

APPLIED LEADERSHIP STYLES ON VARIOUS CONTRACT TYPES



| Graduation report P5
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I. PREFACE

From the beginning of my master on, I was interested in project managers and their leadership style. How can the way of communication and cooperation influence the outcomes of a project? It is all dependent on people and that attracted me the most within the master track. However, this already became clear in the bachelor where I, as the project manager of my group, had to deal with a 65 year old student. How could a 21-year-old like me be leading a 65-year-old with way more experience? The way of dealing with people hit me again during a project in the Building Technology master. During the MEGA project I had to manage a group of students that all had more affinity with design than with (financial) feasibility. As the manager I was responsible for the feasibility of the project, but how could I achieve that if the whole group did not take it into account? In retrospect I think I did not manage that situation well, probably because I used a wrong leadership style. This had a big impact on the end result, but also on the way I felt about the project. The circumstances of the bachelor and the MEGA project were completely different, which made me think: do external factors have influence on the leadership of project managers? I think it does and that is what I investigated in this research and therefore I used a current trend that is visible in the real estate market: the shift from traditional to integrated contracts. Are different leadership styles used when there are different contract types? That is the main question I have worked on the last year. In this graduation year I did not only learn a lot about leadership styles and project management, but also some important research abilities, such as choosing direction in the subject and having a critical faculty regarding the existing literature and theories. This report gives the complete overview of what I have achieved this year.

2. ABSTRACT

Background:

This report is the graduation report of Sarah Heemskerk for the master Management in the Built Environment at the TU Delft. The research is done into the difference of leadership styles of project managers in real estate projects when the contract type differs. Integrated contracts are seen more and more often in the real estate sector and that raises questions about the work of the project manager. This research gives the first view on differences in applied leadership styles when this relatively new contract type is compared with the traditional contract type.

Methods:

For this research the leadership style of project managers is measured on the base of seven competencies: vision and imagination, strategic perspective, engaging communication, empowering, self-awareness, emotional resilience and influencing. A self-assessment questionnaire has been developed based on the LDQ of Dulewicz and Higgs (2005), since the LDQ was not available to use. The questionnaire consist of two parts: general and project-based. The scores on the competencies are used to define the applied leadership style of project managers in situations with different contract types.

Results:

54 project managers participated in the research and filled out the questionnaire. The sample was largely male, had a long experience as project manager and worked in the public real estate sector. The participants themselves did expect a difference in leadership style when other contract types are concerned.

Conclusion:

While the results show little statistical differences, there is still enough reason to take conclusions from the results. The project managers in general do not show large differences on the score of the competencies, but there are differences visible in the project-based score for different contract types. The emotional competencies and vision and imagination have a higher score when integrated contracts are used. Strategic perspective has a lower score when integrated contracts are used. For traditional contracts there is a bias towards a goal-oriented leadership style, while for integrated contracts there is a bias towards an engaging leadership style.

3. SUMMARY (ENGLISH)

This is a summary of the master thesis of Sarah Heemskerk for the master track Management in the Built Environment of the faculty of Architecture and the Built Environment of Delft Technical University.

The subject of the graduation has been chosen based on two aspects: a current trend in the real estate sector and a personal preference. The personal preference entails project management and mostly the social aspect that has a big impact on the results of a project, which is reflected in the leadership style of project managers. The selected real estate trend in the rise of integrated contracts in the sector, of which an essential part was the development of the uav-gc 2005 contract type (Chao-Duvis, Koning, & Ubink, 2008). These two aspects are combined which resulted in the following main research question: *Which leadership style is applied by project managers in situations with different contract types?* The research can be divided in four parts: a literature study, the research design, the data and the analysis. These four elements also form the structure of this summary and will be addressed in that order.

3.1 LITERATURE STUDY

The literature study can be separated in four parts: leadership in general, leadership styles, methods to measure leadership styles and expectations from literature for this research.

Leadership has been studied for a very long time and the various thoughts about leadership can be divided into six different schools of leadership theory (J. R. Turner & Müller, 2005). The timeline in Figure 1 shows in which timeframe the different schools were developed.

