the participant: *'Something which is an absolute no-go is: That you have all kinds of contractual… With this type of projects, you should never have heavy […] contractual discussions. That is far too dangerous in this sort of projects.' (participant 6, vq.06.28)* The importance of preventing conflict with other parties was also stressed by another participant: *'I always say: A contract, that's formalized distrust. If you continuously have the contract on the table and you say: "Yes, but that's not what we agreed, you should be doing it like this." If that keeps happening, well, people get annoyed. If the contract stays in the drawer and you can talk about cooperation, then I think you're doing a better job.' (participant 10, vq.10.08)* The participant implies that cooperation is more important than adhering to the formal agreements of a contract. This may be read as agreements being subordinate to cooperating. However, this interpretation does not seem to be justified, as the same participant expressed that the fulfilment of agreements should in fact be actively addressed. Referring to the rule of conduct of a project that an agreement is an agreement, the participant stated: *'If an agreement was not fulfilled, then you also had to find out: Why did it not happen? And you had to say: "We don't accept this, because if you don't fulfil an agreement, or are not able to fulfil an agreement, then you warn us [in advance] and arrange mitigating measures."' (participant 10, vq.10.16)* This rule of conduct implies that making clear agreements is not subordinate to cooperation, but rather it is part of cooperating. Also considering the earlier statement of the participant, this suggests that clear interpersonal agreements are more important than indefinite adherence to formalized contractual agreements.

Analysing

The supportive leader dimension analysing was part of the focus group sessions, as well as three interviews. It can be described as distinguishing between key and side issues and assessing scenarios and their consequences, taking into account the context and stakeholders.

The ability to distinguish between key and side issues and side issues was brought forward my multiple participants. Referring to how to deal with the technical content of complex and risky projects, one participant explained: *'Regarding the technical content, for me the essence is that you're capable of reducing the complicatedness of the whole of the task, without simplifying it. So, you should reduce the complicatedness by understanding what needs to happen and ultimately reducing it to its essence and the essential things. I think that that's a skill that you should have as a project or program manager if you're leading such a complex project.' (participant 9, vq.09.07)* This implies that within complex projects, the project manager should be able to determine what topics are essential. When asked about the difference between reducing complicatedness and simplifying, the participant replied: *'You can give an assignment to someone and say: "Don't ask difficult questions. Just do it. Just execute it. I just want you, I just want you to build a wall there." And, when you're simplifying, you don't want to hear the "yes, but". But, ultimately, it is all about the "yes, but". […] It's not easy to reduce complicatedness. And I think it's a skill of real leaders to do this in the end.' (participant 9, vq.09.08)* Later, the participant added: *'You want to have the discussion. In the example I gave: If we are going to build a wall there, what do we need to take into account?' (participant 9, vq.09.09)* The difficulty in this discussion is to be able to understand what items are essential, explained by the participant as follows: *'So, one way or another, you need to be able ask the right questions. […] To weight the answers. And in the and you need to understand: What are the essential questions that we need to answer as a project? And, well, there's quite a tension there. As I said: Reducing complicatedness without simplifying.' (participant 9, vq.09.10)* This suggests that the project manager needs to assess what questions should be asked and answered, and how to weight the answers. The notion that a number of questions and their answers are essential, and others are not, was supported by another participant: *'During the project decisions will have to be taken, for which you need to assess: What are the key issues and what are side issues? What are the facts on which I need to base a decision in the project?' (participant 2, vq.02.07)* In addition to questions, the project manager should also be able to

assess which signals require attention, and which ones are less relevant. As one participant stated: *'To sense very well: Now something is really the matter, and this is something that I can ignore. […] That's very important.' (participant 6, vq.06.20)* The importance of differentiating between key issues and side issues was further stressed by the participant as follows: *'Don't come bringing nonsense, let me put it that way. I think that the quality is to really be able to distinguish between key and side issues. So, they know: Well, if the project manager is coming to me, then I know that it is my job to really deal with it. I think that this is important.' (participant 6, vq.06.22)* This suggests that being able to make the distinction is important to remain credible when making an appeal to others.

Although analysis was found to be of continuous importance, it was suggested that at the front-end of a project an in-depth analysis is important. Referring to the front-end of complex and risky projects, as part of the focus group session one participant stated: *'You have to assess: Where is the complexity? What is making it complex? Is it the number of parties that is involved with opposing interests or different positions? Is that complex? Or is it the risks that is making it complex?' (participant 5, vq.05.02)* Another participant replied: *'On the basis of this [assessment], I determine what style of leadership and project approach I apply. On the basis of a very in-depth analysis of the case, both of the project and the context in which the project takes place, so, also the business of the client.' (participant 4, vq.04.06)* These statements imply that it is important to make an in-depth analysis of the complexity based on the project and its context, in order to determine the appropriate leadership style and the project approach. During an interview another participant stated: *'So, keep asking questions on the one hand to come to the causes and when the analysis is in sight, to act on it. […] Act on it proactively. So, you could say that I give myself the space to make an in-depth analysis and on the other hand to quickly act on it.' (participant 8, vq.08.06)* So, this participant also supports allowing oneself to make an in-depth analysis, followed by action.

Analysing was also found to be related to assessing scenarios by multiple participants. In relation to risks, actively thinking about the consequences and mitigating actions of risks was found to be important. Referring to how to deal with complexity, one participant stated: *'That also requires [to think about]: What if this goes wrong? So, to continuously have that risk matrix in your head. What is does wrong? How bad is it?' (participant 6, vq.06.01)* This was also expressed by another participant. After being asked what is required when something goes wrong, the participant replied: *'Above all, it requires that you have already thought about the scenario that should be set in motion.' (participant 12, vq.12.06)* Both statements support the view that assessing the impact of risks and possible mitigating actions is important.

Lastly, assessment of scenarios was also found to be related to considering the consequences of possible interventions, taking into account context and stakeholders. One participant stated: *'It's also about scenario analysis, because you know: A significant budget overrun, five, six, seven, eight ways to deal with it. Report one-on-one, have some coffee [with someone], wait for the steering committee [meeting], everything is possible. [And] everything has its consequences and can be the best option, or be perceived as the best option, in a certain situation.' (participant 3, vq.03.01)* This suggests that the project manager needs to be able to assess the consequences of multiple scenarios, in order to determine what intervention best establishes a desired effect. The same participant stated: *'Firstly, you need to be able to perform a context or stakeholder analysis in your head. [You should] even see the thickness of the lines between them: the necessity for communication. So, there's a certain necessity for communication or connecting. [For example,] it's not important that the designing party is fond of the supervisory authority. […] Between the project manager and the designer, on the contrary, there is a thick line. And between the project manager and the contractor is a thick line as well. So, you need to make that analysis in your head and you need to see where the thick lines are in that network, and where they are green and where they are red. In order for you to say: I'll let this be, this already goes well. And there is a thick line and it is red, well, I need to resolve that. So, there's a tremendous need for communication, but there isn't any [communication]. Then I'll act on that first.' (participant 4, vq.04.10)* This example also shows that the project manager should be able to assess what interventions are required in order to influence for the sake of appropriate behaviour.

Courage

The supportive leader dimension courage was brought forward during the focus group session and in two interviews. It can be described as overcoming doubts and fears, despite an awareness of the risks and possible opposition involved.

During the focus group session one participant described courage by explaining the difference between courage and boldness: *'For me, there's a difference. I read that book: the factor courage. I found it fascinating. Boldness is crossing the ocean in a rowing boat, that's simply irresponsible, reckless. And courage is seeing the risks completely, knowing that you don't control it all, but doing it anyway.' (participant 4, vq.04.11)* This description suggests that being aware of the associated risks, and being able to do what is required regardless, is a distinctive feature of courage. The participant later provided several examples of showing courage: *'Simply addressing people regarding their behaviour. That can happen on a very basic level. That's the first exercise in courage. But also expressing what you feel, that also takes courage. If you're in a meeting or a conversation and say: "This doesn't feel right." That's courage. It starts small.' (participant 4, vq.04.14)* This example shows that courage can also be associated with relatively small actions, which in this case is related openly showing that you are not feeling comfortable.

Courage was found throughout other leadership concepts. Most notably courage was found to be related with reflecting openly, influencing and acting independently. In addition to the previous statement, two other statements associated with reflecting openly relate it to courage. Referring to reflective conversations, one participant argued: '*It starts with having the courage to pay attention to it.' (participant 10, vq.10.10 partial)* Another participant said that the project manager should dare to show dependencies: *'There are always things that you're dependent on, and you should dare to show it.' (participant 8, vq.08.05 partial)*. Three statements associated with acting independently explicitly mention either courage or daring to do something. One participant stated: *'So, once you've figured it out: Now I'll need to act. […] That takes courage.' (participant 2, vq.02.05 partial)* Another participant stated: *'Saying what you think isn't necessarily always helpful, but you have to dare make a point if you believe something isn't right.' (participant 8, vq.08.04 partial)* Related to making mistakes, another participant stated: *'So, you also need to have the courage to make a mistake in front of everybody from time to time.' (participant 4, vq.04.07 partial)* Lastly, one statement associated with influencing, and more specifically role modelling, was related to courage: *'[…] the project manager has to make the leap first: showing vulnerability, expressing his emotions, showing courage, giving the example. (participant 4, vq.04.13 partial)* Although showing courage is explicitly mentioned as an item, the expression *making the leap first* suggests that the project manager also needs to overcome boundaries in some way when being a role model.

Humility

The supportive leadership dimension humility was an implicit subject during the focus group session and the subject was raised in four interviews. It can be described as not having an inflated ego or being boastful, and being open to the input and interests of others.

During the focus group session, one participant replied to a statement about the need for considering the overall interests in addition to the project interests: *'And then it helps if you have a small ego.' (participant 4, vq.04.15)* Although humility was not discussed to great extent during the focus group session, the importance of it was implied during the discussion about taking into account the overall interests. For example, '*you can look beyond your own confined project issues,' (participant 3, vq.03.06 partial)* implies that you need to be able to put yourself second.

Three other participants brought up the topic of humility during the interviews for different reasons. One participant stated: *'You will also need humility, because you don't know it all. Sometimes you see that this is what goes wrong [in projects]. So, maybe, that's another important component. You need to be humble in a way and accept that you need the knowledge and insights of others to eventually come to something good.' (participant 9, vq.09.11)* The reasoning depicted here is that humility helps the project manager to accept the input of others, which is important because that input is required for achieving a good end-result. This view is

supported by a statement of another participant, who, referring to being able to adopt different styles, mentioned: *'Also to be very receptive to situations where there is being brainstormed. When the knowledge, abilities and skills of the people in the department need to surface. Then you, as a project manager, should simply take a step back and you need to listen.' (participant 11, vq.11.01)* Another participant expressed the believe that dominant know-all leaders can have a negative impact: *'If you present yourself as someone that knows it best, you'll not be able to run such a project. I'm really convinced of that. I also think a number of projects were simply affected by a much too dominant leader. Someone that was above it all, so to speak. And I say: "I'm standing amongst it all."' (participant 10, vq.10.12)* Although humility or ego are not explicitly mentioned by this participant, it is implied that the project manager should take care not to come across as knowing everything best and not to be too dominant, which may be considered to be opposite of humility. Another participant did explicitly mention humility and ego: *'What I think is important, is not to have an inflated ego, vanity, or those kinds of things. You need to have a certain humility and you need to have fun in your work. Not in making the cover of a magazine. Why? Because in the end the project is owned by the project sponsor. So, a project manager, the first feature is that he is not first in line. […] A certain humility, or not to be too vain, is really important. It is really important because vain project leaders make the mistake of making the project theirs.' (participant 7, vq.07.04)* This suggests that project managers with big egos are more likely to identify themselves with the success of the project. Later the participant continued: *'It may be fun to make a big deal out of yourself, but when you leave it to others, it also makes you less vulnerable. And with that, I think it's also calmer for yourself.' (participant 7, vq.07.05)* This statement indicates that the danger of identifying oneself with the success of the project makes the project manager more vulnerable and also less calm.

Emotional resilience

The supportive leader dimension emotional resilience was discussed in the focus group session and during two interviews. It can be described as maintaining steadiness and confidence during times of hardship.

Two participants expressed that handling times of hardship is especially relevant in highly complex and risky projects, because of the higher likelihood that hardship will be encountered in such projects. One participant stated: *'I think that in every project, but especially with these kind of things [complexity and risk]… Because things will happen that you would never had foreseen, that you will have to deal with.' (participant 6, vq.06.11)* Another participant also stated that things may go wrong in complex projects and explained that the project manager needs to accept that fact: *'You need to be at peace with that to some extent. […] Especially if you talk about the context of very complex projects, well, they can go wrong, so to speak. Cost may be more than everybody had hoped, or time, that can happen. […] It is not an impossibility.' (participant 7, vq.07.08)* So despite efforts to prevent issues, this implies that the project manager needs to acknowledge and accept that difficult times will most likely befall the project.

During the focus group session, multiple participants expressed the importance of maintaining a certain steadiness during hardship. Difficult times may require unpopular decisions or keeping a group adhering to a planned course. One participant used a quote to express this point: *'One thing of Churchill entered my mind […]: "If you think you're going through hell, just keep going." […] If you think you can correctly predict the curve of a project or if you are a good leader, then you know, as someone already said, that you may be unpopular for half a year or a year, for the sake of better much better times for everybody and that it is good for the project.' (participant 3, vq.03.07)* Other participants supported this statement. One participant replied: *'You repeatedly encounter situations that are difficult, and to then adhere to what you had planned… For me that is really a feature, an element of leadership.' (participant 5, vq.05.03)* Another participant added: *'Yes, during the project: You set out the course, and then you have to make sure that everybody adheres to it as much as possible.' (participant 2, vq.02.08)* These statements imply that the project managers should be able to adhere to a plotted course if convinced that this is right, also during hard periods of time.

In order to remain confident, one participant suggested that first-hand experience with times of hardship is important. Replying to a statement about knowing that better times will eventually

come, one participant stated: *'That's related with life experience, wisdom almost. If you experience hardship for the first time in your life, even at the age of 45, you're scared to death. […] Maybe you've only read about it, but experiencing it first-hand…' (participant 4, vq.04.02)* The participant suggests that knowing that better times will eventually come may not be sufficient, and first-hand experience will help the project manager in maintaining confidence. During an interview, one participant explained that maintaining confidence as a group is important and suggested that forcing small breakthroughs can help: *'Sometimes you have to force breakthroughs. So, by simply going for it. Well, making sure that people keep confident, despite setbacks, not just for yourself, but especially as a role model: Ok, it will succeed. I will not be unsettled, it will succeed. I think that that is crucial. Especially towards your project team, but also to the outside world.' (participant 6, vq.06.12)*

4.2 Respondent validation findings

An initial conceptual framework and descriptions of the concepts and their relations were presented to the participants of the focus group and feedback was collected as described in section 3.2. All participants indicated that in general they recognized the proposed concepts and relations. One participant mentioned that there were *'quite a few relations' (participant 5)* in the conceptual framework, but acknowledged that this may be justifiable and even suggested some additional relations. The respondent validation findings, which were used to come to the definitive conceptual framework and descriptions, are presented in this section. In some cases, literature to support the decisions to adjust the conceptual framework is referred to in this section (instead of the discussion section) for the sake of readability.

General and refining comments

Three general comments were made with regard to the presented findings. One participant stated: *'At first the thought crossed my mind that a strong focus on the end result is lacking [in the model]. However, in complex and risky environments it is more important that projects are stable and reliable, and the end result may change. Too much pressure on the end result may even lead to concessions on stability and reliability.' (participant 5, vq.05.06)* This is support for the notion described earlier that there is a tension between focusing on result on the one hand and giving space for new insights on the other hand (refer to vq.09.06). The findings seem to support that this should be viewed as a balance, rather than a choice between the two. This comment is not contradictory with the earlier findings, and therefore no changes were made to the conceptual framework. On another note, one participant commented: *'Furthermore, something that applies in general is that when people feel valued, have fun, and enjoy their work, this leads to much better individual performance and better cooperation. This is also a contribution of the environmental dimensions to project success.' (participant 4, vq.04.19)* The importance and positive effects of people finding joy in their work were also expressed earlier by other participants (refer to vq.02.04, vq.10.14 and vq.10.01). This is noteworthy, because it may be one of the mechanisms by which effective leadership adds to performance. Fun, or pleasure, was indeed also found by de Vries and Florent-Treacy (2002) to contribute to performance in a study involving global leaders. This gives reason for speculation, but it was mentioned during only two data collection occasions (excluding respondent validation) and therefore further enquiries are necessary to come to a conclusion. Lastly, a general comment about other success factors was made. The initial framework did not include a box that clarified that besides effective leadership of the project manager, other success factors also contribute to project success. One participant stated: *'The framework can give the impression that effective leadership is the only thing that contributes to project success.' (participant 3, vq.03.13)* Although it may be self-evident that other success factors exist and contribute to project success, this has been explicitly included in the conceptual framework for the sake of clarity.

Some of the feedback was less general and consisted of suggestions for refining the conceptual framework, mainly aimed at the names and descriptions of concepts. For example, one participant suggested that one leader dimension should be rephrased: *'Acting freely can possibly be better referred to as acting independently. I associate freely with free and impulsive, and I associate independently with having overview and doing what is needed. And [being] aware of your own role in the overall picture and being able to act maturely within it.' (participant*

5, vq.05.11) Although this is simply a matter of phrasing, it is helpful if terminology is chosen such that concepts are associated with what is meant by them. For this reason, the leader dimension acting independently was rephrased, which was originally named acting freely.

Related to what acting independently entails, another participant stated: *'It is important that the project manager can make or organize decisions and forces decisions if necessary. That may be decisions that need to be taken by project team members, but also the project sponsor. This takes courage, especially to force a decision by the project sponsor. The importance of making or forcing decisions is that otherwise too many options stay open, resulting in people not knowing where they stand to a too large extent.' (participant 2, vq.02.19)* For this reason, the need to take, organize or force decisions where required was added to the description of acting independently. The same participant also added: *'Not crossing moral boundaries and maintaining integrity is important, as is already briefly mentioned in the framework. The book 'Het klopt wel, maar het deugt niet' ['Correct, but not right] describes how nowadays the focus on KPIs and performance puts increasing pressure on people to take decisions that go against their own morals. This also applies to projects and it is important to maintain your moral boundaries and integrity.' (participant 2, vq.02.20)* This is seen as part of the leader dimension acting independently and further supports the view that one should not exceed personal norms (refer to vq.02.06). It should be noted that this was expressed by the same participant, but integrity is also mentioned in leadership literature as a topic (e.g., Dulewicz & Higgs, 2005; Kirkpatick & Locke, 1991). Nevertheless, the statement stresses a point rather than adding one and therefore no adjustments to the conceptual framework were made.