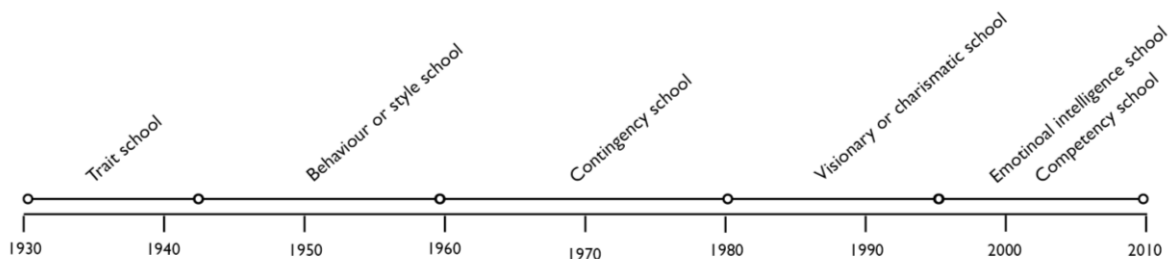


Figure 1: Timeline of schools of leadership theory

The theory about leadership started with the trait school, in which it was suggested that leaders are born with specific characteristics and therefore good leadership cannot be taught (Kirkpatrick & Locke, 1991). In the 1940s the theory switched from the trait to the behaviour school. The behaviour (or style) school suggests that effective leaders use certain behaviours or styles, which can be developed (Müller & Turner, 2007). In the 1960s this school was further developed into the contingency school, that still addresses specific behaviours of leaders but adds the influence of circumstances influence on the behaviours should be used (House, 1971). The visionary school made a division into two types of leaders: transactional and transformational (Bass, 1990). This school also mentions the difference in circumstances: where transactional leadership should be applied in stable situations, while transformational leadership should be applied in situations of change. Since the 1990s there have been two ways of thinking about leadership shown in the emotional intelligence and the competency schools. The emotional intelligence school states that intellectual competencies of a leader are subordinate to the emotional intelligence of the leader (Goleman, Boyatzis, & McKee, 2002). The competency school argues that leaders should have certain competencies, which besides emotional competencies also includes intellectual and managerial competencies (Dulewicz & Higgs, 2005).

The second part of the literature review focussed on the various classifications in leadership styles. From the contingency school on research accepts that various styles of leadership can be suitable. Since the 1960s researchers have developed categorizations of leadership styles. Table 1 gives an overview of five different categorizations of leadership style.

Fiedler & Chemers (1967)	Turner (1999)	Bass (1990)	Goleman, et al. (2002)	Dulewicz & Higgs (2005)
Task oriented	Bureaucratic	Transactional	Commanding	Goal-oriented
	Autocratic		Pacesetting	
Participative	Democratic	Transformational	Visionary	Involving
			Affiliative	
	Laissez-faire		Coaching	Engaging
			Democratic	

Table 1: Leadership categorizations (Bass, 1990; Dulewicz & Higgs, 2005; Fiedler & Chemers, 1967; Goleman et al., 2002; J. R. Turner, 1999)

While the researchers all use different term, there is a similarity in the way of reasoning. Most researches place leaders on one side that are oriented toward tasks, goals and achievements. Those leaders give their followers a specific task which they have to complete, the leaders set goals and do not include their followers in the decision making process. These types of leadership are located at the top of Table 1. On the others side, leaders are identified that involve their followers in the whole process. They coach their followers and stimulate them to achieve personal goals rather than overall goals. This type of leadership is located at the bottom of Table 1. The two extremes have multiple leadership styles in between, for which all researchers have made their own division. In this research the categorization of Dulewicz and Higgs (2005) is used to identify the leadership styles of the participating project managers.

The third part of the literature review includes the methods and exact questions that can be used to measure leadership styles. An example is the Multifactor Leadership Questionnaire (Bass, 1990), which is further developed by Dulewicz and Higgs (2005) into the Leadership Dimensions Questionnaire, who introduced external factors in the questionnaire. The questions of the LDQ are commercially published and therefore not useable in this research due to the limited budget. A literature search has been performed in order to find examples of complete questionnaires or example questions. This search resulted in 60 articles of which the abstracts have been read. Out of the 60 articles, 24 seemed to be suitable for this research since leadership style was measured and a questionnaire was used. These 24 articles have been read completely and only three included a whole questionnaire. An additional four articles included example questions. The founded complete questionnaires could not be used as such, since they measured only one specific leadership style. The example questions that have been found, combined with the description of the LDQ were used as the base for a self-developed questionnaire for this research.