Another participant responded to the apparent absence of trust in the conceptual framework: *'The concept of trust seems to be missing. You would expect this as part of reflecting openly or psychological safety.' (participant 3, vq.03.11)* In contrast with the apparent absence, trust plays a key role in psychological safety as is reflected by the findings of this study and those of Kahn (1990), which are elaborated in the discussion section. Furthermore, in line with the statement of the participant, Bennis and Nanus (2012) describe it as a central ingredient of leadership, stating that trust is the social glue that keeps any system together. For these reasons, the description of psychological safety was adjusted to more prominently make clear that trust plays an important role.

Again related to the phrasing of the name of a concept, one participant stated: *'Resource management seems a somewhat misplaced term for its description. I associate resource management with a hard skill, but [the description] is more about enabling a team to thrive. Mobilizing expertise and the problem-solving ability should be better reflected in the term.' (participant 3, vq.03.12)* The initial phrasing of this concept based on the data (i.e., project team) was intentionally aligned with the LDQ dimension resource management. Indeed, there are differences between the findings of this study and the way the LDQ describes resource management, but both concepts relate to the same topic. Rather than using a new name, using the same name provides for an opportunity to expose these differences more clearly, thereby increasing insight. For this reason, the phrasing was not modified. The differences are elaborated upon in the discussion section.

Moderating variables

Referring to the notion that project success is positively affected by the environmental dimensions, and therefore the project manager tries to establish these dimensions, one participant mentioned: *'I explicitly recognize this finding. The term environmental dimensions may be somewhat too broad. It's mainly about people and stakeholders.' (participant 3, vq.03.14)* Another participant stated: *'This mechanism also works like that in practice in my experience. The effect you can achieve directly as a project manager is limited, because you're limited by the amount of weekly working hours. By influencing your environment, more people can and will help to achieve project success. Especially for long term projects (over 12 months) it pays off tremendously to focus your energy on the environment.' (participant 4, vq.04.21)* This supports one of the notable findings of this study that environmental dimensions play a role in effective leadership and its contribution to project success. Furthermore, the statement also provides a rationale for the importance of the environmental dimensions: influencing the

environment such that more people will help to achieve project success is key, because the project manager can only do so much alone. This is especially true for long term projects as expressed by the participant, most likely because of the effort that it takes to establish these environmental dimensions for the time involved for them to pay off. In addition to the duration of the project, the participant also expressed that proximity of the stakeholders to the project is a factor that is taken into account: *'I differentiate between team members, the steering committee and users (direct project environment) and all others around it (stakeholders). The closer a stakeholder is involved in the project, the more time and effort I use to 'influence the environment', because the effect on project success is bigger. I try to convince remote stakeholders one-on-one and not via environmental factors.' (participant 4, vq.04.22)* So, the mechanism of influencing the environment in order to achieve project success is applied to a larger extent to stakeholders that are close to the project, and remote stakeholders are influenced in other ways. Summarizing, both duration of the project and proximity of the stakeholders are factors that impact the project manager's decision to focus on the environmental dimensions. Thus, they can be considered moderating variables for the relations between the leader dimensions and the environmental dimensions.

Situational leadership

After expressing an overall agreement with the findings, one participant stated: *'However, the importance of the relations [in the framework] and when which dimensions and relations are utilized to achieve project success are strongly dependent on the context: What team is available to you (and what are their strong and weak points)? What does the project require from the project team? And what does the project phase require from the project team? There is always a gap between what the team does naturally by itself on the one hand, and what is believed to be necessary (by the project manager) on the other hand. I focus my energy on this gap. To make a difference in this regard, it helps tremendously if the project manager can draw upon these dimension (with knowledge and experience) and utilize these where believed to be necessary.' (participant 4, vq.04.17)* This implies that the importance and utilization of the leader dimensions depends on the gap of the situation as-is and the desired situation. For example, if there is lack of psychological safety, the project manager may choose to focus on this dimension, which may be done through reflecting openly. However, if psychological safety is already sufficiently present but not enough care is taken not to assume or neglect, the project manager may choose to apply interventions focusing on reducing assumptions and negligence. This can be seen as support of the relation between analyzing and influencing: analysis is required to determine the gap between the as-is and desired situation, and the appropriate interventions to close that gap. This notion is support by another statement of the same participant: *'The situational [ability] (sensing what is required, doing it, and reflecting on it) is a characteristic of a good project manager and strongly contributes to project success in my experience. The more tools a project manager has, the better his ability to achieve excellent project team performance. This also means that you should not consider the [conceptual framework] as linear: it is a matter of observing and analyzing what is required, in order to subsequently perform interventions and reflect. This is something you do continuously.' (participant 4, vq.04.18)*

As part of vq.04.17, the participant also refers to changing requirements depending on the project phase. The belief that it is important to adjust the leadership style to match what is required in the project phase at hand was also supported by another participant, who stated: *'It is important that the project manager has sufficient knowledge and insight about the different phases of projects, because the appropriate leadership style depends on the situation. For example, it may be important to give sufficient space in the beginning (diverging) and in a later phase, when it is known what needs to happen, it may be important to control strictly. The project manager needs to be able to oversee this necessity and apply different styles.' (participant 2, vq.02.18)* Although the notion that, also in the case of highly complex and risky projects, leadership is situational is acknowledged and not at all contested by the researcher, it is not included in the conceptual framework. The reason for this is mainly that the general notion that leadership is situational as proposed by Hersey and Blanchard dates back as far as 1969 and is widely accepted (Blanchard, Zigarmi, & Nelson, 1993). More specifically, the notion that the appropriate leadership style changes throughout projects stages is also not new and

was explicitly proposed as part of the literature review of Turner and Müller (2005). Inclusion of this view in the conceptual framework would make it more complicated, without providing novel insights.

Relations

With regard to influencing, the central roles of influencing and psychological safety due to the amount relations was emphasized by one participant: *'I believe that influencing and psychological safety have more importance than the other dimensions. If you imagine that you omit these from the framework, then half of the relations is gone. Successfully delivering projects without these two items is indeed very difficult, while the lack of realizing viable agreements is less of an obstacle for project success in my experience. On the contrary, influence is crucial, even more important than power. Power goes hand in hand with responsibility, and influence does not. With influence you can 'invisibly' influence the result. Power is visible, making it more vulnerable.' (participant 4, vq.04.20)* Influencing is clearly stressed as an important concept. Another participant also noticed the number of relations that influencing has and supported that influencing affects the environmental dimensions: *'A lot of arrows point to influencing, and from there a lot of arrows point to the environmental dimensions. Does this mean anything? It is true that if you can influence well and in addition you also have a flexible behavioural repertoire, then this has an effect on the mentioned environmental dimensions.' (participant 5, vq.05.09)* The importance of influencing specifically in highly complex projects is supported by Müller and Turner (2010b), who found that the LDQ dimension influence is significantly higher among successful project managers of high complexity projects, compared to those of medium complexity projects. The emphasis put on influencing by the participants is noted, however it is too early to quantify the (relative) importance of the concepts, which would be something more suitable for further research.

One participant suggested several additional relations between concepts. The participant stated: *'Humility may have a bigger role and more relations. Humility makes you less inclined to make statements based on your own beliefs and judgement, and makes you more open. Because of this I also relate it to appreciating what is below the surface and reflecting openly. Humility gives space for feedback, [and] willingness to set aside your own standpoints. Humility leads to being better able to absorb differences of opinion or different visions, which leads to higher resilience (emotional resilience).' (participant 5, vq.05.07)* Humility was an unexpected finding that was brought forward in five earlier data collection occasions and will be further expanded upon in the discussion section. The participant made two other suggestions for additional relationships. The participant commented: *'If what is below the surface or the culture is to only bring positive news, then this leads to simplification, with a negative impact on care not to assume or neglect.' (participant 5, vq.05.08)* The participant also stated: *'Realizing viable agreements also helps collectivism: if you take into account the interests of other parties and this helps you to make viable agreements, then this positively affects collectivism. Pushing or crossing limits during a tender process negatively contributes to collectivism.' (participant 5, vq.05.10)* The suggested relations are not contested nor included in the conceptual framework. Instead, the fact that additional relations were being proposed by the participant during respondent validation is seen as an indicator that with regard to the relations between the concepts theoretical saturation may not yet have been reached. This is not solved by including the suggestions made by the participant, but rather by further research.

4.3 Conceptual framework

The developed conceptual framework is shown in Figure 4 and Table 4 lists all the concepts found in this study, providing the description of each concept, its relations and contribution to effective leadership in highly complex and risky projects. The descriptions of the relations also include references to the verbatim quotations on which they are based.

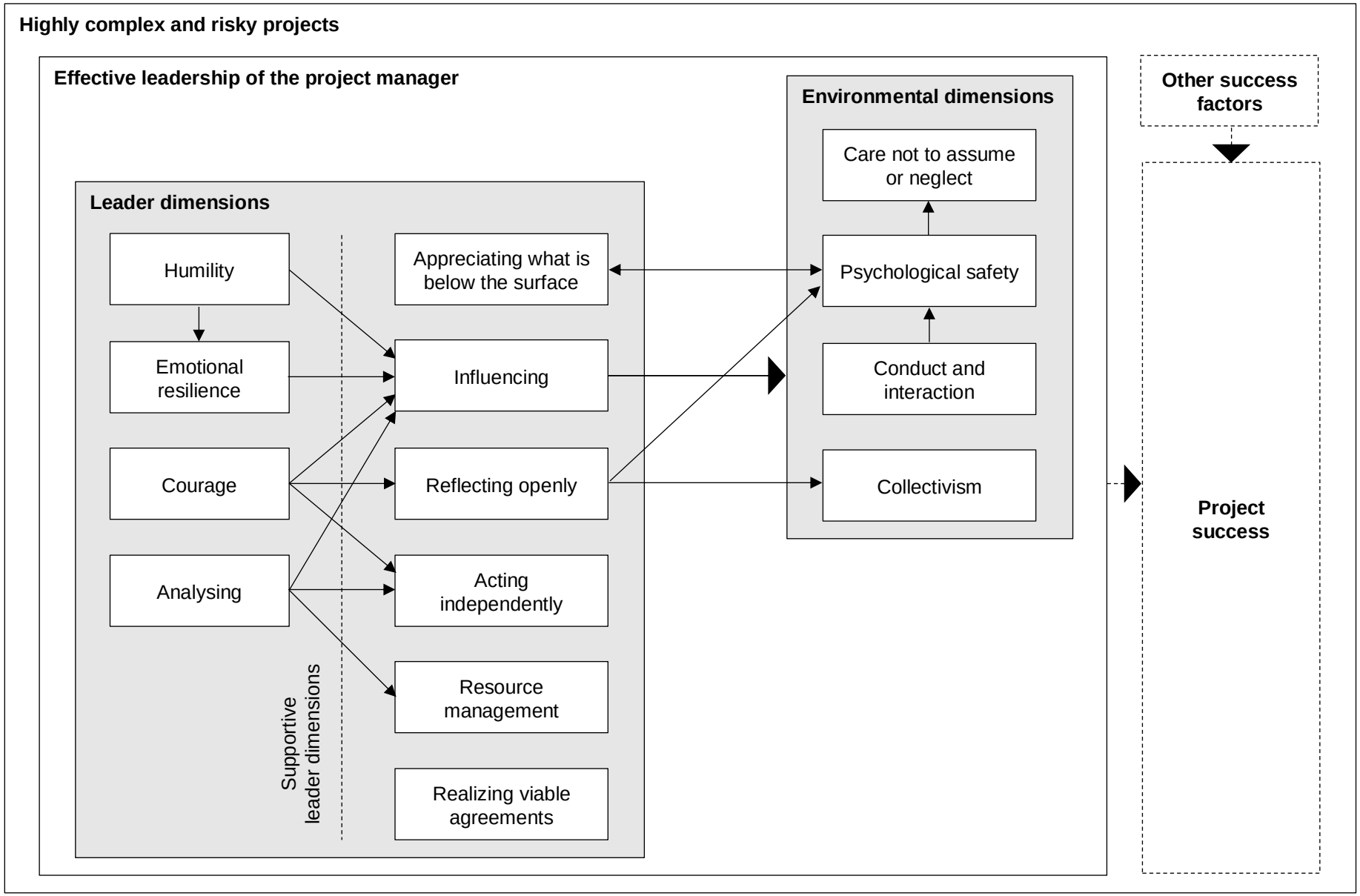

Figure 4 Developed conceptual framework

Table 4 Descriptions of concepts, their relations and contribution to effective leadership

Concept	Description	Relation to other concepts and project success
		Environmental dimensions
Psychological safety	An environment where people have the trust that they can openly share information, insights, interests, (personal) errors and issues without reluctance or the fear of negative consequences.	<u>Contribution to effective leadership in complex and risky projects</u> Sharing insights is required to come to a good end result, which is constantly required in complex and risky projects because they are less predictable. (vq.09.03, vq.09.04) Sharing interests helps to achieve overall objectives. (vq.12.09) Having one shared version of the truth contributes to the team's collective responsibility. (vq.06.03) <u>Relation to care not to assume or neglect</u> Without psychological safety, people are less likely to share detailed information, insights and errors, which can be harmful due to the potentially large consequences of details in complex and risky projects. (vq.06.04, vq.06.05, vq.09.06) <u>Relation to appreciating what is below the surface</u> Without psychological safety, soft signals and issues are less likely to be shared, making it difficult to observe and resolve them. (vq.02.01, vq.05.01)
Care not to assume or neglect	An environment where people acknowledge complexity, have a tendency to keep asking questions and investigate, and have a sharp attitude towards assumptions.	<u>Contribution to effective leadership in complex and risky projects</u> Details, unclarities and assumptions can have large consequences in complex and risky projects and therefore require extensive attention. (vq.06.09, vq.06.10, vq.08.02)
Conduct and interaction	An environment where stakeholders coordinate among themselves with an appropriate frequency and have pleasant contact.	<u>Contribution to effective leadership in complex and risky projects</u> Frequent and pleasant interaction helps to be aligned and to assist each other under difficult circumstances, which is especially relevant in complex and risky projects because they are less manageable and bring more pressure and stress. (vq.06.26, vq.07.03, vq.10.07) Pleasant interaction increases the joy that people have in their work, thereby increasing performance. (vq.02.04, vq.10.14) <u>Relation to psychological safety</u> Judgemental or aggressive interaction may increase the fear for negative consequences of sharing openly. (vq.12.05)
Collectivism	An environment where stakeholders approach each other with empathy, and sincerely take into account the overall interest and the perspective of others into one's own considerations.	<u>Contribution to effective leadership in complex and risky projects</u> Taking into account overall interests helps to achieve better results for the whole and prevent failures. (vq.03.06, vq.03.08, vq.06.25) To approach each other with empathy helps to create mutual understanding. (vq.10.02, vq.12.10)
		Leader dimensions
Appreciating what is below the surface	To observe soft signals and issues, acknowledge their importance and make effort to resolve them.	<u>Relation to psychological safety</u> If soft issues are not observed, acknowledged and resolved, people become more reluctant to share. (vq.06.13, vq.10.01)

Concept	Description	Relation to other concepts and project success
Reflecting openly	To show vulnerability and reflect openly on the behaviour of oneself and others on personal and group level.	Relation to psychological safety Publicly showing vulnerability gives others the trust that there is safety to do so. (vq.06.16, vq.09.01) Relation to collectivism To openly reflect with others prevents them from exhibiting secluded behaviour with an emphasis on self-interest. (vq.03.08, vq.04.09)
Influencing	To alter environmental factors and the behaviour of others by role-modelling and applying interventions.	Relation to environmental dimensions (four) Role-modelling invites others and makes it possible to credibly ask others to exhibit certain behaviour. (vq.02.12, vq.04.13, vq.06.02, vq.06.30, vq.09.02, vq.12.09) Applying interventions can alter behaviour and environmental factors through establishing interaction, establishing and stressing the importance of norms and keeping important topics top of mind. (vq.02.04, vq.03.03, vq.03.09, vq.04.03, vq.06.14, vq.07.02, vq.12.05, vq.12.10)
Acting independently	To take, organize or force decisions where required and to take the right course of action, even in the light of opposing forces and pressure.	Contribution to effective leadership in complex and risky projects Withstanding forces and pressure to perform actions that exceed personal norms helps to maintain integrity. (vq.02.06) Daring to stand up for what is required for the project helps to balance the goals and responsibility on the one hand, and the provided means and authority on the other hand. (vq.02.05, vq.02.09, vq.02.06, vq.04.12)
Resource management	To mobilize the required expertise and maximize the team's problem-solving ability throughout different phases.	Contribution to effective leadership in complex and risky projects Having mobilized the required expertise and maximized the problem-solving ability helps to solve (unforeseen) issues, which are more likely to arise in complex and risky projects. (vq.04.05, vq.07.06, vq.07.10)
Realizing viable agreements	To make agreements that are viable for both sides and maintain the effort to ensure their fulfilment.	Contribution to effective leadership in complex and risky projects Making agreements that are viable for both sides prevents conflict. (vq.03.10, vq.06.27, vq.06.28, vq.10.08) Making agreements that are viable for both sides helps to ensure their fulfilment and remain in control. (vq.02.16, vq.10.16)
		Supportive leader dimensions
Analysing	To distinguish between key and side issues and to assess scenarios and their consequences, taking into account the context and stakeholders.	Relation to influencing Assessment of scenarios and their consequences helps to determine what interventions are most appropriate to establish a desired effect. (vq.03.01, vq.04.10, vq.04.17, vq.04.18) Relation to acting independently Assessment of scenarios and their consequences helps to determine the appropriate course of action or approach. (vq.02.07, vq.04.06, vq.08.06, vq.12.06) Relation to resource management Assessment of the (potentially) required knowledge throughout different phases is required to mobilize expertise and determine the appropriate team composition. (vq.02.15, vq.06.29, vq.07.09)

Concept	Description	Relation to other concepts and project success
Courage	To overcome doubts and fears, despite an awareness of the risks and possible opposition involved.	Relation to reflecting openly Publicly showing vulnerability may invoke the fear of harming one's own position, which must be overcome. (vq.04.14, vq.08.05, vq.10.10) Relation to influencing To have to make the leap first may invoke doubt and fear, which may need to be overcome for the sake of role-modelling. (vq.04.13) Relation to acting independently Opposing forces and pressure may invoke doubt and fear, which must be overcome. (vq.02.05, vq.04.07, vq.08.04)
Humility	Not to have an inflated ego or be boastful, and to be open to the input and interests of others.	Relation to emotional resilience To put less emphasis on oneself contributes to being less vulnerable and calmer, increasing one's resilience. (vq.07.04, vq.07.05, vq.05.07) Relation to influencing A personal tendency to be open to the input and interests of others helps to increase collectivism through role-modelling. (vq.03.06, vq.04.15, vq.09.11, vq.10.12)
Emotional resilience	To maintain steadiness and confidence during times of hardship.	Relation to influencing Maintaining steadiness and confidence helps to guide others through times of hardship and remain on a plotted course, which is especially relevant in complex and risky project because chances that hardship will be encountered are higher. (vq.02.08, vq.03.07, vq.05.03, vq.06.11, vq.06.12, vq.07.08)

5 Discussion

In this section the findings are discussed. The classification of the concepts found in this study and existing classifications are reviewed in section 5.1. Then, the concepts themselves are compared with existing theory in section 5.2. The relations found in this study are elaborated upon in section 5.3.

5.1 Classification of concepts

As part of the developed conceptual framework, the concepts found in this study have been classified as either environmental dimensions or leader dimensions, four of which are supportive. This section aims to expand on this classification and existing classifications of leadership concepts.

One of the notable findings of this study is the use of four concepts related to the project environment, the environmental dimensions, by experienced project managers and their line managers in explaining effective leadership of the project manager in highly complex and risky projects. Environmental, in this sense, should be construed as the working environment within and closely around the project (refer to vq.03.14, vq.04.22). The LDQ has been the most prominent instrument used in literature for assessing effective leadership of project managers in different contexts (Müller et al., 2012; Müller & Turner, 2010b; Geoghegan & Dulewicz, 2008; Müller & Turner, 2007). Although some environmental aspects are included in the descriptions of the LDQ dimensions (e.g., sensitive to stakeholder needs as part of the description of strategic perspective), no environmental factors or dimensions are separately defined or explicitly acknowledged as part of assessing leadership by Dulewicz and Higgs (2005). However, this study has found that establishing these four environmental dimensions plays an important role in the leadership considerations of project managers in highly complex and risky projects, and that they are especially important for stakeholders with proximity to the project and in projects with long durations. The conceptual suggestion that the project manager has a leading role in creating an effective working environment was made in the initial article about project management leadership of Müller and Turner (2005), but was not studied explicitly afterwards. The findings of this study indeed support the notion that establishing environmental dimensions is part of effective leadership. This new class of dimensions can prove to be a valuable contribution to the understanding of effective leadership in highly complex and risky projects, and may even be considered in measuring leadership. For example, the overall ability of the project manager to establish psychological safety may be an interesting measure for leadership, considering the relevance of the environmental dimensions in explaining effective leadership.

With regard to the classification of the leader dimensions, several different classifications are used in literature. For example, the LDQ differentiates between intellectual dimensions (IQ), managerial dimensions (MQ) and emotional and social dimensions (EQ) (Dulewicz & Higgs, 2005). In their article, they also refer to a model of Higgs of 2003, which separates competence areas and personal characteristics. Yet another classification to which Dulewicz and Higgs refer to in their article is that of behavioural, cognitive and personality factors (de Vries & Florent-Treacy, 2002). With regard to these different classifications, no well demarcated descriptions or definitions are provided against the classes (de Vries & Florent-Treacy, 2002; Dulewicz & Higgs, 2005). Furthermore, the rationales behind these classifications are not well explained. The issue with adopting such classifications is that the classification in itself is arbitrary, and the allocation of concepts to the different classes may be arbitrary as well due to lack of definition. For example, one may argue that acting independently should be classified as a managerial dimension, whilst someone else may provide an equally justifiable argument for classifying it as an emotional and social dimension. Another issue is the inconsistent and interchangeable use of classifying terms in literature. For example, despite providing a definition of personality and stating that personality attributes are relatively stable, Müller and Turner (2010a) seem to use personality interchangeably with competency (e.g., the combination of the scores on the 15 LDQ dimensions is referred to as a personality profile). Also, Dulewicz and Higgs (2005) refer to the 15 LDQ items as dimensions and competencies interchangeably. Although not explicitly stated by one of the mentioned authors, these inconsistencies may be explained by

that these classifications can seemingly be plotted on different axes. Whereas IQ, MQ and EQ simply seem to be classes that differ in nature but exist on the same level, the differentiation between competence areas and personal characteristics of Higgs can be seen as plottable on an axis with competence areas, which are developable, at one extreme and personality characteristics, which are stable and less developable, at the opposite extreme. This is acknowledged by Dulewicz and Higgs (2005), who state that one may expect that some personality factors are related to some LDQ dimensions, thereby recognizing that personality versus competency and their IQ, MQ and EQ classification are different ways of looking at the same dimensions. Indeed, they found that the LDQ dimensions emotional resilience and conscientiousness significantly correlate with the five-factor model (FFM) personality factors emotional stability and conscientiousness respectively, and other LDQ dimensions do not have a significant correlation with FFM personality factors. However, if one adopts the notion that personality factors are relatively stable (Geoghegan & Dulewicz, 2008; Müller & Turner, 2010a), then in the case of emotional resilience this seems to conflict with one of the findings in this study. The ability to remain confident and not panic during times of hardship was associated with experience by one of the participants: *'That's related with life experience, wisdom almost. If you experience hardship for the first time in your life, even at the age of 45, you're scared to death. […] Maybe you've only read about it, but experiencing it first-hand…' (participant 4, vq.04.02)* This one statement does not necessarily proof that emotional resilience is not a stable trait and is in fact developable, but it does illustrate the point that consensus with regard to developability is difficult to attain. Summarizing, there are substantial issues with adopting these existing classifications, including arbitrariness, lack of definition and inconsistent use.

For these reasons, none of these existing classifications from literature were adopted in the conceptual framework of this study and rather the ten concepts associated with the leader as a person (not being an environmental factor) have all been classified as leader dimensions. The only distinction that is made within the leader dimensions is that some have a supportive nature. That is, their value is explained either through other leader dimensions or by that they facilitate other leader dimensions. For example, humility was found to contribute to collectivism through the influencing mechanism of role-modelling. Courage is an example of a leader dimension that facilitates other leader dimensions (e.g., reflecting openly requires courage). Thus, supportive leader dimensions can be described as not providing value by themselves, but providing value though or by facilitating other leader dimensions. This distinction may contribute to a better understanding of the mechanisms through which leader dimensions have value.

5.2 Concepts

As one may expect, the concepts found in this study show some common ground with existing concepts in literature. In fact, in some cases the names given to the concepts in this study resulting from open coding were changed in the process of defining them in order to increase alignment with existing literature: trust and openness was changed to psychological safety, humbleness was changed to humility, dealing with hardship was changed to emotional resilience and project team was changed to resource management. This section explores the most noticeable similarities with concepts in existing literature in order to identify where the findings of this study enrich, support or conflict with existing theories. Similarities with the LDQ, this being the main instrument used in literature for assessing effective leadership of project managers as stated earlier, will be described first, followed by other literature.

Leadership dimension questionnaire

Although based on terminology it may be expected that the LDQ dimension critical analysis and judgement resembles the leader dimension analysing, it seems to more closely resemble the environmental dimension care not to assume or neglect. Critical analysis and judgement is defined in the LDQ as follows:

> A critical faculty that probes the facts, identifies advantages and disadvantages and discerns the shortcomings of ideas and proposals. Makes sound judgments and decisions based on reasonable assumptions and factual information, aware of the impact of any assumptions made. (Dulewicz & Higgs, 2005)

Probing facts, discerning shortcomings, deciding based on factual information, and awareness of assumptions and their impact show similarity with asking questions, investigating and having a sharp attitude towards assumptions. The main difference is that care not to assume or neglect is defined as an environmental dimension, and therefore refers to the project environment rather than the leader, and critical analysis and judgement is aimed at the leader as a person. A contribution of this study is the notion that rather than only displaying this critical faculty oneself, the project manager should also establish an environment where others display this as well in highly complex and risky projects.

Resource management is both an LDQ dimension and a leader dimension found in this study. It is defined as part of the LDQ as follows:

> Plans ahead, organises all resources and coordinates them efficiently and effectively. Establishes clear objectives. Converts long-term goals into action plans. Monitors and evaluates staff's work regularly and effectively, gives sensitive, honest feedback. (Dulewicz & Higgs, 2005)

The LDQ definition seems to be based on the notion that the required work can be determined beforehand, using words like action plans and efficient and effective coordination. While this may be true for parts of the work, the definition proposed in this study emphasizes the pro-active mobilization of expertise and maximizing the problem-solving ability, because not everything can be anticipated, and unforeseen issues will have to be solved. The different emphasis can be explained by the context of high complexity and risk, which makes the work and arising issues less predictable. However, because parts of the work will also be plannable in highly complex and risky projects, it may be best to see the definition as proposed in this study as adding to the existing definition, rather than challenging the existing definition.

Emotional resilience is also both an LDQ dimension and a leader dimension found in this study. The definitions used for emotional resilience in the LDQ and the briefer definition used by the same authors in 2016 are as follows:

- Performs consistently in a range of situations under pressure and adapts behaviour appropriately. Balances the needs of the situation and task with the needs and concerns of the individuals involved. Retains focus on a course of action or need for results in the face of personal challenge or criticism. (Dulewicz & Higgs, 2005)
- Being able to control one's emotions and to maintain performance when under pressure. (Higgs & Dulewicz, 2016)

In this case the definitions seem to more closely resemble the description proposed in this study. Retaining focus on a course of action and maintaining performance under pressure can be seen as equivalent to maintaining steadiness during times of hardship. Thus, the findings of this study support the view of the LDQ that emotional resilience is a dimension that is part of effective leadership.

The LDQ dimension interpersonal sensitivity shows some parallels with the environmental dimension collectivism. Similar to resemblance between critical analysis and judgement, and care not to assume or neglect, one refers to the leader as a person and the other refers to the environment. Nevertheless, considering what the definitions state about how others should be approached, they seem comparable. The definitions of the LDQ and a later definition of the same authors are provided below:

- Is aware of, and takes account of, the needs and perceptions of others in arriving at decisions and proposing solutions to problems and challenges. Builds from this awareness and achieves the commitment of others to decisions and action. A willingness to keep open one's thoughts on possible solutions to problems and to actively listen to, and reflect on, the reactions and inputs from others. (Dulewicz & Higgs, 2005)
- Showing sensitivity and empathy towards others. (Higgs & Dulewicz, 2016)

Interestingly, the use of the word empathy in the definition of collectivism was chosen independently from the definition of interpersonal sensitivity of Higgs and Dulewicz (2016), and was derived from vq.06.25, vq.10.02, vq.10.04 and vq.12.10. Empathy, based on these verbatim quotations, refers to placing oneself in someone else's shoes. The similarities with the 2005 definition of interpersonal sensitivity are also notable, with collectivism referring to taking into account the perspective of others into one's own considerations, and interpersonal

sensitivity referring to taking into account needs and perceptions of others in arriving at decision and solutions. Whereas environment and stakeholders are explicitly mentioned in the definition of collectivism, interpersonal sensitivity as defined by Dulewicz and Higgs (2005; 2016) implicitly refers to the leader. Thus, one of the contributions of this study to existing literature is that it found that experienced project managers and their line managers show a believe that in highly complex and risky projects not only the leader, but all stakeholders should show this behaviour, and that the leader should influence its environment to establish this.

Based on the terminology, one may expect the LDQ dimension influence and the leader dimension influencing found in this study to be similar. The definitions used in the LDQ and the later definition of the same authors are provided below:

- Persuades others to change views based on an understanding of their position and a recognition of the need to listen to this perspective and provide a rationale for change. (Dulewicz & Higgs, 2005)
- The ability to influence and persuade others to accept your views or proposals. (Higgs & Dulewicz, 2016)

These definitions suggest that the aim of influencing is to get others to accept your views, whereas the leader dimension influencing found in this study proposes an aim of altering environmental factors and behaviour of others. Despite being alike in name, the concepts seem to differ fundamentally in what they aim to establish. This is a noteworthy finding of this study and can be considered a contribution to the existing view on influencing. Considering the moderating variables of influencing found during respondent validation (i.e., stakeholder proximity and project duration), one could hypothesize that for remote stakeholders and short project durations the aim of influencing shifts towards the LDQ definition, and for close stakeholders and long project durations the description proposed in this study is more valid.

Other literature

As mentioned in the findings section, humility as a leader dimension was an unexpected but broadly mentioned finding. Humility is a concept that can also be found in leadership literature not specifically aimed at project managers. Vera and Rodriguez-Lopez (2004), who propose that humility is a critical strength for leaders, state that humble leaders, among other things, are open to new paradigms, acknowledge their limitations and ask for advice. This is in line with the findings of this study that humility includes not being boastful and being open to input of others. Furthermore, they mention that the finding that exceptional performance was related to humble CEOs was unexpected, because humility was not commonly associated with successful leadership. Collins (2006), who also acknowledged the importance of humility for leaders, also noted that this was an unexpected empirical finding of his study. In this study, it was also unexpected to find this concept, which was raised as a subject in five of the eight data collection occasions (excluding respondent validation). So, this study supports the notion that, although perhaps unexpected, humility is a concept that should be acknowledged as relevant for leaders.

With regard to the environmental dimensions, psychological safety was initially called trust and openness, but was rephrased to psychological safety to align with the concept as proposed by Kahn (1990) due to the resemblance between the concepts. Furthermore, the definition proposed in this study is partly derived from Kahn, adopting the wording that one does not have the fear of negative consequences. Although the description of the concept as proposed in this study was derived from the collected data, the wording of Kahn in describing psychological safety accurately represented what was found in this study. Both trust and openness, found to be key aspects within psychological safety in this study, are reflected in Kahn's view of psychological safety, who states that people feel safe in situations in which they trust that they would not suffer from negative consequences, and people feel safer in climates characterized by openness (Kahn, 1990). Also, the notion that continuously being predictable helps to establish trust as mentioned by one participant (refer to vq.09.02) is supported by Kahn, who mentions that unpredictability and inconsistency of management leads to fear.

More recent studies also include some findings that can be related to the findings of this study. Zhu and Mostafavi (2017) studied project emergent properties (i.e., absorptive, adaptive, and

restorative capacities) and project complexity. What they found to contribute to adaptive capacity (i.e., ability to quickly adapt to new situations) and restorative capacity (i.e., ability to recover from disruptions due to complexity) resembles some of the findings of this study. They found that, amongst five other factors, information sharing, and collaboration are two closely related factors that contribute to adaptive capacity. Due to high levels of interdependency in complex projects, a single adaptation might affect other stakeholders, making it key that everyone is made aware of a new situation as soon as possible. This can be seen as support for the notion that the environmental dimensions psychological safety, as an enabler for people to share information, and conduct and interaction, as a measure for actual frequent coordination among stakeholders, are important in complex projects. Also, Zhu and Mostafavi (2017) found that timely reaction and good relations with stakeholders are key to restorative capacity. According to their interviewees, people are more responsible and willing to help each other out in hard times when good relationships are maintained. This has close resemblance to what is expressed by participants as part of conduct and interaction in this study (e.g., vq.10.07, vq.07.03).

Another recent study by Bjorvatn and Wald (2018) investigated relations between project complexity, absorptive capacity and project management performance quantitively. They found that acquisition capacity, entailing close personal interaction and mutual trust and respect between team members, helps to reduce overspending. Also, assimilation capacity, referring to the team's ability to work together across professional and structural divisions, was found to reduce delays. Again, these factors can be seen to resemble the environmental dimensions psychological safety (trust), and conduct and interaction (frequent coordination and pleasant contact). Thus, also taking into account the findings of Zhu and Mostafavi (2017), a qualitative study and quantitative study, in addition to this study, seem to support the notion that these two environmental dimensions play an important role in complex projects. Bjorvatn and Wald (2018), and Killen, Jugdev, Drouin and Petit (2012) note that absorptive capacity has received little attention in project management literature, but given the above it may be worthwhile to further explore absorptive capacity and the environmental dimensions found in this study in the context of complex projects in further research.

Particularly in relation to risk, Ramasesh and Browning (2014) propose a conceptual framework for unknown unknowns and ways to deal with them in projects based on previous literature. This study provides support, based on collected data rather than literature, for some of the notions of that study. Cultivating a culture of alertness is suggested by Ramasesh and Browning (2014) as a way to discover knowable unknown unknowns. Some proposed examples of what such a culture includes are ensuring a wide range of experiential expertise, thinking about the limits to what is known about a project, and becoming an HRO. Ensuring a wide range of experiential expertise seems to overlap with the concept resource management of this study, which includes mobilization of the required expertise. The environmental dimension care not to assume or neglect found in this study seems to overlap with thinking about the limits of what is known about a project. It also seemingly overlaps with reluctance to simplify, one of the five processes of an HRO described by Weick and Sutcliffe (2015), which involves taking deliberate steps to create a more complete and nuanced picture of what is faced. The increasing importance of these aspects as complexity and risk increase, is specifically supported by some statements (refer to vq.06.05, vq.06.09, vq.06.10) and also in line with the conceptual framework proposed by Ramasesh and Browning (2014). Furthermore, they propose that communicating frequently and effectively is also a way to deal with knowable unknown unknowns, which closely resembles the description of the environmental dimension conduct and interaction. Also related to risk, Belout and Gauvreau (2004) suggest that risky projects are more likely to encounter trouble, and that project success is significantly influenced by communication, team cooperation and trouble-shooting ability. Communication and team cooperation can also be seen as part of conduct and interaction. Trouble-shooting ability resembles problem-solving ability, which is one of the aims or resource management as found in this study. Thus, also specifically in relation to risk some of the concepts found in this study are supported by literature.