The LDQ measures 15 different competencies of managers in order to define their leadership style, which are divided in three categories. Below an overview of these competencies is given.

Intellectual competencies	Managerial competencies	Emotional competencies
- Critical analysis and judgement	- Engaging communication	- Self-awareness
- Vision and imagination	- Managing resources	- Emotional resilience
- Strategic perspective	- Empowering	- Motivation
	- Developing	- Interpersonal sensitivity
	- Achieving	- Influencing
		- Intuitiveness
		- Conscientiousness

For this research 7 of the 15 dimensions have been selected to use, for two reasons. First of all the timeframe for this research was limited, which made it difficult to elaborate on all 15 competencies. Secondly, the questionnaire that needed to be developed should not be too extended in order to increase the response rate. Asking questions about all 15 competencies would make the questionnaire too long.

The selection of the competencies that were used in this research were based on two sources. Dulewicz and Higgs (2005) presented Figure 2 in their article, which shows the typical scores of the three leadership styles on each dimension (Goal-oriented, Involving & Engaging). Two competencies show a large difference between the leadership styles, which are managing resources and empowering. Three competencies show a small difference between the leadership styles: emotional resilience, motivation and conscientiousness.

LDQ dimension	Low	Medium	High
Critical analysis and judgement	–	E I	G
Vision and imagination	–	E	G I
Strategic perspective	–	E I	G
Engaging communication	–	G I	E
Managing resources	E	I	G
Empowering	G	I	E
Developing	–	G I	E
Achieving	–	E I	G
Self-awareness	–	G	E I
Emotional resilience	–	–	G E I
Motivation	–	–	G E I
Interpersonal sensitivity	–	G I	E
Influencing	–	G	E I
Intuitiveness	–	G I	E
Conscientiousness	–	–	G E I

Note: Profiles of the three leadership styles showing their typical scores on the leadership dimensions questionnaire

Figure 2: Typical scores of leadership styles on the dimensions (Dulewicz & Higgs, 2005)

This table is compared to the research of Müller and Turner (2006), who also used the LDQ to measures leadership styles. They compared the leadership style when various external factors were different. Figure 3 shows scores that are given to the difference in competencies. A high score means that a large difference is visible between the competencies when external factors differ. A low score means that the competencies score

more similar even though external factors differ. Their research is not completely in line with Figure 2. For example emotional resilience, which did not show any difference in the research of Dulewicz and Higgs (2005), shows one of the largest differences in the research of Müller and Turner (2006).

	Application Area	Project complexity	Project importance	Contract type	Life-cycle stage	
Critical analysis and judgement	0	-	-	0	0	3
Vision and imagination	+	+	0	0	+	8
Strategic perspective	-	+	+	+	+	8
Engaging Communication	+	+	0	0	0	7
Managing resources	0	0	-	0	+	5
Empowering	0	+	0	+	0	7
Developing	0	+	-	0	+	6
Achieving	-	0	-	0	+	4
Self-awareness	+	+	0	-	+	7
Emotional resilience	0	+	0	+	+	8
Motivation	-	+	0	0	+	6
Interpersonal sensitivity	0	+	0	0	-	5
Influencing	+	0	0	-	+	6
Conscientiousness	-	-	-	-	-	0

Large difference (2 pt)	+
Small difference (1 pt)	0
No difference (0 pt)	-

Figure 3: Difference in leadership style when external factors vary

Based on Dulewicz and Higgs (2005) and Müller and Turner (2006) the following selection of competencies has been made for this research.

Intellectual competencies

- Vision and imagination
- Strategic perspective

Managerial competencies

- Engaging communication
- Empowering

Emotional competencies

- Self-awareness
- Emotional resilience
- Influencing

The last part of the literature review includes the expectations on this research found in earlier literature. Opinions in literature differ about the effect of external circumstances, such as the contract type, on the leadership style of project managers. Keegan and Den Hartog (2004) claim that the leadership style of project managers is less of influence on the success than the leadership style of line managers. This insinuates that the project managers would not change their leadership style based on external factors, since it would not impact the end result. In contrast Müller and Turner (2007; 2010) claim in both articles that external factors do influence the leadership style of project managers. In their research of 2007 they even state that the contract type influences the leadership style of the project manager. All in all it can be seen that the opinions in literature differ, which makes the end result of this research the more interesting.