5.3 Relations

The amount of relations that were found in this study are plentiful. Although this study set out to also explore relations between the concepts of effective leadership because these are not captured by the contingency theory perspective adopted by previous project management leadership research, the level of interrelatedness of the concepts was found to be higher than expected. This supports the notion mentioned in section 2.4 that a configurational perspective instead of a contingency perspective may be more appropriate to study effective leadership of the project manager in specific contexts, because it allows to consider synergetic effects and interactions (Delery & Doty, 1996). Given that the individual relations are less broadly supported (i.e., have less verbatim quotations that can be directly linked to them) than the concepts found in this study, and theoretical saturation was not reached with regard to the relations, it must be acknowledged that the reliability and validity of the relations found in this study is lower compared to the concepts.

In addition, due to the high amount of relations, it would be very challenging to search for and present supporting literature against each of the relations. For this reason, support found in literature for some of the relations are presented below for illustrative purposes without the intention to be fully conclusive:

- Psychological safety and appreciating what is below the surface: Kahn (1990) relates psychological safety, among other psychological conditions, with personal engagement, meaning that people express themselves physically, cognitively, and emotionally. This can be seen as support for the relation to appreciating what is below the surface, as people have to express themselves emotionally as an enabler for appreciating what is below the surface.
- Humility and emotional resilience: Morris, Brotheridge and Urbanski (2005) state that humble people are more at ease with themselves and associate humility with emotional management, which is in line with the finding that humility makes you less vulnerable and calmer (refer to vq.07.05).
- Reflecting openly, and psychological safety and collectivism: Goffee and Jones (2000) note that showing vulnerability is important for leaders. It establishes trust, which is part of psychological safety, as well as a collaborative atmosphere and solidarity, which can be seen as similar to collectivism.

Instead of seeking support from literature for each of the relations found in this study, it may be wiser to first increase the validity and reliability of these findings through further (quantitative) research and then focus on the relations for which evidence is found.

As a last note on the relations, the nature of the relations, although not specifically investigated as part of this study and somewhat speculative, seems to differ. Psychological safety seems to have a prerequisite nature, meaning that without it the whole will not function. As noted earlier, Bennis and Nanus (2012) describe trust as the social glue that keeps any system together and even mention that the most glorious vision will not mean a thing is trust is low in the organization. On the other hand, some relations may be more gradual. For example, the better a leader can analyse, the better a leader may be able to determine an appropriate intervention. These would scale together rather than being black-and-white. It may be appropriate to consider the possible different natures of the relations if one would further investigate these.

6 Conclusion and Recommendations

This study has adopted a qualitative research approach with the goal to contribute to a better understanding of effective leadership of the project manager in highly complex and risky projects. Findings, based on data collected in a focus group session and interviews with project managers and line managers of project managers, were presented to participants, which together with existing literature helped to develop a definitive conceptual framework. In this section, answers to the research questions will be provided in section 6.1. This is followed by implications for theory section 6.2 and implications for practice in section 6.3. Lastly, suggestions for further research are made in section 6.4.

6.1 Conclusions

The main research question that this study aimed to answer is:

> How can effective leadership of the project manager in highly complex and risky projects be explained, according to experienced project managers and their line managers?

This section will first outline the answers to each of the sub questions and will subsequently provide an answer to the main research question.

The first sub question is:

a. What concepts are used by experienced project managers and their line managers to explain effective leadership in highly complex and risky projects?

The findings of this study generated a total of fourteen concepts that were used by experienced project managers and their line managers to explain effective leadership in highly complex and risky projects. Although classification was not part of any of the research questions, the concepts were classified as either an environmental dimension, because they referred to the project environment, or a leader dimension, for concepts that referred to the leader as a person. Four of the leader dimensions were found to be supportive, that is, their value is explained either through other leader dimensions or by that they facilitate other leader dimensions. As listed earlier in section 4.1, the found concepts are:

- Environmental dimensions
  - Psychological safety
  - Care not to assume or neglect
  - Conduct and interaction
  - Collectivism
- Leader dimensions
  - Appreciating what is below the surface
  - Reflecting openly
  - Influencing
  - Acting independently
  - Resource management
  - Realizing viable agreements
  - Analysing (supportive)
  - Courage (supportive)
  - Humility (supportive)
  - Emotional resilience (supportive)

All concepts were brought forward in at least three data collection occasions (excluding respondent validation). No comments were made during respondent validation about inclusion of additional concepts or exclusion of any the found concepts. In general, the phrasing of the concepts was based on the data. In some cases, the names of the concepts were adjusted in order to align with existing concepts from literature.

The second sub question is:

b. How can the concepts used by experienced project managers and their line managers be described?

Descriptions against each of the found concepts were synthesized from the data. These were compared with existing concepts from literature as well as presented to earlier participants as part of respondent validation, and in some cases refined as a result. The descriptions of the

concepts are lengthy and are therefore not repeated here but may be found in the second column of Table 4 in section 4.3. The descriptions provide for conceptualization of the found concepts.

The third sub question is:

c. How can the relations between the concepts used by experienced project managers and their line managers be described?

Descriptions at each of the found relations were synthesized from the data. Again, the descriptions are lengthy and are therefore not repeated here but may be found in the third column of Table 4 in section 4.3. Because the basis for the relations and their descriptions is in general less broad than for the concepts and new relations were suggested as part of respondent validation, the validity and reliability of these findings are in some cases considered lower than of the concepts and their descriptions. For this reason, references to the verbatim quotations on which the relations and their descriptions are based are included in the Table 4 to allow for traceability and transparency. Also, because the found relations were more abundant than expected, the relations were only limitedly compared with literature. As a more general note, it can be said that the concepts influencing, and psychological safety were found to have a higher level of interrelatedness compared with the other concepts, as was also mentioned by participants during respondent validation.

The fourth sub question is:

d. How do the concepts used by experienced project managers and their line managers contribute to effective leadership in highly complex and risky projects?

The value of some of the concepts was mainly explained through their relations with other concepts (e.g., reflecting openly, analysing), whereas other concepts provided contributions to effective leadership that were not related to other concepts (e.g., care not to assume or neglect, acting independently). These are also described in the third column of Table 4 in section 4.3. The same limitations of the relations and their description with regard to validity and reliability apply to the found contributions to effective leadership of the concepts and their descriptions.

Despite the limitations of the findings related to the third and fourth sub questions, they can still be considered valuable findings. Also, it should be mentioned that some of these findings do have a broad basis and therefore can be considered valid and reliable. For example, the notion that frequent and pleasant interaction helps to be aligned and to assist each other under difficult circumstances was based on statements of three participants from three data collection occasions. In another study this notion was also supported by interviewees that mentioned that people are more willing to help each other out in hard times if there is a good relationship (Zhu & Mostafavi, 2017). The validity and reliability therefore differ between the found relations and contributions to effective leadership. Nevertheless, the wide range of relations and contributions were intentionally included in order not to compromise the goal of this study (i.e., to develop a better understanding).

As for the main research question, the conceptual framework developed as part of this study shown in Figure 4 shows the found concepts and relations that help to explain effective leadership of the project manager in highly complex and risky projects, thereby providing an answer to the main research question. Table 4 provides an overview of the answers to the sub questions: descriptions against each of the found concepts, their relations to each other and their contribution to effective leadership in highly complex and risky projects. Combined, Figure 4 and Table 4 provide a condensed answer to the main research question, explaining how effective leadership of the project manager in highly complex and risky projects can be explained, according to experienced project managers and their line managers. Rather than discussing the conceptual framework in full, the main findings that contribute to a better understanding of effective leadership in highly complex and risky projects are presented below.

One of the valuable contributions of the developed conceptual framework that helps to gain a better understanding is the finding of the environmental dimensions. This is a novelty compared to the literature that assesses effective leadership of project managers in different contexts, which has been dominated by use of the LDQ (Müller et al., 2012; Müller & Turner, 2010b; Geoghegan & Dulewicz, 2008; Müller & Turner, 2007). One of the important notions related to

these environmental dimensions is that the project manager uses influencing as a way to establish these environmental dimensions, especially for stakeholders that are in close proximity to the project and in the case of long project durations. The rationale for this is that the project manager only has limited impact, and by influencing the environmental dimensions more people can and will help to achieve project success.

The notion that the project manager can increase impact by influencing the environmental dimensions also translates to the conceptualization of the environmental dimensions. In some cases, the environmental dimensions are similar to the LDQ dimensions, but reflect the project environment rather than the leader. For example, the description of the LDQ dimension critical analysis and judgement was found to resemble the environmental dimension care not to assume or neglect. Similarly, this was also the case for the LDQ dimension interpersonal sensitivity and the environmental dimension collectivism. Thus, this study contributes to a better understanding of effective leadership in highly complex and risky projects by offering the notion that for certain concepts it is not sufficient that they are displayed by the project manager, but rather the environment should be established where others display them as well.

Also, some leader concepts were found to be supportive, meaning that they added value through other leader concepts or facilitated them. In this regard, especially humility was an unexpected finding, due to the absence of similar concepts in the literature that was reviewed beforehand and because it nevertheless was broadly reflected in the data. Indeed, the authors of leadership articles that found humility as an important factor also expressed that they did not expect this finding (Collins, 2006; Vera & Rodriguez-Lopez, 2004). Instead of adopting an existing classification, the differentiation between leader dimensions and supportive leader dimensions was chosen due to, among other reasons, issues with arbitrariness when using existing classifications. This new differentiation may be a better way to look at the leader dimensions, as they provide an indication for how they contribute to effective leadership.

6.2 Implications for theory

One of the main implications for theory of this study is that in order to gain further insight in effective leadership in specific project contexts, one should carefully consider if the contingency theory perspective is appropriate. Although it has helped to increase understanding in project management leadership literature in the past, other approaches and perspectives may better help to increase it further. For example, this study has shown that by adopting an inductive approach that leaves room for new concepts and interrelatedness, new insights can be gained.

One of these insights is the role of environmental dimensions within effective leadership of the project manager in highly complex and risky projects. Taking into account environmental dimensions and the efforts of the project manager, as a leader, to establish these is a shift in focus compared to earlier project management leadership literature. Rather than mainly looking at profiles based on the LDQ, taking into account the project manager's ability to establish environmental dimensions means that new frameworks may need to be developed. As indicated by one of the participants, the effect of establishing certain environmental dimensions on achieving project success may be greater than any project manager can have directly, simply because one can only do so much. In line with this reasoning, the relevance of environmental dimensions would increase with the number of people involved and the project duration.

Furthermore, the interrelatedness of concepts that play a role in effective leadership should be acknowledged. The concepts in this study were found to be more intertwined than expected, suggesting that considering concepts as self-contained may be too simplistic. Taking into account relations helps to understand how leadership is effective, instead of only knowing what leadership is effective.

Lastly, classification of leadership concepts may need to be reassessed. Existing classification did not allow for the environmental dimensions found in this study. With regard to the leader dimensions, existing classifications were found to be poorly defined, arbitrary and used interchangeably by some.

6.3 Implications for practice

For project managers the findings of this study may be used to reflect on their leadership in highly complex and risky projects. Similar to the implications for theory, understanding of the role of the found environmental dimensions may help project managers as well. Shifting efforts towards establishing the appropriate environment may be valuable. As suggested in the findings, this would involve observing and analysing where the most critical gap between the current and desired situation exists with regard to the environmental dimensions, in order to subsequently close it by applying interventions and reflecting on this afterwards.

With regard to the development of project managers for highly complex and risky projects, the findings of this study provide for insight as to why it may be wise to develop certain aspects. For self-evident reasons this seems better than developing someone or oneself with regard to a certain aspect simply because a competence profile shows that the score of a certain leadership dimension should be high. Although this would not likely be done in practice, a conceptual framework that helps to understand how effective leadership can be explained in highly complex and risky projects was lacking. These insights may now be used to develop, but also to select, project managers for such projects. With regard to selection, the conceptual framework may also be used as a way to determine whether the views and envisaged approach of a project manager match the needs of highly complex and risky projects.

For organizations that execute highly complex and risky projects, it may be worthwhile to not only consider the findings of this study as relevant for (selection of) project managers. Given the role of the environmental dimensions, organizations may want to consider other stakeholders as well. Stakeholders in proximity to the project, such as the involved departments or key suppliers, also play a role in establishing the environmental dimensions. For example, if a highly complex and risky project is to take place that primarily involves a department that lacks psychological safety, it may be wise to first introduce a change initiative aimed at increasing psychological safety within that department, prior to starting the project. This example is also illustrative for the leader dimension acting independently: it may not be the popular thing to propose or enforce, but it may be the right thing to do for the sake of the project and that department. Also, it may be wise to for example opt for suppliers that are known to challenge the input that they receive, naturally taking care not to assume or neglect, for these projects.

6.4 Further research

The approach of this study was not suitable to quantify the importance of the found concepts, nor was it the intent of this study. However, given the suggestion made during respondent validation that influencing and psychological safety play a more central and important role, it may be worthwhile for further research to look into the relative importance of each of the concepts. A quantitative research approach would perhaps be most suitable for such a study. A first step to enable quantitative research has been made in this study by providing for conceptualization of the found concepts (i.e., their descriptions). However, in order to allow for quantitative research, operationalization would also be required. Further research may therefore look into ways to operationalize the concepts.

This would also enable further study of the relations between the concepts, which would address one of the limitations of this study. The relations found in this study would benefit from additional support (or rejection), because it seems that theoretical saturation was not fully reached with regard to the relations. A possible first step in this would be to investigate the notion that by establishing appropriate environmental dimensions, a project manager can help to achieve project success. This would test one of the main findings of this study, without necessarily having to investigate a large amount of relations. If the full extent of relations found in this study would be studied quantitatively, this would help to get a better understanding of which relations are justified, and which ones are not supported.

Another interesting topic to further investigate would be the role of fun, or pleasure. The general importance of fun was stressed during respondent validation, and the topic was also brought

forward earlier by other participants. The findings of this study suggest that performance increases when people enjoy their work, which seems a general notion rather than one that is specific for highly complex and risky projects. However, it may be more challenging to maintain the joy that people have in their work in highly complex and risky projects due to higher pressure and stress. Currently this is speculative and further enquiry would be required to determine whether this suggestion is justified.

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Appendix I Information Letter Focus Group

Researcher: Anas Hendriks
Phone number:
Email:

You are invited to participate in a study that concerns project manager leadership in projects that are high in complexity and risk. You will be asked to participate in a focus group setting: together with other participants a discussion will be held that focusses on the research question.

This information letter is to:

- ensure informed consent
- inform you with regard to the goal of the study and the focus group session
- inform you with regard the approach of the focus group session
- inform you with regard to preparations

I.1 Informed consent

The study is performed as part of a master's thesis for the Master Project Management at the Hogeschool Utrecht. The researcher's employer is Plan B B.V. situated in Amersfoort, the Netherlands.

Participation in this study is voluntary. You will have the opportunity to enter into a discussion about the research topic with others and will receive feedback once the study report is available. You will not receive personal benefits for participation. You may decline to participate or to answer questions during the study and may withdraw from this study at any time without any penalty.

Data will be collected during the focus group session by audio recordings, notes and by any data provided by participants (e.g., documents). All provided information and collected data is considered confidential. Your name and names of companies will not be included in the data (including transcripts) and reports associated with this study, with exception of the audio recordings. The collected data, including the audio recordings, will be retained by the researcher and only the researcher and his research supervisor will have access. You will not be given the opportunity to redact the collected data and reports associated with this study. The study report will be publicly available.

Your consent will be asked verbally prior to participation. You are requested to contact the researcher in case you do not intend to provide your consent, or in case you have any questions.

I.2 Goal of the study and focus group session

The goal of the study is to provide an answer to the following research question: what elements of the project manager's leadership contribute to project success for projects that are high in complexity and risk?

The following working definitions are adopted.

- Project manager's leadership: The ability of the project manager to influence, guide in direction, course, action and opinion.
- Project success: To meet the overall project objectives.
- Projects that are high in complexity and risk: A project that is difficult to understand, foresee and keep under control its overall behaviour, even when given reasonably complete information about the project system, and that is subject to risks that are perceived by both the organization and the public to have such grave consequences as to warrant the avoidance of failure.

The working definitions are intentionally broad so that they are comprehensive and in order to be able to capture any relevant aspects which are brought forward. Their subjective nature is

acknowledged; you should feel free to judge for yourself what is within the boundaries of the working definitions.

To give a sense of what may be considered grave consequences that organizations and the public feel should be avoided, the following examples are provided: harmful contamination of items for human consumption (e.g., food, pharmaceuticals), ecological contamination (e.g., spills, toxic releases), public service outages (e.g., power generation and distribution, transportation networks, internet, water) and failure of systems that protect the public or sensitive goods or data (e.g., dams, flood gates, databases with privacy sensitive information).

The goal of the focus group session is to gather data relevant for the research question in a setting that allows participants to exchange views and arguments. Note that an inductive strategy is adopted: no theory or hypothesis will be tested, but instead your views will be used as input.

I.3 Approach of the focus group session

The researcher will act as facilitator for the focus group session. After an introduction that will cover the topics in this information letter, the facilitator will ask and write down the research question. Subsequently, participants may provide any answers or propose any relevant topics related to the research question. Participants are encouraged to ask questions to each other, exchange views and arguments, and to bring forward any insights that they have or have developed as part of the focus group session.

With regard to what may be construed as an element (of the project manager's leadership), it is stressed that participants should not feel limited to provide any suggestions. Elements may include, and are not limited to, traits, characteristics, behavioural aspects, personality aspects, competencies, abilities, styles, etc. Furthermore, participants are encouraged to share the reasoning behind the relevance of the elements, in order to add to insight.

Discussed elements, including reasoning if necessary, will be written on flipchart paper by the facilitator to allow for reflection on what has been said. Related to the discussion, the facilitator will strive to:

- equally offer all participants the opportunity to share
- strike a balance between in-depth discussions and covering a broad set of topics
- remain on topic

The discussion will be held in Dutch.

I.4 Preparations

Whilst not strictly necessary, you are encouraged to prepare and write down answers you have to the research question prior to the focus group session. This can help to ensure that you will not forget to bring forward answers during the session that you deem to be most relevant. Furthermore, this can help to prevent that your lines of thought and answers are influenced by group interaction, which may happen given the broad spectrum of possible answers and topics.