3.2 RESEARCH DESIGN

The research aimed to give answer to the question: *Which leadership style is applied by project managers in situations with different contract types?*

In order to answer this question, some sub-questions needed to be addressed first:

1. What competences do project managers have that mostly work in projects with a traditional contract type?
2. What leadership style would fit the competences of these project managers in projects with a traditional contract type?
3. What competences do project managers have that work mostly in projects with an integrated contract type?
4. What leadership style would fit the competences of these project managers in projects with an integrated contract type?

These questions will be answered by measuring the leadership style of various project managers. As stated earlier 7 of the 15 competencies of Dulewicz and Higgs (2005) are used to measure the leadership style. This results in the conceptual framework in Figure 4, which shows how the main research question will be answered.

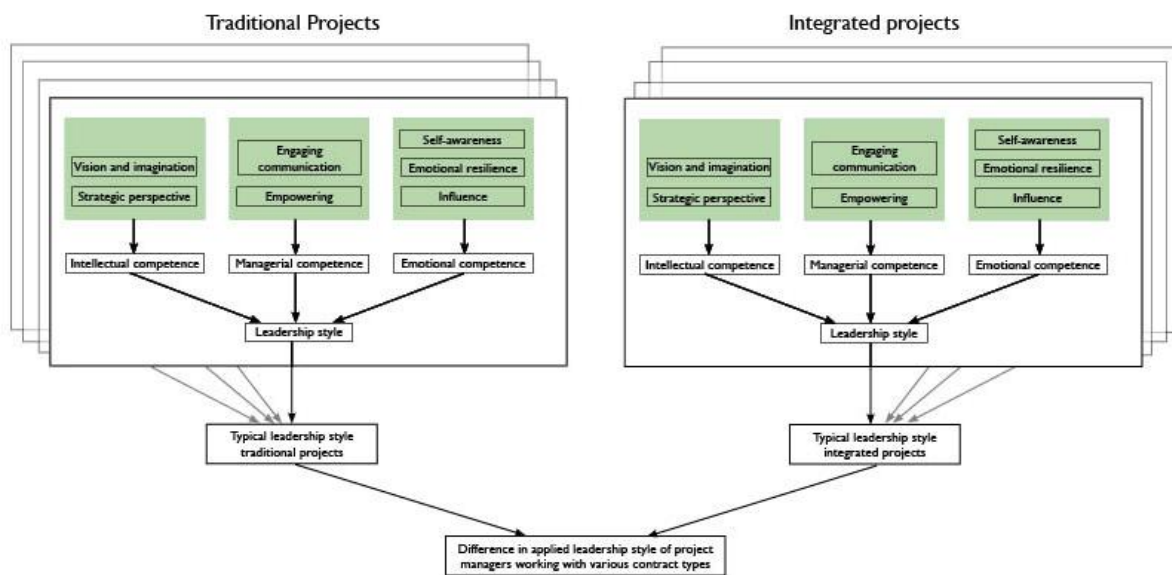


Figure 4: Conceptual framework

For the outcomes of the research, nine hypotheses are developed, based on the typical scores of the leadership style that can be seen in Figure 2. This resulted in the following hypotheses:

Hypotheses	
1	For project managers working on projects with the traditional contract type, the goal-oriented leadership style is more common.
2	For project managers working on projects with an integrated contract type, the engaging leadership style is more common.
3	Project managers working with traditional contracts will score higher on the dimension 'vision and imagination' than project managers working with integrated contracts.
4	Project managers working with traditional contracts will score higher on the dimension 'strategic perspective' than project managers working with integrated contracts.
5	Project managers working with traditional contracts will score lower on the dimension 'engaging communication' than project managers working with integrated contracts.
6	Project managers working with traditional contracts will score lower on the dimension 'empowering' than project managers working with integrated contracts.
7	Project managers working with traditional contracts will score lower on the dimension 'self-awareness' than project managers working with integrated contracts.
8	Project managers working with traditional contracts will score lower on the dimension 'emotional resilience' than project managers working with integrated contracts.
9	Project managers working with traditional contracts will score lower on the dimension 'influencing' than project managers working with integrated contracts.

Table 2: Overview of hypotheses

Since the traditional contract type has been used for a long period of time, this can be seen as a rather stable situation. The integrated contract type is new, which results in an unstable situation that has to be managed. Therefore it is expected that a goal-oriented leadership style is more common when a traditional contract is used. On the other hand, an engaging leadership style is expected to be more common when an integrated contract type is used. The competencies are compared in Figure 2 and the hypotheses are based on the typical competency score of the mentioned leadership styles.

It can be seen that the intellectual competencies (vision and imagination and strategic perspective) are expected to score higher when a traditional contract is used. The managerial and emotional competencies (engaging communication, empowering, self-awareness, emotional resilience and influencing) are expected to score higher when an integrated contract is used.

The next step of the research design was to develop a leadership style questionnaire. The description of Dulewicz and Higgs (2005) is used in order to develop questions for the competencies, combined with example questions from other sources. This resulted in a list of closed questions that measure the leadership style of the participants, which can be found in Appendix 6: Final version questionnaire. The questionnaire is developed in multiple steps.

At first a distinction has been made in two types of questions: general and project-based. This was done in order to improve the validity of the answers. People have a bias towards answering questions positively if it considers the general being of the person. The project-based questions asks about the implementation of certain competencies in practice.

Secondly a wide range of questions has been developed for each competency, of which a selection was made based on multiple criteria based on Van der Pligt and Blankers (2013):

- Plural questions should be avoided, which means that questions cannot contain the word 'and';
- Double denial should be avoided in the questions;
- The questions should be understandable;
- The questions should not be steering, which also meant that questions with a very favourable answer had to be excluded;
- The questions should not be too personal, which would have the effect of people not wanting to answer the questions;
- The questions should be evenly spread between general and project related questions;
- The selected sub-dimensions should all be asked in multiple ways, to obtain the inter-item reliability.

The questionnaire has been translated to Dutch in order to increase the response rate, since it would be spread under Dutch project managers. The translated questions have been checked on reliability by a back-translation to English by a peer. This was done to make sure the meaning of the questions did not change due to the translation. Based on the back-translation minor changes have been made to three of the questions, to secure the validity of the Dutch questionnaire.

The order of the questions has also been addressed, since they were ordered according to the competencies while developing the questionnaire. In the final version this should be mixed, to make sure the participants cannot see the connection between the questions. Personal questions were positioned in a later stadium of the questionnaire to make sure the participants are not scared off.

Open questions are incorporated in the questionnaire to gather descriptive information about the project managers. These questions are also used to make sure other external factors are similar for the participants, which has the effect of changes in the result being due to the contract type and not other factors. The following list of external factors has been questioned:

- The type of project: real estate vs. civil
- The type of project: public vs. corporate
- The size of the project, measured in the budget
- The experience of the project manager: junior/medior/senior managers

The given answers to the closed questions are translated to scores, which is done following Table 3.

Answer	Points
"Helemaal mee eens" OR "Altijd" OR "Helemaal"	3
"Enigszins mee eens" OR "Vaak" OR "Grotendeels"	2
"Enigszins mee oneens" OR "Zelden" OR "Gedeeltelijk"	1
"Helemaal mee oneens" OR "Nooit" OR "Helemaal niet"	0

Table 3: Score of the answers on the closed questions

The eventual score of the project managers on the competencies is represented in three manners: the total score, the general score and the project-based score. The two latter scores are logically based on the two types of questions that are asked in the questionnaire. The total score is the combination of the general and project-based score.

The validity of the research has been secured in multiple ways. First of all there is an inter-item reliability, since each competency is measured with multiple questions (Van der Pligt & Blankers, 2013). Also the combination of general and project-based questions improves the inter-item reliability of the research. The self-assessment has been checked by comparing the scores of the project managers themselves and the scores of the external reviewers. The clearness of the questions has been checked since four peers have answered a test-questionnaire which only resulted in minor changes to the final version. All in all it can be stated that the maximum validity is reached for this research.