Appendix II Focus group session flipchart

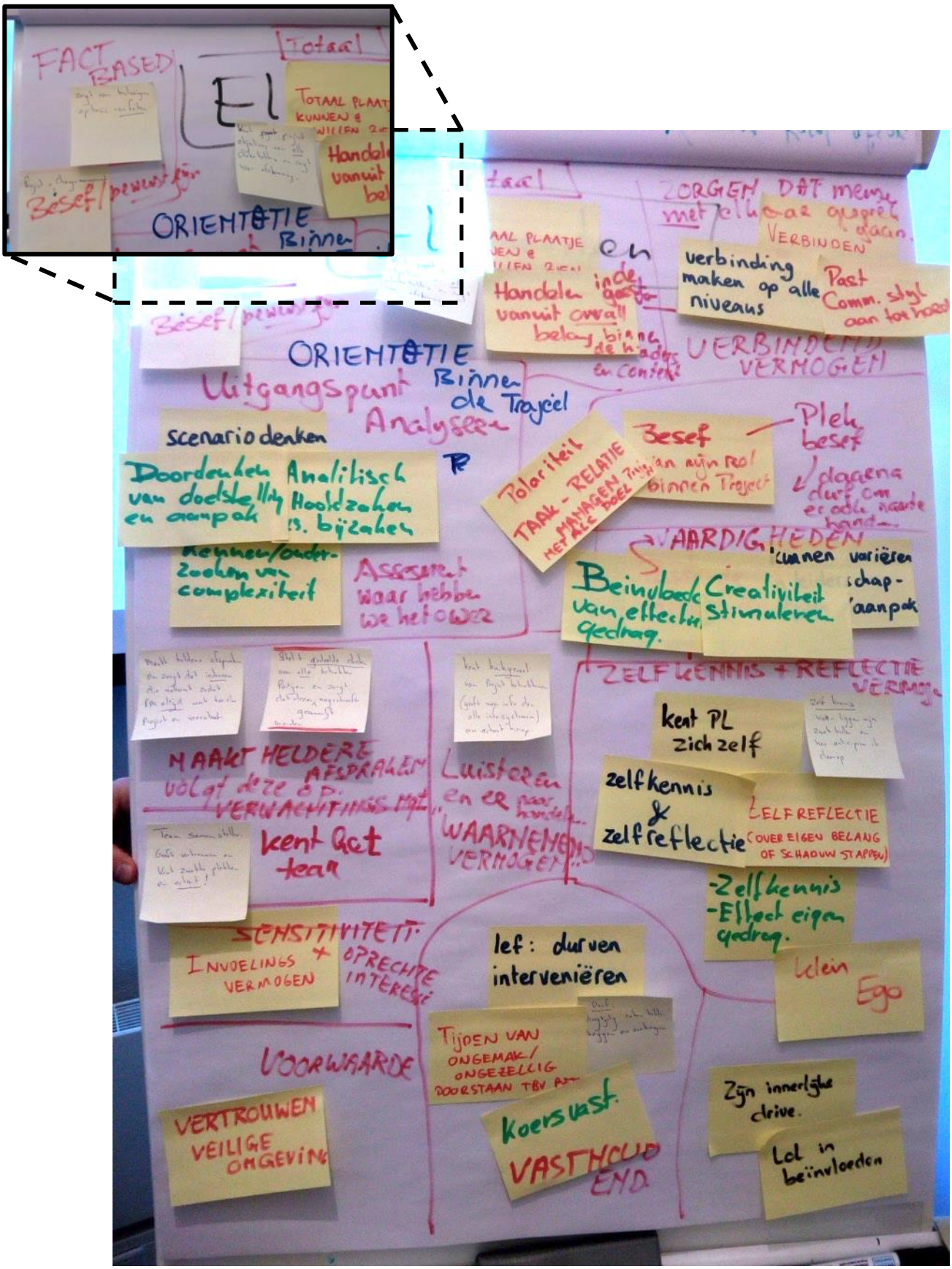

Figure 5 Focus group session flipchart

Appendix III Verbatim quotations in source language

III.1 Participant 2

'Ja, maar het is meer. Het is ook de voorwaarden scheppen dat je kan gaan luisteren. Dat betekent wel dat je in jouw omgeving, dat er dus vertrouwen moet zijn, dat mensen tegen je willen praten.' (participant 2, vq.02.01)

'Er zijn tal van voorbeelden van waar we fantastische infosystemen hebben binnen projecten, maar waarbij teamleden zeggen: "Mijn buikgevoel zegt: dit gaat gewoon niet goed." Nou, dan zal je, vind ik, als goede projectmanager, zal je daarop moeten acteren. En je zal dus moeten zorgen dat mensen met dat buikgevoel bij jou komen. Dat je het buikgevoel van mensen kent.' (participant 2, vq.02.02)

'Een buikgevoel is toch ook fact.' (participant 2, vq.02.03)

'De praktijk leert, dat als die verschillende partijen op een normale manier met elkaar communiceren, dat dat ten eerste veel leuker is, en ten tweede veel effectiever leidt tot een goed eindresultaat. […] Het gaat niet vanzelf, daar zal je dus moeite in moeten stoppen en trucs moeten uithalen om die mensen met elkaar in verbinding te brengen.' (participant 2, vq.02.04)

'Nou het is een combinatie van dingen. Dus als eerste het analytisch vermogen en ervaring dat je snapt van dat je aan de voorkant een aantal dingen uit zal moeten zoeken, om tijdens je project goede houvast te hebben, ook richting je opdrachtgever en noem het verder maar op. Dus dat is het ene, dat je dat moet beseffen. En daarna zal je daarop moeten acteren. Dus als je het hebt uitgezocht: Nu zal ik moeten acteren, om die. Daar is durf voor nodig.' (participant 2, vq.02.05)

'Goede projectmanagers kunnen voor zichzelf ergens definiëren: Als deze strepen over gaat, dan stop ik. En dat kan dus op allerlei gebied zijn. Dat kan op veiligheidsgebied zijn of als er dingen van jou gevraagd worden die jouw eigen integriteit overschrijdt. Of als er dingen van jou gevraagd worden, waarbij jij zeg maar verantwoordelijk bent voor de performance binnen een project en ik krijg daar niet de middelen voor of je krijgt niet de macht om daar ook direct sturing aan te geven, dan is het mijn overtuiging dat de projectmanager gewoon in moet grijpen. Want hoe kan je anders echt verantwoordelijk gesteld worden voor die taak? Dat kan dus dan niet.' (participant 2, vq.02.06)

'Tijdens het project zullen er weer beslissingen genomen moeten worden waar je weer zal moeten kijken, van: Wat zijn nou de hoofd- en bijzaken? Wat zijn nou de feiten op basis waarvan ik een beslissing binnen dat project moet nemen?' (participant 2, vq.02.07)

'Ja, tijdens het project is het, van: Je hebt de koers bepaald, en dan moet je er ook voor zorgen dat iedereen zich er zoveel mogelijk aan houdt.' (participant 2, vq.02.08)

'Het gaat ook om aan de voorkant op te staan en tegen de opdrachtgever te zeggen: "Die projectdoelstellingen van jou, die zijn gewoon onhaalbaar." Als dat nodig is. Dus het gaat niet alleen om… En daar zie je heel veel projecten op misgaan, dat dat dus aan de voorkant gewoon niet gebeurt.' (participant 2, vq.02.09)

'Als jij naar het ziekenhuis gaat en je knie moet geopereerd worden, […] dan zeg je van: nee, dan gaan we gewoon naar de professional toe. Ik ga naar de orthopeed, want dat is degene die het beste mijn knie kan opereren. Het interessante is hier: En die, die chirurg zegt dan aan de andere kant ook: "Ik wil jou best opereren, maar het gaat wel onder mijn condities."' (participant vq.02.10)

'Stel nou dat jij binnen jouw project, hè, al die tools heb je gekregen aan de voorkant, nou binnen dat project verandert er opeens iets. Dan vind ik ook dat je op kan staan en kan zeggen:

"Op deze manier kan ik mijn werk niet doen. Dus, of je verandert dat, of ik geef mijn sleutelbos aan jou terug en dan zoek je maar een ander." Ik vind dat je die als professional, bedenk daar weer even die analogie die ik net met die chirurg heb gemaakt, of bij die orthopeed. Ik vind dat een projectmanager, op dit niveau is een professional. En die professional mag je op zijn eigen judgement, moet die gewoon beoordeeld worden. En dus als hij zegt: "Onder deze omstandigheden kan ik mijn werk gewoon niet goed doen," dan horen daar consequenties bij.' (participant vq.02.11)

'Leadership betekent ook het voorbeeld geven. Dat betekent dus dat als jij op deze manier in het project zit, dan kan je dat dus ook afdwingen bij alle mensen die in het project voor jou aan het werk zijn.' (participant vq.02.12)

'Wat je heel veel in projecten tegenkomt is: Ik denk dat de aannemer op tijd klaar is. Nee, niet "ik denk", of "ik verwacht dat de aannemer op tijd klaar" is, nee: weten.' (participant 2, vq.02.13)

'Ik denk dat, dat, heel veel projectmanagers denken dat een project een project is. Terwijl er gewoon heel veel change managementelementen in zitten. Er zitten ook heel veel proces elementen in. Al is het maar: change management van de omgeving van waarin je het project realiseert. Dat ook moet beseffen, dat er aandacht voor moet zijn, omdat je anders iets oplevert in een omgeving van waar het minder effectief land dan als zou kunnen als je er wel rekening mee houdt.' (participant 2, vq.02.14)

'Mijn mening is dat de projectmanager gewoon als hij een team samenstelt, dat hij zich moet beseffen waar hij naar moet kijken.' (participant 2, vq.02.15)

'Dat is een vaardigheid, en daar zit iets achter. Het resultaat dat je daarmee wil bereiken is dat jij als projectmanager op elk moment weet hoe je project ervoor staat. Dat is de kern van wat je wil bereiken. […] En daar is voor nodig naar mijn gevoel dat je heldere afspraken maakt en dat je mensen er ook op aanspreekt dat ze die afspraken nakomen.' (participant 2, vq.02.16)

'Wat je ziet binnen heel veel projecten, is dat men denkt als er een contract is, dat je dan heldere afspraken hebt gemaakt. En dat is dus principieel niet juist, naar mijn gevoel.' (participant 2, vq.02.17)

'Het is van belang dat de projectmanager voldoende kennis en inzicht heeft betreffende de verschillende fases van projecten, omdat de juiste leiderschapsstijl afhankelijk is van de situatie. Zo kan het in het begin belangrijk zijn om ruimte te geven (divergeren) en is het in een latere fase, wanneer bekend is wat er moet gebeuren, belangrijk om strak te kunnen sturen (convergeren). De projectmanager moet deze noodzaak kunnen overzien en in staat zijn verschillende stijlen toe te passen.' (participant 2, vq.02.18)

'Het is van belang dat de projectmanager besluiten kan nemen of ze organiseert en indien nodig afdwingt. Dat kunnen onder andere besluiten zijn die genomen moeten worden door projectteamleden, maar ook door een opdrachtgever. Hier is courage voor nodig, met name om richting een opdrachtgever een besluit af te dwingen. Het belang van besluiten maken of afdwingen is dat er anders te veel opties in de lucht blijven hangen, waardoor men in te grote mate niet weet waar men aan toe is.' (participant 2, vq.02.19)

'Het bewaken van eigen morele grenzen en integriteit is belangrijk, zoals al kort wordt genoemd in het model. In het boek 'Het klopt wel, maar het deugt niet' wordt omschreven hoe tegenwoordig het sturen op KPI's en performance ertoe leidt dat mensen onder steeds grotere druk komen te staan om besluiten te nemen die tegen hun eigen moraal zijn. Dit geldt ook voor projecten en het is belangrijk om je morele grenzen en integriteit te handhaven.' (participant 2, vq.02.20)

III.2 Participant 3

'Dat gaat ook weer met die scenarioanalyse, want je weet dus weer: Een stevige budgetoverschrijding, vijf, zes, zeven, acht manieren om daar mee te spelen. Een-op-een

melden, kop koffie, wachten op de stuurgroep, alles kan. Alles heeft zijn consequenties en kan in een bepaalde situatie het beste zijn of het beste gepercipieerd worden.' (participant 3, vq.03.01)

'Dus dat hij zegt: "Projectsucces is voor mij gewoon binnen tijd, geld en kwaliteit," en hij zit op de vacaturesite van […] te kijken naar zijn volgende stap, dan weet ik dat projectsucces voor hem is een carrièrestap te kunnen maken. […] Het is het invoelen van: "Het gaat super goed met me," maar als je er als een druif uitziet en je zit alleen maar op je telefoon te staren, daar moet ik op kunnen acteren. Het invoelingsvermogen… Eigenlijk ook gewoon direct contact bedoel ik daarmee. (participant 3, vq.03.02)

'Het is ondenkbaar dat je ergens een stukje isolatiemateriaal en dan niet meteen iemand op zijn […] geeft.' (participant 3, vq.03.03)

'En dan gezondheid van de lijn is bijna ook, ik durf bijna te beweren dat dat een sterke indicator is voor de gezondheid van een project. En als je dus dit dikste lijnen, of waar de meeste interactie zou moeten zijn, dat is gewoon, dat kan je uit de boekjes halen, als je die al op groen weet te krijgen, dan ben je een heel eind. (participant 3, vq.03.04)

'Dat je, als iemand extreem afgeleid is, om dan te zeggen: "Zullen we het gesprek niet doen?" Of: "Vind je het ook een gek gesprek?" Of: "Zullen we gewoon even koffie gaan drinken of gewoon een stukje gaan wandelen?"' (participant 3, vq.03.05)

'Is het goed voor mijn project? Nee, misschien niet. […] Maar voor het totaal of voor de blij te maken gemeenschap wel. Dus je kan over jezelf en over je eigen gekaderde projectendingen heenstappen als je weet dat het beter is voor de business, om de strategische doelstellingen van de organisatie te bereiken, dat soort dingen. En dat helpt je. […] Merkel doet niet per se altijd het goede voor Duitsland, omdat ze weet dat er iets belangrijkers en groters is.' (participant 3, vq.03.06)

'Een ding van Churchill kwam bij mij naar voren […]: "If you think you're going through hell, just keep going." Dus daarom kom ik toch nog even op die andere. Als je de curve van het project goed meent te kunnen voorspellen of kent of een goed leider bent, dan weet je zoals iemand al zei, dat je een half jaar of een jaar lang behoorlijk niet geliefd kunt zijn ten behoeve van dat het daarna heel veel beter wordt voor iedereen en dat dat goed is voor het project.' (participant 3, vq.03.07)

'Veel projecten kenmerken zich door, wat we ook al eerder bespraken, dat iedereen in zijn eigen rol, zijn eigen bevoegdheid, zijn eigen taak, zijn eigen verantwoordelijkheid zit te strijden. En dat super goed doet, maar dat je daarmee geen vruchtbare projectomgeving creëert. Praktijkvoorbeeld, […]: De aannemer deed daarmee voor de aannemer ongelooflijk goede dingen: Meerwerken vlogen de opdrachtgever om de oren, alles heel goed bijhouden, stevig staan voor waar ze origineel voor gecontracteerd waren, goed de opdrachtgever bij de originele uitgangspunten blijven, en die ontwerpers die ontwierpen wel op basis van het programma van eisen, maar daarna interactie ook beperkt. Die groepen deden dat wel ok. Die zaten ook wonderbaarlijk op hetzelfde terrein, maar die hadden net zo goed 100 kilometer van elkaar af kunnen zitten, want die vonden elkaar niet. En daarvan hebben we gezegd: "Nou ja, joh, ga nou gewoon eens koffiedrinken met elkaar, twee keer per dag of wat dan ook, en probeer eens een verbinding tot stand te krijgen. Waarom doe je wat je doet? Wat drijft je nou? Wanneer is het project voor jou succesvol? Vind je het nog leuk? We hebben een van de gaafste projecten […] in handen, maar we gaan hier allemaal met lood in onze schoenen naartoe. Hoe doen we dat elkaar aan en waarom doen we dat elkaar aan?" Nou, dat is verbinden.' (participant 3, vq.03.08)

'Samen, en, we hebben de vierkante tafel weggehaald uit de ruimte en daar zo'n tafel van gemaakt. We zijn wel koffie gaan drinken, we hebben koekjes […]. Nou dat werkt altijd. Kijk, dat soort kleine dingen, maar dat zijn wel regie-elementen. Want als ergens koekjes staan, dan gaan mensen koekjes vreten. Dat is wat mensen doen. En dan gaan ze samen koekjes vreten.' (participant 3, vq.03.09)

'Nou, dat is een supergoed contract. Althans dat is een contract, maar dat is geen afspraak, dat is geen intermenselijke afspraak. Want je weet allebei dat je het over niks hebt, en dan ga je er juristen opzetten en dan zeg je: "Het lag aan jouw te late informatieverstrekking." "Nee, het ligt aan jou onkunde. Je hebt het onderschat." Weet ik veel. Het is een contract. Het is een goed contract. Het is een ongelooflijk slechte intermenselijke afspraak, want je bestrijdt elkaar op een non-casus.' (participant 3, vq.03.10)

'Het begrip vertrouwen lijkt te missen. Dit zou je verwachten bij reflecting openly of psychological safety.' (participant 3, vq.03.11)

'Resource management lijkt een wat misplaatste term voor de omschrijving die erbij hoort. Resource management associeer ik met een hard skill, terwijl dit veel meer gaat om een team in zijn kracht zetten. Het mobiliseren van expertise en het oplossend vermogen mogen meer terugkomen in de term.' (participant 3, vq.03.12)

'Het model kan de indruk wekken dat effective leadership het enige is dat bijdraagt aan project success.' (participant 3, vq.03.13)

'Ik herken nadrukkelijk deze bevinding. De term environmental dimensions is wellicht wel te algemeen. Het gaat met name om mensen en stakeholders.' (participant 3, vq.03.14)

III.3 Participant 4

'Het is geen lijnorganisatie die de komende twintig jaar een proces moet optimaliseren met elkaar. Nee, het is een gelegenheidscoalitie, een verstandshuwelijk, wat een succes moet worden. Het is ook geen ware liefde, want je bent tot elkaar verbonden: Hij was de goedkoopste aannemer, hij had de beste prijs hiervoor, en die zat er nog, die kreeg je erbij. Zie er maar een gelegenheidscoalitie van te maken. Het is een eenmalige oefening om er een team van te smeden, wetende dat je weer uit elkaar gaat.' (participant 4, vq.04.01)

'Dat hangt ook samen met levenservaring, met bijna wijsheid. Als je voor het eerst in je leven tegenslag meemaakt, als je dat op je 45^{e} pas hebt, dan schrik je je de pleuris.' (participant 4, vq.04.02)