3.3 DATA

Data was collected from medior and senior project managers in the Netherlands. In the end 54 project managers participated in the research. Figure 5 and Figure 6 show the ratio of respectively the gender and age of the participants.

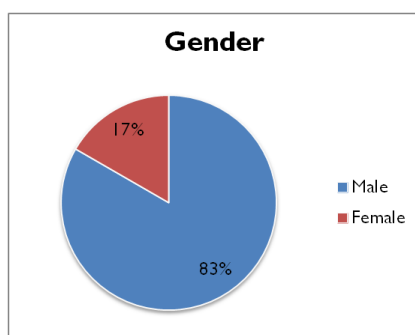


Figure 5: Gender participants questionnaire

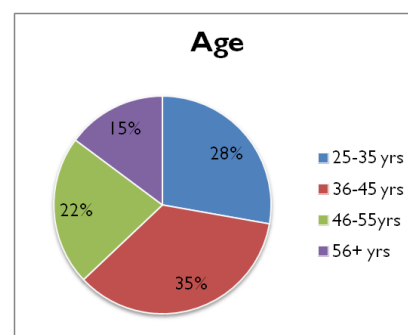


Figure 6: Age participants questionnaire

Figure 7 shows the ratio between the various education levels of the participants, which shows a large group of higher educated participants. Figure 8 shows the years of experience of the project managers, which is strongly related with the age of the participants.

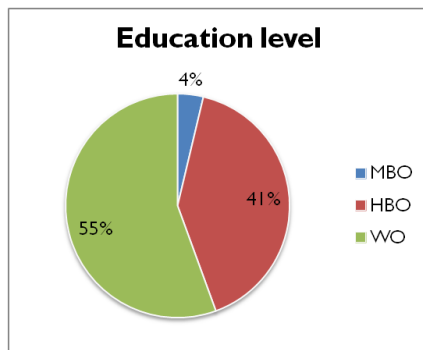


Figure 7: Education level participants questionnaire

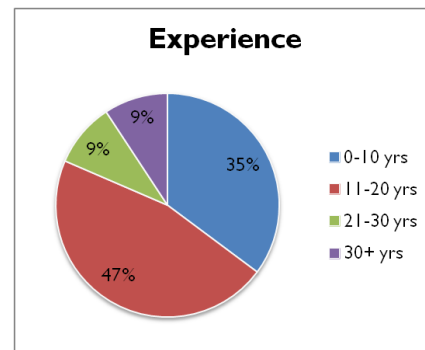


Figure 8: Years of experience as a project manager

The participants were also asked which contract type they used most, of which the answers are shown in Figure 9. Traditional contracts still are the majority of the contract types. Figure 10 shows the answers to the question whether the project managers wanted to be rated by an external reviewer. Here it is visible that a large part of the project managers did not want to get an external review.

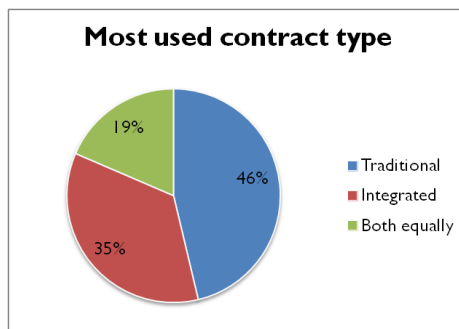


Figure 9: Most used contract type by participants

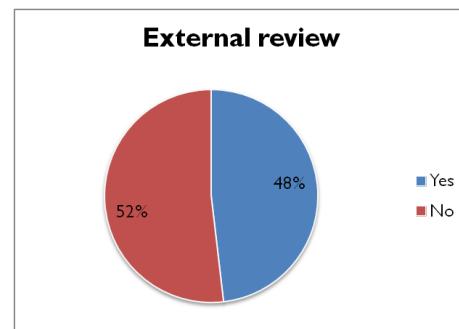


Figure 10: Wish for external review by the participants

The latest descriptive statistic can be seen in Figure 11, which shows the reasons why project managers are allocated to certain projects. It can be seen that the availability of the project managers is the most mentioned reason of allocation. The leadership style of the project managers is mentioned the least amount of times.