'Ik heb ze laten zien aan de bouwvakkers voordat we begonnen te bouwen. […] Het werd heel stil in de zaal.' (participant 4, vq.04.03)

'Nou, dit doe je niet alleen. Je hebt ook verbindingsofficieren in je team zitten en als je die weet aan te wijzen… Er zijn een paar mensen, die kunnen dit van nature heel goed in je team.' (participant 4, vq.04.04)

'Als ik weet dat het een complex project is, en dat ik weet dat ik problemen ga ik krijgen maar ik weet nog niet welke, dus ja aan welke knop moet ik dan gaan draaien? Dan ga ik op hele andere dingen sturen. Dan ga ik sturen op het probleemoplossend vermogen in de groep. Dan ga ik heel erg sturen op: zijn alle disciplines aan boord die mij in de toekomst kunnen gaan helpen? Kunnen die goed samenwerken? Is het probleemoplossend vermogen hier op topniveau? Ik ga hem niet oplossen. Ik weet nog niet eens wat er op me afkomt. Dan ga ik heel erg op het team zitten.' (participant 4, vq.04.05)

'Op basis daarvan beslis ik welke leiderschapsstijl ik inzet en welke projectaanpak. Op basis van een hele grondige analyse van de casus, zowel van het project als de context waarbinnen het project zich plaatsvindt, dus ook de business van de klant.' (participant 4, vq.04.06)

'En als je jezelf ten voorbeeld stelt, dan kun je dus ook falen ten overstaan van iedereen. En je moet dus ook de moed hebben om ten overstaan van iedereen af en toe uit te kunnen glijden. Dat gebeurt.' (participant 4, vq.04.07)

'Ik ben heel open in wat ik dan deel, wat dat met mijn emotie doet. […] Ja, maar dat is voor mij wel de enige way out. […] Maar uiteindelijk, tegenslag maakt sterk. […] Je struikelt een keer, niet alles gaat goed. En de vraag is vervolgens hoe je daar dan weer mee omgaat.' (participant 4, vq.04.08)

'Zelfkennis en zelfreflectie, dat gun je iedereen in je team. Zowel op persoonsniveau als dat het de groep ten goede komt. En zeker als projectmanager moet het heel hoog staan om daarmee bezig te zijn en je hebt een voortrekkersrol om het in de groep naar boven te krijgen. Want als ze zichzelf in de groep onvoldoende kennen, niet willen reflecteren op hun handelen en zich terugtrekken in hun schuttersputje, dan krijg je het gedrag dat [participant 3] net omschreef. Om ze daaruit te krijgen, zul je ze toch ook iets introspectiefs mee moeten geven. (participant 4, vq.04.09)

'Je moet eerst al je context of stakeholderanalyse in je hoofd kunnen doen. Zelfs ongeveer dat je al de dikte van de lijnen ertussen ziet: communicatienoodzaak. Dus je hebt een bepaalde communicatie of verbindingsnoodzaak. Het is niet zo superbelangrijk dat die ontwerpende partij, bevoegd gezag lief vindt. Ik kan voorbeelden noemen waarbij het wel weer handig is, maar dat is geen dikke lijn. Tussen projectmanager en ontwerper zit wel een dikke lijn en tussen projectmanager en aannemer ook een hele dikke lijn. Dus je moet die analyse in je hoofd maken en dan moet je zien ook waar die dikke lijnen, in dat netwerk, en waar ze groen zijn en waar ze rood zijn. Dus dat je zegt: Hier doe ik niks aan, want dat gaat vanzelf al goed. En hier zit een hele dikke lijn en die is nog rood ook, oh, daar moet ik iets aan doen. Dus daar is een ontzettende verbindingsnoodzaak, alleen die is er niet. Dan ga ik daar als eerste eens iets op doen.' (participant 4, vq.04.10)

'Dat is voor mij wel een verschil. Ik heb dat boek ook gelezen: die factor moed. Dat vond ik ook fascinerend. Lef is met je roeibootje de oceaan oversteken, dat is gewoon onbezonnen, onbesuisd. En moed is risico's volledig zien, weten dat je het niet helemaal in de grip hebt, maar toch doen.' (participant 4, vq.04.11)

'De juristen rollen over je heen, je project principal rolt over je heen. Het kan en mag allemaal niet, maar het was de enige manier om het project vlot te trekken. Je stapt dus, je stapt ook over jezelf heen. Je kan jezelf onmogelijk maken en een schop onder je reet krijgen. Maar hij zag dit als de enige manier om het project vooruit krijgen. Die bewoners moesten mee.' (participant 4, vq.04.12)

'Om te verenigen, al die praktische dingen, de projectmanager moet als eerste dat drempeltje over: zich kwetsbaar opstellen, zijn emoties uitspreken, moed tonen, voorbeeldgedrag. En dat nodigt uit anderen datzelfde te doen.' (participant 4, vq.04.13)

'Gewoon mensen durven aanspreken op gedrag of nalaten van gedrag. Dat kan ook op heel basaal niveau. Dat is de eerste oefening in moed. Maar ook het uitspreken van wat je voelt, daar is ook moed voor nodig. Als je in een vergadering of een gesprek zegt: "Dit voelt niet lekker." Dat is wel lef. Het begint klein, hè.' (participant 4, vq.04.14)

'En het helpt dan als je een klein ego hebt.' (participant 4, vq.04.15)

'Geen zelfreflectie zonder zelfkennis. Als je verrast wordt door je eigen handelen, je eigen emoties… En: lieve help, wat overkomt mij nu? Als je werkelijk vanuit je onderbuik primair blijft reageren, dan valt er ook niks te reflecteren. Daarom heb ik ook zelfkennis en zelfreflectie opgeschreven. […] Ja, in een hoge mate, want je staat altijd voor de groep, je staat altijd in de schijnwerpers. Er komen vele emoties bij los. Je kan nooit bukken, nooit duiken, nooit leunen.' (participant 4, vq.04.16)

'Echter, de importantie van de relaties en wanneer welke dimensies en relaties ingezet worden om projectsucces te behalen zijn sterk afhankelijk van de context: Welk team heb je tot je beschikking (met welke sterke en zwakke punten)? Wat vraagt het project van het team? En wat vraagt de projectfase van het team? Er zit altijd een delta tussen wat het team uit zichzelf doet en kan aan de ene kant, en wat nodig geacht wordt (door de PM) aan de andere kant. Op

deze delta richt ik mijn energie. Om hier het verschil te maken, helpt het enorm als de PM uit de genoemde dimensies kan putten (met kennis en ervaring) en deze in kan zetten naar believen.' participant 4, vq.04.17)

'Het situationele (aanvoelen wat nodig is, dit inzetten, en hierop reflecteren) kenmerkt een goede PM en draagt sterkt bij aan projectsucces, is mijn ervaring. Hoe meer registers een PM open kan trekken, hoe groter zijn vermogen om het projectteam excellent te laten presteren. Dit betekent ook dat je het model niet lineair zou moeten beschouwen: het is een kwestie van observeren en analyseren wat nodig is, om vervolgens te interveniëren en reflecteren. Dit doe je continu.' (participant 4, vq.04.18)

'Daarnaast geldt in het algemeen dat wanneer men waardering voelt, plezier heeft, en lol heeft in het werk, dat dit leidt tot veel betere individuele prestaties en betere samenwerking. Dat is ook een bijdrage die de environmental dimensions hebben en die bijdragen tot projectsucces.' (participant 4, vq.04.19)

'Ik vind dat Influencing en Psychological Safety een grotere importantie hebben dan de overige dimensies. Als je deze twee wegdenkt uit het model, valt de helft van de relaties weg. Succesvol projecten opleveren zonder deze twee items wordt ook heel lastig, terwijl het ontbreken van 'realizing viable agreements' een minder grote belemmering is voor project succes… is mijn ervaring. Daarentegen is invloed cruciaal, zelfs belangrijker dan macht. Macht gaat samen met verantwoordelijkheid, en invloed niet. Met invloed kun je 'onzichtbaar' het resultaat beïnvloeden. Macht is zichtbaar en daardoor kwetsbaarder.' (participant 4, vq.04.20)

'Dit mechanisme werkt ook zo in de praktijk, is mijn ervaring. Het effect wat je zelf als PM direct weet te bereiken op het projectsucces is gelimiteerd, want dat wordt beperkt door je aantal werkuren per week. Door het beïnvloeden van je omgeving, kunnen en zullen veel meer mensen meehelpen project succes te bereiken. Zeker op lange termijn project (12 mnd+) loont het enorm om je energie in de omgeving te stoppen.' (participant 4, vq.04.21)

'Ik maak onderscheid tussen teamleden, stuurgroep en gebruikers (directe project omgeving) en alle anderen daaromheen (stakeholders). Naarmate dichter bij het project betrokken, zal ik meer tijd en energie steken in het 'beïnvloeden van de omgeving' omdat het effect op projectsucces groter is. Stakeholders op grotere afstand probeer ik 1-op-1 te overtuigen en niet via de omgevingsfactoren.' (participant 4, vq.04.22)

III.4 Participant 5

'Dus je bent heel bewust bezig om een omgeving te creëren waarin dingen gemeld worden, waarin dingen aangegeven worden, waarin mensen zich veilig voelen om zo'n onderbuikgevoel te delen. En waarbij de ander dus dat onderbuikgevoel ook serieus neemt.' (participant 5, vq.05.01)

'Je moet heel goed kijken van: Waar zit nou die complexiteit? En wat maakt het nou complex? Is het nou de hoeveelheid partijen die erbij betrokken zijn die hele diverse belangen of uiteenlopende standpunten hebben? Is dat complexiteit? Zit de complexiteit hem juist in dat de risico's, dat het ontzettend risicovol is?' (participant 5, vq.05.02)

'Je komt steeds in situaties waarin het lastig is en dan vasthouden aan wat je bedacht hebt… Dat is voor mij echt een kenmerk, een element van leiderschap.' (participant 5, vq.05.03)

'Ik bedoel dat met beïnvloeden van cultuur ofzo, had ik dat genoemd. […] Beïnvloeden van effectief gedrag. Dus leiderschap is echt het beïnvloeden van die omgeving, die cultuur.' (participant 5, vq.05.04)

'Wat is de mate van interactie? Dan kun je het ook nog op een as zetten, van welke standpunten liggen nou ver uit elkaar? En dan zie je dat die standpunten die ver uit elkaar liggen ook nog weinig interactie hebben, ja, dan kom je nooit tot elkaar.' (participant 5, vq.05.05)

'In eerste instantie kwam de gedachte op dat een stevige focus op het eindresultaat ontbreekt. Echter, in complexe en risicovolle omgevingen geldt meer dat het project een stabiel en betrouwbaar geheel moet zijn, en kan het eindresultaat nog wel eens bewegen. Te veel druk op het eindresultaat kan zelfs mogelijk leiden tot concessies op stabiliteit en betrouwbaarheid.' (participant 5, vq.05.06)

'Humility heeft mogelijk een grotere rol en meer relaties. Bescheidenheid maakt ook dat je minder snel uitspraken doet vanuit eigen overtuigingen en oordelen, en maakt dat je meer open staat. Hierdoor relateer ik het ook aan 'Appreciating what is below the surface' en 'Reflecting openly'. Bescheidenheid maakt dat er ruimte is voor weerwoord, of dat je bereid bent je eigen standpunten opzij te zetten. Bescheidenheid leidt tot het beter kunnen absorberen van mengingsverschillen of verschillende visies en leidt daarmee tot grotere weerbaarheid ('Emotional resilience').' (participant 5, vq.05.07)

'Als de onderstroom of cultuur is om alleen positief nieuws te brengen, dan leidt dat tot versimpelen, met dus een negatieve impact op 'Care not to assume or neglect'.' (participant 5, vq.05.08)

'Er gaan veel pijlen naar 'Influencing' en vanuit daar gaan er weer veel pijlen naar de 'Environmental dimensions'. Betekent dat iets? Het klopt dat als je goed kan beïnvloeden en je bent ook nog eens flexibel in je gedragsrepertoire, dan heeft dat effect op de genoemde 'Environmental dimensions'.' (participant 5, vq.05.09)

'Realizing viable agreements' helpt ook voor 'Collectivism': als je rekening houdt met belangen van andere partijen en je maakt daardoor realistische afspraken, dan heeft dat een positief effect op collectivisme. Het opzoeken of overschrijden van grenzen bij aanbestedingen draagt negatief bij aan collectivisme.' (participant 5, vq.05.10)

'Acting freely' zou wellicht beter 'Acting independently' genoemd kunnen worden. Freely associeer ik met vrij en impulsief, en independently associeer ik met overzicht hebben over het geheel en te kunnen doen wat nodig is. En dus bewust bent van je eigen rol in het geheel en daarin volwassen kan acteren.' (participant 5, vq.05.11)

III.5 Participant 6

'Dat vergt natuurlijk wel, van: Nou, ok, stel dat dit fout gaat? Dus eigenlijk continu voor jezelf je risicomatrix in je hoofd hebben. Ok, stel dat dit fout gaat: Hoe erg is het?' (participant 6, vq.06.01)

'Dus ja, voor mij is dat, hé, [telefoon trilt] sorry, moeite doen of laten zien dat transparantie werkt en noodzakelijk is op alle niveaus. Ik ben transparant over wat ik aan het hoofdkantoor vertel. En ik wil dat iedereen transparant is over de dingen die je tegenkomt, want in the end, als iemand iets verzwijgt wat cruciaal had kunnen zijn, dan hebben we een probleem.' (participant 6, vq.06.02)

'Eén boodschap naar het team en daarbuiten. […] Dus wat ik presenteer in een stuurgroep is, moet, hetzelfde zijn als wat ik presenteer door alle lagen heen van het project. Gewoon hetzelfde, dus maandelijks, maakt niet zoveel uit, gewoon, dit is de waarheid van vandaag. Die vertel ik in de stuurgroep, die vertel ik hier. Als we het er niet mee eens zijn, dan nu. Mag allemaal transparant, dat is prima. […] En ik zeg dat omdat je daarmee ook verantwoordelijkheid probeert te nemen als team. En ik spreek, dit soort dingen spreek ik mensen ook altijd hard op aan. Op het moment dat ze zeggen, of dat ik hoor dat iemand: "Eigenlijk is het maar een rommeltje, bla bla bla." Is prima dat je dat vindt, dat kan, maar dan gaat het, maar dan moet het opgelost worden, zeg maar. En dan moet het geen roddelcircuit gaan worden. En ik denk: Hoe risicovoller en complexer het wordt, hoe lastiger dat in de hand te houden is.' (participant 6, vq.06.03)

'Ik kan het niet voorspellen allemaal, dus ik heb de ogen en oren van iedereen nodig.' (participant 6, vq.06.04)

'Je bent bezig met een team dat jou moet voorzien van de issues en de items die er zijn, want ik heb niet één risicomatrix waarin alles staat. Dat werkt gewoon niet, want ze zitten op een of ander […] detail, dat iemand wel weet in jouw project, maar het niet durft te zeggen bij wijze van spreken, want die hoopt dat het wel goed zal gaan. En die moet je er continu uit zien te halen. […] Dus die lijnen wil je zo open mogelijk neerzetten.' (participant 6, vq.06.05)

'Die loopt altijd te zeiken over alles. Nee, die loopt te zeiken om een of andere bepaalde reden.' (participant 6, vq.06.06)

'Dat vind ik wel een les voor mijzelf ook, dat is continu leren van: Wat hou ik nou niet in de gaten, zeg maar? En dat is heel projectspecifiek, kan dat zijn. En daar wel de vinger achter krijgen. Want uiteindelijk is het altijd iets concreets, waardoor je een onderbuikgevoel hebt dat het niet klopt.' (participant 6, vq.06.07)

'Maar je moet daar wel op doorzoomen. Waar zit dat dan? En wat doen wij nu niet, waardoor dat kan ontstaan? […] Of wat doen wij juist wel waardoor dat ontstaat? Dus ik denk dat je er ook op moet reageren, zeg maar, op een juiste manier. […] Je moet er wat mee doen.' (participant 6, vq.06.08)

'Het is complex, so be it. Dat je, en dan moet je het ook niet willen vereenvoudigen of weet ik veel wat. Als het moeilijk is, dan moet je het natuurlijk proberen te doorgronden in stukjes, maar dan moet je niet zeggen: "Dat is niet belangrijk, dat is niet belangrijk, dat is niet belangrijk." En vervolgens zit je met de ellende, omdat de ellende in dit soort projecten uit elk miezerig detail kan komen.' (participant 6, vq.06.09)

'Ik denk een van de meest belangrijke is dat je nooit aannames moet doen, in je project, programma moet doen. […] Die sfeer moet je voor elkaar zien te krijgen in een project. Dat uiteindelijk niemand aannames doet, zeker als het zo complex is. Het geldt denk ik voor elk project, maar zeker voor dit soort projecten waar impliciete aannames desastreuze gevolgen kunnen hebben.' (participant 6, vq.06.10)

'Ik denk dat in elk project, maar echt wel in dit soort dingen… Want er gaan dingen aankomen die je never nooit had zien aankomen, waar je mee om zal moeten gaan.' (participant 6, vq.06.11)

'Soms moet je een succes forceren. Dus ergens ook, en nu gaan we het gewoon doen. Nou ja, dat mensen geloof gaan krijgen, het, zorgen dat mensen geloof blijven houden in, ondanks deze tegenslag, dat is, en niet alleen voor jezelf, maar juist als rolmodel: Ok, het gaat gewoon lukken. Mij krijg je niet van mijn stuk af, het gaat gewoon lukken. Ik denk dat dat cruciaal is. En met name je projectteam in, maar ook naar de buitenwereld.' (participant 6, vq.06.12)

'Als iemand unhappy in het project zit, ben ik ervan overtuigd dat, dat die eerder geneigd is, van: "Nou ja, weet je, ze luisteren toch niet naar me en ze, dus, en als het dan misgaat dan, so be it." Dus die dwaalt af, zou ik bijna zeggen, van een team. […] Mijn ervaring zegt dan, dan gaan er dingen gaan blokkeren. Dat gaat niet goedkomen. En dan, iedereen kan wel eens een dagje chagrijnig zijn, dat is prima, maar de volgende dag, moet ie als het goed is, binnen 24 uur bij wijze van spreken, moet het ergens gealloceerd zijn. Want anders, als je het voor zich houdt, dan gaat het niet goed, en dan blijf je chagrijnig.' (participant 6, vq.06.13)

'Dus daar continu naar verwijzen. Dus twee of drie hoofdboodschappen hebben en die in al die dingen die je ziet, continu terug laten komen.' (participant 6, vq.06.14)

'Daar moet je heel duidelijk over zijn, want als je elke keer: "Nou, kan wel weer een beetje," dan is je boodschap niet consistent. Dus als je hem verzet, of dat nou geld of tijd of weet ik veel waar je dan ook op stuurt: "Dat doen we, omdat we anders echt ons doel niet kunnen bereiken." Dus als je een reset doet op waar je op stuurt, dan moet dat over de hele linie moet dat goed uitgelegd zijn.' (participant 6, vq.06.15)

'Kwetsbaar opstellen, ik denk dat dat zeker voor dit soort projecten heel cruciaal is. Want dat laat mensen ook zien: Je moet het ook op tafel gooien. Want ik denk dat het cruciaal is om deze projecten tot een succes te brengen. Dus bij mij springt dat hier er wel echt, dat is volgens mij echt onderscheidend, voor dit soort, voor dit soort projecten. Echt die transparantie en als het niet goed is, dan is het niet goed en dan moeten we het bespreken.' (participant 6, vq.06.16)

'Ik koppel het aan transparantie. Dan zien mensen ook: Hij laat ook zien wat hij echt vindt. Hè, in plaats van wat hij allemaal roept. Dus dat zou ik eigenlijk ook moeten doen.' (participant 6, vq.06.17)

'Het tweede, maar dat is ook meer een persoonlijke eigenschap, is, en die daarmee samenhangt, is blijven vragen. Dus, dat kan ook heel goed, zeker in het begin van een project gewoon, bij wijze van spreken, de domste vragen. Dat hangt dicht aan tegen: neem niks aan.' (participant 6, vq.06.18)

'Als jij ergens anders van denkt: Het zit me niet lekker. Of: Ik heb niet helemaal onder controle, of dat kon wel eens vervelend gaan worden of weet ik veel wat allemaal. Daar heel strak op door blijven vragen en ook niet weggaan voordat je daar een antwoord op hebt en zelf het gevoel hebt, van: Gaat dat lukken of gaat dat niet lukken?' (participant 6, vq.06.19)

'Gewoon heel goed aanvoelen: Nu is er echt iets aan de hand en dit kan ik negeren. Ik denk dat daar heel, ja, dat dat heel belangrijk is.' (participant 6, vq.06.20)

'Als ik het woord "en ik neem aan dat" of "ik heb gehoord dat" of dat soort dingen, dan gaan bij mij meteen mijn nekharen overeind. Dan is het ook: Dat is voor mij niet goed genoeg. Wie zegt dat? Waar komt, wat zit daaronder? Zit daar gegevens onder of wat dan ook?' (participant 6, vq.06.21)

'Kom niet met onzin aan, laat ik het zo zeggen. Ik denk dat dat de echte kwaliteit is, dus het echt scheiden van hoofd- en bijzaken. Dat die weten: Ok, als de projectmanager nu bij mij komt, dan weet ik ook: En dit, nu is het ook echt mijn, mijn job om het te doen. Ik denk dat dat belangrijk is.' (participant 6, vq.06.22)

'Het gewoon voor je zien. Laten we het zo zeggen, van: Zo zou dat dan moeten gaan. Hè, wat je vaak ziet is dat er veel achter een bureau wordt bedacht, hoe je, hoe je zoiets zou moeten aanpakken. Ja, ik geloof daar niet in. Dus je moet er zijn: Je moet gaan kijken. Je moet weten: Hoe speelt dat nou? Hoe moeten we dat nou doen? […] Dus het is goed om zelf ook te begrijpen hoe gaat dat nou straks voor deze persoon overkomen op het moment dat we dit van A naar B gaan verhuizen. Ik denk dat, dat je ook heel erg, daar kweek je heel veel goodwill mee, maar daardoor kun je ook scherp zijn, zeker in de fases dat je transities hebt of zeker in een eindsituatie toe.' (participant 6, vq.06.23)

'Luchthaven natuurlijk een mooi voorbeeld. Ik heb een hele kleine lokale luchthaven en daar moet in één keer, kunnen er twee landingsbanen bij en een vertrekhal en weet ik het wat allemaal. Weet je, dan, dan heb je een organisatie die een beetje "we kennen elkaar" naar een professionele organisatie. Dat bedoel ik, dus: Hoe goed is deze staande organisatie in staat om zo'n project te ontvangen? En ik denk dat, het is cruciaal om daar oog voor te hebben, in het belang van de totaalorganisatie en van het project. Van, ja: We kunnen dit technisch en fantastisch allemaal mooi neerzetten, bouwen, maken, weet ik het wat allemaal, maar deze mensen die gaan dat… Die moeten meegenomen worden, uitgebreid worden, whatever it takes, veranderd worden misschien wel, om uiteindelijk het project succesvol te maken.' (participant vq.06.24)

'Daar moet je objectief en boven het projectbelang in blijven. Dus echt als, verplaats jezelf continu in: Als ik hier de baas was van het, ok, en dan? Gaat dit goed of niet? Betekent niet dat je het moet oplossen, maar wel dat je continu de voelsprieten moet hebben, want uiteindelijk faalt je project daarop. En zeker voor dit soort projecten, gaan ze daar gegarandeerd op falen. Die falen zelden op de techniek.' (participant vq.06.25)

‘Als je een heel groot projectteam hebt, dan krijg je op een gegeven moment: Het wordt een eiland, zeg maar. En dat wil je voorkomen, zeker bij dit soort projecten. […] Dan worden die officieuze linkjes die worden belangrijker, want dat kun je nooit meer allemaal managen.’ (participant 6, vq.06.26)

‘Leuk op papier, maar je weet, in werkelijkheid, dat het nooit gaat lukken. […] Dus sensitiviteit daarvoor, van, nou, ja hè: Hij zegt wel ja, maar dat kan nooit kloppen.’ (participant 6, vq.06.27)

‘Wat een absolute no-go is: Dat je allerlei contractuele… Bij dit soort projecten moet je geen zware [telefoon trilt] oh sorry, contractuele discussies gaan hebben. Dat is veel te link bij dit soort projecten.’ (participant 6, vq.06.28)

‘Je moet eigenlijk continu voor jezelf je projectteam even ter sprake brengen: Ok, is dit in deze fase op dit moment nog steeds de juiste mensen en het juiste team? Of moet ik het nu veranderen? Dus eigenlijk dat als een verlopend, hè, je gaat door een fasering heen, het team zal ook… Natuurlijk moet je ook een stukje vaste basis hebben, maar op een gegeven moment moet je ook: Ok, dat heb ik nu minder nodig, ik heb nu meer van dat nodig. Dus zelfs op bepaalde posities waar iemand nu perfect functioneert: Ok, maar goed, over drie maanden dan zitten we in die fase en dan moeten we dat anders gaan doen, dus daar moet ik nu al op anticiperen.’ (participant 6, vq.06.29)

‘We doen geen aannames. En ook zelf… Dat je het zo ver krijgt dat mensen zelf tegen jou gaan zeggen: “Maar je doet nu een aanname.” […] Dus zeg maar het goede voorbeeld geven en ook accepteren dat mensen die feedback geven. En dat ook stimuleren.’ (participant 6, vq.06.30)

III.6 Participant 7

‘Ik moet zelf altijd zeggen dat, zeker toen ik met een heel groot team zat: Zorg dat je een goed secretariaat hebt, want dan vraag ik altijd aan hun of er nog iemand ergens problemen heeft, ofzo, weet je wel? Want mij ontgaat dat dan. En dan zeggen ze: “Je moeten even op Piet letten, hè, want die heeft…” Dat zijn, zeg maar, allemaal vaardigheden die je in je team hebt. En dan ook niet denken, van: “Ja, dat regel ik zelf wel.”’ (participant 7, vq.07.01)

‘Dan zag ik een mail voorbijkomen waarvan ik vond: Het ging niet om de inhoud van de mail, maar ik vond dat hij verkeerd gesteld werd. Dus dan laat ik ze hier komen. En dan denken ze: Het gaat om, weet ik wat, het gaat om berekeningen of iets dergelijks. Maar het ging helemaal niet over berekeningen: Het gaat over de manier waarop je praat.’ (participant 7, vq.07.02)

‘Ja, want je zit meer onder de stress. Dus het geldt meer. Het geldt meer, omdat je meer onder druk komt te staan, en je komt als team onder druk te staan. En juist dan heb je het nodig dat je er voor elkaar bent. Dat heeft te maken met de manier waarop je met elkaar, ten opzichte van elkaar, gedraagt. (participant 7, vq.07.03)

‘Wat denk ik belangrijk is, is niet een overdreven ego of ijdelheid of dat soort zaken. Je moet wel een zekere bescheidenheid hebben en je moet plezier uit je werk halen. Niet uit de voorpagina van een blaadje, ofzo. Waarom? Omdat een project uiteindelijk toch altijd van de opdrachtgever is. En, dus een projectleider is, de eerste eigenschap is dat ie niet vooraan staat. […] Een zekere bescheidenheid, of niet te ijdel, is belangrijk. Is echt belangrijk, want ijdele projectleiders vallen in de valkuil dat ze het project van hun maken.’ (participant 7, vq.07.04)

‘Dat is wel leuk, om jezelf op te blazen, maar dan, op het moment dat je het aan anderen laat, betekent ook dat je minder kwetsbaar bent. En daarmee ook denk ik voor jezelf ook een stuk rustiger.’ (participant 7, vq.07.05)

‘Dat was een risico dat we niet onderkend hadden van tevoren. Wat je wel doet is eigenlijk op dat moment heel snel stabiliseren. Hè, dus de kennis erbij halen. “Wat moet ik doen?” Snel stabiliseren. Wat we ook gedaan hebben. Ik, dat. Dus, ook dan, waar je eigenlijk op terugvalt is: Heb ik mijn oplossend vermogen gemaximaliseerd? Heb ik alles in mijn team of at arm's length om bij elkaar te halen bij dat soort dingen?’ (participant 7, vq.07.06)

'En dan ook weer eerst gesproken met een aantal mensen: "Waar zit die kennis?" […] En dat betekent dan dat je op dat moment ook wel weer een beetje, ja, binnen je team het totaal bij elkaar haalt. En dus: Dit is de opgave. Dit is nodig qua kennis en zorg dat je die kennis ook gewoon gemobiliseerd hebt. Dan heb je het al.' (participant 7, vq.07.07)

'Daar moet je wel met jezelf een beetje vrede mee hebben. Dat dat zo is. Dat je niet, en zeker als je dus praat in de context van hele complexe projecten, ja, die kunnen, tussen haakjes, ook fout gaan, hè. Je kunt in de kosten, hè, meer worden dan iedereen gehoopt had, of in de tijd, hè, dat kan gewoon. Dat is een kwestie. Dat is niet een onmogelijkheid.' (participant 7, vq.07.08)

'Als je selecteert voor het Nederlands elftal, dan selecteer je een spits en een keeper. Je gaat niet 11 keepers selecteren, denk ik. Al heb je… Of 20 spitsen, dat is toch niet de bedoeling, hè? Het moet wel allemaal er zijn, wat je nodig hebt om de klus te klaren.' (participant 7, vq.07.09)

'Het is belangrijk om, om, wat ik wel noem, om uiteindelijk het oplossend vermogen in je team te maximaliseren. Maximaliseer je oplossend vermogen. Als je oplossend vermogen in een team, dus om problemen op te lossen, maximaal is, kan je nooit meer dan dat. […] Je hebt gedaan wat je kon.' (participant 7, vq.07.10)

III.7 Participant 8

'Je kunt die harde kant in feite pas effectief uitvoeren, als je die zachte kant hebt geregeld. Dus als je niet werkt aan je relaties in je project, of als je niet werkt aan je persoonlijkheid, aan je karakter, in je project, dan ben je dus minder effectief aan die harde kant.' (participant 8, vq.08.01)

'Duidelijkheid is natuurlijk wel een subjectief begrip, want dat heeft te maken met interpretatie. Maar het gaat er mij om dat je daarmee dus inderdaad het risico aspect tackelt. Zitten er vaagheden of onduidelijkheden in, waardoor je of vertraging hebt, of in een keer, ja, dat er geld bij moet dat je niet had voorzien? Kijk, en daarom moet je doorvragen in mijn beleving.' (participant 8, vq.08.02)

'Als ik mij laat leiden door de angst of de overtuiging dat ik iets fout doe, dan doe ik hier niks meer. […] Er is altijd wel een manager die iets vindt, maar ik laat mij er niet door leiden, want ik kijk naar wat is er goed voor het project om te doen.' (participant 8, vq.08.03)

'Zeggen wat je denkt hoeft niet altijd handig te zijn, maar je moet wel een punt durven maken als je vindt dat iets niet klopt.' (participant 8, vq.08.04)

'Je weet ook niet alles, je bent niet 100% in control. Er is altijd iets waar je je afhankelijkheden hebt naar elkaar, en dat moet je ook durven laten zien. Want mensen die dat niet laten zien, dan klopt er iets niet. Daar reageer ik ook op. Want je kunt niet 100% in control zijn.' (participant 8, vq.08.05)

'Dus doorvragen aan de ene kant om aan de oorzaak te komen en zodra je zicht hebt op de analyse, daar ook naar handelen. […] Dat je dus proactief gaat handelen. Dus je kan eigenlijk zeggen dat ik mijzelf in het proces ruimte geef aan de voorkant om de diepe analyse te maken en aan de andere kant om daar snel naar te handelen.' (participant 8, vq.08.06)

III.8 Participant 9

'Je moet de sfeer weten te creëren dat mensen elkaar vertrouwen. Dat vergt een bepaalde openheid, rust, en ook vertrouwen weer in jou als leider. Dat is een hele belangrijke.' (participant 9, vq.09.01)

'Door steeds voorspelbaar te zijn. Door steeds te doen wat je zegt en te zeggen wat je doet. Dus dat mensen op een gegeven moment gaan geloven dat alles wat je zegt, dat je dat ook

meent. Dus dat is iets wat groeit. […] Als je dat doet, zie je ook wel dat mensen op die manier ook meer vertrouwen gaan stellen in elkaar.' (participant 9, vq.09.02)

'Je hebt dus mensen nodig met inzichten die, die dat dus ook kunnen brengen. Dus er moet een soort openheid en vertrouwen zijn. Vertrouwen is denk ik wel een hele belangrijke.' (participant 9, vq.09.03)

'In een simpel project, om aan die kant te beginnen, kun je in feite van tevoren uittekenen wat er gedaan moet worden en wat daarvoor gebeuren moet. Dat kan je in een redelijk strak kader gieten en je kan dat mensen laten uitvoeren. In een complex project en in een risicovol project heb je nodig dat mensen voortdurend alert zijn op wat er gebeurt en dat ook voortdurend met elkaar delen. Dus je hebt een interactie nodig van een team. En je hebt gewoon alle ogen en alle oren en alle handen nodig om goed te opereren. En je kunt dat niet ondervangen door van tevoren je checklist uit te, zeg maar, gewoon je draaiboek uit te werken. Dat krijg je op die manier niet bestuurd. Je moet, gaandeweg moet je het gaan vinden. Daarom is het ook complex.' (participant 9, vq.09.04)

'Door de ruimte geven en tijd te nemen om deze vragen te bespreken. Want het kost dus tijd, het kost energie. Want je wilt het ook vanuit verschillende inzichten. Dus dat is denk ik een belangrijke voorwaarde. En het moeilijke erin is, want daarom is het eigenlijk moeilijk om het eenvoudig te maken, dat je wel degelijk ook heel veel "ja, maars" krijgt die niet relevant zijn. En je wilt uiteindelijk ook wel weer to the point komen. Dus het is een voortdurend schakelen tussen ruimte geven en het ook gefocust te houden.' (participant 9, vq.09.05)

'Hoe je het ook doet, het komt er altijd op neer dat je in het begin ruimte en openheid geeft en zeker weet dat alles wat er mogelijk kan zijn, dat dat er is. En dat je het daarna weer gaat inperken. En alert blijft op, dat je niet zo stringent bent, dat vind ik eigenlijk een van de moeilijkste dingen, dat je zo stringent bent in het weer convergeren dat je eventueel nieuwe relevante inzichten die iemand toch nog krijgt, dat je die niet meteen onder tafel drukt, van: "Ja, je hebt je kans gehad, dat is er niet," zal ik maar zeggen.' (participant 9, vq.09.06)

'Langs die inhoudelijke as is voor mij de essentie dat je in staat bent om het geheel, zeg maar dat wat moet gebeuren, te vereenvoudigen maar niet te versimpelen. Dus je moet vereenvoudigen door te doorgronden wat er moet gebeuren, en uiteindelijk terugbrengen tot de essentie en de essentiële dingen. Ik denk dat dat een vaardigheid is die je moet hebben als project-, programmamanager wanneer je leidinggeeft aan zo'n complex project.' (participant 9, vq.09.07)

'Je kunt een opdracht geven aan iemand en zeggen: "Stel niet van die moeilijke vragen. Hè, ga het gewoon doen. Ga het gewoon uitvoeren. Ik wil gewoon dat jij, ik wil gewoon dat jij daar een muur bouwt." En bij het versimpelen wil je niet de "ja, maar" horen. Terwijl, uiteindelijk gaat het juist om die "ja, maar". […] Het is niet makkelijk om dingen eenvoudig te maken. En ik vind het een vaardigheid van echte leiders om dat uiteindelijk wel te doen.' (participant 9, vq.09.08)

'Je wilt de discussie aan. In het voorbeeld dat ik net gaf, van: Als wij nu daar een muur gaan bouwen, waar moeten we dan rekening mee houden?' (participant 9, vq.09.09)

'Dus je moet op de een of andere manier de goede vragen weten te stellen. De juiste antwoorden, de antwoorden op waarde weten te schatten. En uiteindelijk gewoon te snappen: Wat zijn nou de essentiële vragen waar je een antwoord op moet gaan geven als project/programma? En, nou ja, dat is best een spanningsveld. Wat ik al zeg: Vereenvoudigen zonder te versimpelen.' (participant 9, vq.09.10)

'Je zal er ook wel bescheidenheid voor nodig hebben, namelijk dat je het zelf allemaal niet weet. Daar zie je het ook nog wel eens op misgaan. Dus, misschien, misschien is dat wel gewoon een andere belangrijke component. Je moet ook wel op een bepaalde manier bescheiden zijn en aanvaarden dat je de kennis en inzichten van andere nodig hebt om uiteindelijk tot iets goeds te komen.' (participant 9, vq.09.11)

III.9 Participant 10

'En die signalen, die waren eigenlijk heel erg belangrijk om op de juiste manier, tijdige manier, ergens een vraag over te stellen. Iemand zat niet lekker in zijn vel. Ik had dat nog niet gezien. Nou, wat is er aan de hand? Ik ga even een kop koffie met hem drinken. Ja, dat, en dan soms kwam er een heel emotioneel verhaal opeens achter wat je… Blij dat ik dat nu zie en hoor, dan. En de andere kant zei, van: "Ik ben blij dat ik het nu heb mogen vertellen." Wacht daar niet mee, maar kom daar mee. Die deur staat altijd letterlijk en figuurlijk open. En dat heb ik ook altijd tegen iedereen gezegd, van: "Ga daar niet mee wachten," want dan kan ik je helpen. Want dat is mijn rol ook. Ik gun jou plezier in je werk. Ik moet ook kunnen zorgen dat je met plezier moet kunnen werken. En als dat niet kan of je zit met dingen dwars of je loopt over, je kan het niet aan, dat kan ook, de druk wordt te hoog, dan moeten we daar ook wat aan doen. Ja, daar zit die… Als je daar oog voor hebt en houdt, dan heb je ook een geoliede machine.' (participant 10, vq.10.01)

'Het zit hem denk ik ook wel in inlevingsvermogen. Verplaats je eens in de andere rol. Daar hebben we het ook over gehad, hè, van: Stel, jij bent nou de opdrachtgever, en jij, en ik de opdrachtnemer. Hoe gaan we het dan doen? Wat zou er dan gaan spelen? Als je daarover nadenkt, dan krijg je ook meer begrip voor een situatie waarin een opdrachtnemer terecht komt. En dat wederzijdse begrip, dus ook zij naar ons…' (participant 10, vq.10.02)

'Die werden eigenlijk op de werkvloer vaak opgelost en als dat niet kon, dan werd tijdig geëscaleerd naar [de projectmanager van de aannemer] en mij. Als wij er niet uit konden komen, dan konden wij naar onze opdrachtgevers. […] En dat was een werkwijze die heel erg goed beviel.' (participant 10, vq.10.03)

'De collegiale toets hebben we ook geïntroduceerd: Kijk eens een keer bij iemand anders over de schutting en hoe hij dat doet. En stel daar vragen over. Ga daarover in gesprek.' (participant 10, vq.10.04)

'Maar ook naar de aannemer, van: Wat zie je nou bij ons? Want de aannemer vroeg uit zichzelf, dat was onderdeel van de afspraken, beoordeel mij op deze zes aspecten. Ja, dan ga je daar een verhaal over schrijven. Toen dacht ik: Dat is heel leuk. Dan haal ik dat in het team op en dat verzamel je en dan uiteindelijk geef je dat terug en heb je daar een gesprek over met de aannemer. En toen zei ik: Eigenlijk is het heel erg onevenwichtig als ik nou niet de vraag aan jou stel: Wat vind je van mij, de opdrachtgever? Dat heb ik ook gedaan. Dus uiteindelijk, dat leidde telkens tot spiegelgesprekken. En dat bleek van hele grote toegevoegde waarde, want de aannemer zag echt op een aantal punten genadeloos waar wij ons nog in konden verbeteren. En dat hielp: Omdat wij ons verbeterden, hielp hem dat zelf weer. Dus het was eigenlijk. Omgekeerd heeft dat ook zo gewerkt. Met andere woorden, dan heb je een hele andere manier van met elkaar omgaan.' (participant 10, vq.10.05)

'Dat hoeft niet iedere maand, dat mag ook per kwartaal. Dat is heel veel, het kost heel veel personele inzet van de aannemer om dat allemaal weer op te schrijven. Ik heb veel liever dat, bij wijze van spreken tijdens de rit, die sleutelfiguren met elkaar sparren en een kop koffie drinken en vertellen hoe het met elkaar gaat.' (participant 10, vq.10.06)

'De aannemer zat tegenover ons. Wij zaten in een gebouw en de aannemer zat in de keet bijna tegen ons gebouw aan. En dat. Ook die korte lijntjes, dat is ook heel belangrijk. Snel bij elkaar binnenlopen, niet wachten totdat er weer een formeel moment was. Nee, juist die informele momenten gebruiken om dit soort dingen gewoon op te pakken. Dat deden zij ook. Dus dat. We vonden allebei dat dat vooral moest gebeuren.' (participant 10, vq.10.07)

'Ik zeg altijd: Een contract, dat is geformaliseerd wantrouwen. Als je het contract de hele tijd op tafel hebt liggen en je zegt: "Ja, maar dat hebben we niet afgesproken, dat moet je zo doen." Als dat steeds gebeurt, nou ja, dan krijg je irritaties. Als het contract gewoon in de la blijft liggen en je kunt het hebben over samenwerking, dan doe je het in mijn ogen veel beter.' (participant 10, vq.10.08)

‘En dan ging het gesprek niet alleen over de rol van de medewerker maar ook over mijn rol. Ik heb ook altijd gevraagd: Wat vind je van mij? Want dat helpt mij weer in mijn leiderschap en mijn sturing geven aan dit proces.’ (participant 10, vq.10.09)

‘Het begint met lef hebben om daar aandacht aan te besteden. Want dat is… Sommigen denken van: “Oeh dat daar begin ik niet aan, dan ga ik mij erg kwetsbaar opstellen.” Ik vind dat je je juist wel kwetsbaar moet opstellen.’ (participant 10, vq.10.10)

‘Wat ik eigenlijk altijd wel doe is, van, expliciet werken. Het is heel vaak zo… Het nivea-principe ken je, hè? Niet invullen voor een ander. Heel vaak denk ik dat ik al weet wat goed is voor jou en ik vul dat in en ik heb het er niet met jou over. Maar als ik weet wat ik wil, en jij weet wat jij wilt, en ik weet ook wat jij wilt en jij weet wat ik wil, dan zijn we er, hè? Dan hebben we het allemaal expliciet gemaakt.’ (participant 10, vq.10.11)

‘Als jij uit gaat stralen van: Ik weet het allemaal het beste, dan kun je zo’n project niet runnen. Daar ben ik echt van overtuigd. Ik denk ook dat een aantal projecten gewoon last hebben gehad van een veel te dominante leider. Die, bij wijze van spreken, er erg boven stond. En ik zeg van: “Ik sta ertussen.”’ (participant 10, vq.10.12)

‘We hadden ook spelregels ontwikkeld. Die hebben we ook samen ontwikkeld in de project-startup: Wat zijn voor jullie nou de dingen die belangrijk zijn? Die hebben heel veel met dat inlevingsvermogen te maken, want dingen die ons irriteren, bij jullie irriteren, bij ons irriteren, laten we het daar maar gewoon over hebben. Daar hebben we last.’ (participant 10, vq.10.13)

‘Dit is misschien wel numero één. Want als je elkaar plezier in het werk gunt, ja, als mensen lol in hun werk hebben, dan zijn ze tot veel meer in staat dan als je met chagrijn naar je werk gaat. En, uh. Dus heb ook gewoon in de gaten: Als iemand zit te somberen of geen plezier heeft, doe daar wat aan. Dus, wat zit daar mis? Dus met andere woorden: Heb het erover.’ (participant 10, vq.10.14)

‘Dus die vingen dingen op die ik niet hoorde of zag. Dus ik zei: “Als jullie dingen opvallen, dan moet je het tegen mij zeggen. Ik zie niet alles, hoor niet alles.” En daar heb ik een hoop van geleerd weer, want daardoor gaat je eigen antenne wel wat meer ontwikkelen.’ (participant 10, vq.10.15)

‘Als een afspraak niet werd nagekomen, dan moest je ook nagaan: Waarom is dat nou niet gebeurd? En moet je ook zeggen: “Dat accepteren wij niet, want als je een afspraak niet nakomt, of kunt nakomen, dan waarschuw je ons en dan tref je ook een beheersmaatregel.”’ (participant 10, vq.10.16)

‘En gaandeweg wordt het een grotere organisatie, die voor de helft uit gemeentelijke functionarissen bestaat en voor de helft uit inhuur, om de eenvoudige reden dat je die deskundigheden niet in huis hebt om dat project te runnen.’ (participant 10, vq.10.17)

‘Dus een van de dingen die ik als leider ook heb gedaan: ik wilde gewoon dat ik een organisatie had die geëquipeerd was om dit te doen. Dus we hebben ook mensen ingehuurd die ons hebben opgeleid. Door de jaren heen is dat eigenlijk ook, dus lerende wijs, learning by doing, daar ben ik heel erg van, want je kunt niet alles uit boekjes leren. Maar je moet ook niet denken dat je zomaar van alles de eerste keer goed doet, dus haal er dus ook bij wijze van spreken deskundigheid bij of collega’s of deskundigen bij die jou daarbij kunnen helpen of daar ook in kunnen opleiden.’ (participant 10, vq.10.18)

III.10 Participant 11

‘Ook ontzettend ontvankelijk zijn voor als de situatie wanneer er gebrainstormd moet worden. Wanneer, zeg maar, de kennis en de kunde en de vaardigheden van de personen of je medewerkers in de afdeling naar boven moeten komen. Dan moet je als projectmanager gewoon even een stap terug doen en dan moet je luisteren.’ (participant 11, vq.11.01)

'Je moet je ook in kunnen leven in de problematiek van iemand anders.' (participant 11, vq.11.02)

'Vertrouwen hebben en dat je het van elkaar weet. Als ik met jou moet samenwerken of met drie, vier man moet samenwerken, dan wil ik graag weten. Dan moet je er juist over gaan praten. En dan mag je best heel verschillend, mag je totaal verschillend in elkaar zitten als persoon of als manier van doen. Maar wel, uiteindelijk, moet je elkaar meenemen en moet je elkaar kunnen vertellen van waar je zelf staat en wat je van de ander verwacht. Hè, en dat is, dan krijg je ook stabiel projectmanagement. Als je merkt dat mensen open staan voor elkaars manier van werken… En ook als dat verschillend is en dat is verschillend, dat kun je van me aannemen dat dat allemaal verschillend is.' (participant 11, vq.11.03)

'Ik probeer altijd heel open te zijn naar iemand toe en misschien wel eens te kwetsbaar. Ik ben nooit een leidinggevende geweest die van bovenaf dirigeert. Dat kan ik niet. Dat is niet mijn stijl, want dat is niet echt. Dat voel ik zelf, dat dat niet echt is. Ik kan niet iemand iets opdragen en ik kan wel iemand iets vragen. Maar echt opdragen, één keer wel, maar dat is niet mijn stijl. Dus ik laat eerder iets van mijzelf zien, van mijn eigen zwakke kanten en wat mij drijft eigenlijk. Niet dat, ja, je passie, zeg maar, laat je zien. Daardoor, dat je anderen daardoor in beweging krijgt. […] De ander moet daar ook, moet daar ook ontvankelijk voor zijn. Ja, je hebt mensen die heel, die alles willen weten, maar niks van zichzelf vertellen. Nou, die krijgen van mij niet gauw vertrouwen. Ik bedoel: dat wordt dan wel heel moeilijk om zo'n iemand vertrouwen te geven als je zelf wat moet vertellen en de ander geeft, die geeft niks terug.' (participant 11, vq.11.04)

'Maar transparant in de risico's… Dat heeft ook met vertrouwen te maken. Als je transparant bent in je risico's, in je onzekerheden dan, dat helpt absoluut mee in het beheersbaar zijn van het project. Dus ikzelf, ik ben de laatste jaren wel een voorstander geworden van een consequent en transparant risicomanagement. Dat is eigenlijk heel simpel. Dan hoef je nog niet, hoef je zelf niet alles te doorgronden. Maar je krijgt vanuit je risicoanalyses, vanuit de disciplines, waar zij de kansen zien, waar zij hun zwakste delen zien krijg je gewoon rechtstreeks informatie en je ontwikkelt en monitort gewoon de ontwikkeling om de drie maanden.' (participant 11, vq.11.05)

'Maar als je alleen op de corrigerende manier je werk gaat doen en vergaderingen gaat leiden, dan zal iedereen slaat dicht en dood. En je merkt, en dat is volgens mij, ik ben nog geen andere mensen tegengekomen, of je moet een heel uitzonderlijk mens zijn: iets waar je een schouderklopje krijgt voor iets, hè, ook al is het nog zo evident, dus dat, dat stimuleert enorm de stukjes transparantie.' (participant 11, vq.11.06)

'Stel je maar eens op als projectmanager zijnde van een grote organisatie, van je: Hoe doe je het in deze organisatie? Niet in je bedrijf ofzo, nee, met wie werk je samen? En als je dat een keer doet na driekwart jaar of een jaar, wat je met een project moet doen, nou, het komt het project ten goede. Want iedereen, op dat moment ben je anoniem, hè, hoewel je het daar, daarna hoeft het niet meer anoniem te zijn. Maar als je het op het moment dat ie het doet dus dan is het even anoniem. Maar toch heeft mogen zeggen wat ie zelf voelt. Nou, dat is belangrijk.' (participant 11, vq.11.07)

III.11 Participant 12

'We hebben heel veel tijd gestopt in het meekrijgen van de omgeving, de brownfield omgeving waarin het plaatsvond, om dat voor elkaar te krijgen. […] En op alle levels hebben we daar veel kopjes koffie gedronken, zoals we dat noemden, om mensen maar te laten snappen: Wat we gingen doen, waarom we het gingen doen, hoe we het gingen doen, hoe we het bedacht hadden, of ze zelf nog ideeën hadden om zaken anders of beter te doen, of we nog zaken vergeten waren. Dus daar zat heel veel voorbereidingstijd voor de uiteindelijk uitvoering. En daardoor hebben we consensus gekregen en gehouden ook, want je bent er niet alleen met één keer een gesprekje. Het is af en toe even een belletje of even een mailtje.' (participant 12, vq.12.01)

‘Dat is denk ik een stuk openheid van zaken. De zaken benoemen, dus, zoals ze zijn. Je dilemma’s daarbij ook voorleggen, dus toelichten, keuzes waarom je die gemaakt hebt. En, ja, ze meenemen bij de eventuele afwegingen daarbij. Dus om te voorkomen dat je straks, achteraf, ook discussies krijgt van: “Ja, maar, hoe hebben ze dat nou zo kunnen bedenken?”’ (participant 12, vq.12.02)

‘Proberen niet te oordelen over goed en fout. Maar wel, van joh: We staan hier nu samen voor. Zeg het maar. Je kan nu nog meedenken in mogelijkheden en oplossingen. En we zijn daar echt in een vroeg stadium heel bewust mee begonnen.’ (participant 12, vq.12.03)

‘Maar dan gaan we samen die boodschap overbrengen, en laat er dan maar een keus gemaakt worden. En als dat niet het projectbelang dient, nouja prima, dan gaan we escaleren. Dus ook heel duidelijk, van, het pad schetsen: Dit betekent het als we er samen niet uit komen.’ (participant vq.12.04)

‘Maar als er gelijk al geoordeeld wordt, van: “Ja, maar hoe kom je daar nou bij?” Of: “Wat weet jij er nou van?” Dan zegt zo’n persoon een volgende keer niet zo snel weer iets wat ie vindt, wat op dat moment misschien wel heel relevant is. Dus, dat betekent dat je als leider daar ook gewoon scherp op moet zijn, van, hoe wordt erop gereageerd? En je moet duidelijk laten zien dat je er niet van gediend bent dat meteen dat oordeel erop komt. Stempel. “Wat weet jij er nou van?” Ho, wacht even, hij zegt het niet met een reden om het jou lastig te maken. Hij zegt vanuit de oprechtheid dat hij daar zorgen om heeft.’ (participant 12, vq.12.05)

‘Er wordt bovenal gevraagd dat je al na hebt gedacht over het scenario wat er dan in werking moet gaan treden.’ (participant 12, vq.12.06)

‘Je kan wel zeggen, van: “Ik heb hier nu een timeframe van achttien uur stilstand. Ik denk wel dat dat dat ongeveer klopt.” Ja, maar, sorry, maar met alle respect, “Ik denk wel dat dat ongeveer klopt,” daar kan ik niks mee. Ik wil dat jij commitment hebt van jouw leveranciers dat het gaat kloppen.’ (participant 12, vq.12.07)

‘Het eerste wat mij te binnen schiet is de perceptie op complexiteit. […] Het bagatelliseren van eigenlijk de opgave die je hebt. En hoe ga je dat nou vormgeven? En hoe krijg je nou mensen zover dat ze zich ook bewust worden van de risico’s, de complexiteit die er al dan niet in zit?’ (participant 12, vq.12.08)

‘En soms is dat gewoon, zijn er best wel pittige discussies geweest. Maar altijd met het grotere doel voor ogen. De belangen op tafel. En eerst was het van: Ik hou mijn kaarten voor me. En wat kom je hier nou doen? En waarom ben je er nu al? En ga je dat alleen maar doen of wat ga je nog meer doen? Dus consequent gewoon vasthouden aan die transparantie ook. En, ja, er gewoon voor zorgen dat je in een setting komt dat je ook die transparantie gaat ontvangen. Dus dat die kaarten voor de borst, dat die gewoon op tafel gelegd worden.’ (participant 12, vq.12.09)

‘Ga nou eens met die planner praten van die productie. Wat dat voor hem betekent. Verdiep je daar eens in. Besef ook wat, als jij uitloopt, wat dat voor hem betekent. En wat dat voor het bedrijf betekent. Ik heb ook, zeg maar, een aantal mensen gewoon naar buiten gestuurd: ga nou eens met hem praten. Besef, ga eens beseffen als je aan de andere kant zit, wat dat betekent.’ (participant 12, vq.12.10)

‘Dat iedereen ruimte krijgt om zijn zorgen te uiten, zijn zegje te doen, er wat van te vinden. […] Ik ben ervan overtuigd dat als je dat voor elkaar weet te krijgen in een team, en daar heb je uiteindelijk iedereen voor nodig, hè, dan kun je die, dan kun je alles aan.’ (participant 12, vq.12.11)