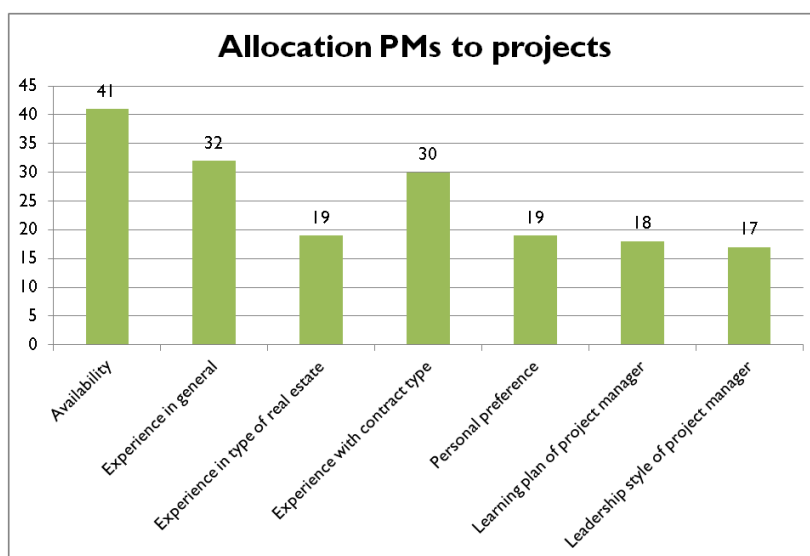


Figure 11: Factors that determine the allocation of project managers to specific projects

3.4 ANALYSIS

The collected data has been analysed and conclusions are drawn. All average scores are relatively high. The participants have rated themselves rather positively on each dimension, which is supported by Figure 12. This figure gives an overview on the answers to all received leadership style questions. 91% of all given answers is the score of 2 or 3, which results in very high scores in general.

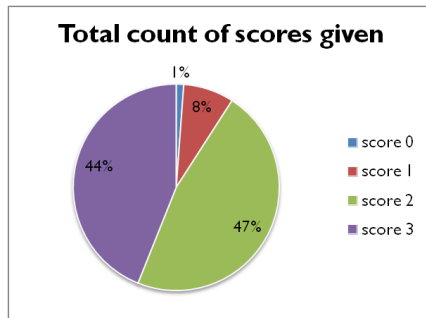


Figure 12: Count of scores on self-assessment

Regarding the contract types, the first comparison is made based on the most used contract type by the project managers and the total score on the competencies.

Table 4 and Figure 13 show the differences in the scores for the contract types. Three competencies have practically the same score on both contract type groups: vision and imagination, engaging communication and influencing. The traditional contract type scores lower on strategic perspective and self-awareness, while it scores higher on empowering and emotional resilience. This is a very interesting outcome, since it is completely spread through the three competency classifications (intellectual, managerial and emotional). However, all these differences are not statistically significant and the differences are most plausible for empowering, emotional resilience and strategic perspective.

An explanation for this can be found in the factors that have influence on the allocation of project managers on the projects, which can be found in Figure 11. The participants clearly indicated that the availability and the experience are factors that are taken into account for the allocation. However, the leadership style is the least mentioned factor that is used for the allocation of project managers to projects. This indicated that also the competency profile of the project managers is not taken into account. This would explain the outcome that there is no clear difference in the competency classifications between the different contract types.

Total score	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
Traditional contract	2,31	2,46	2,50	2,09	2,32	2,34	2,46
Integrated contract	2,32	2,55	2,48	1,93	2,40	2,22	2,44
Sig. unequal means	0,892	0,334	0,861	0,234	0,550	0,282	0,883

Table 4: Total score contract types

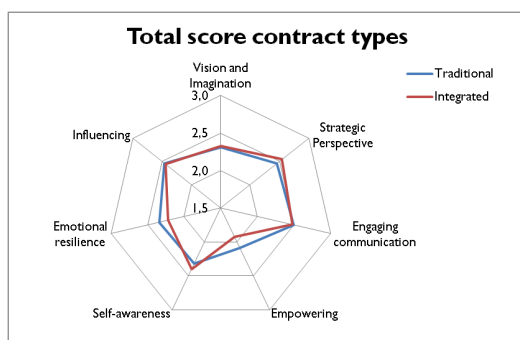


Figure 13: Total score contract types

In Table 5 and Figure 14 the general score of the competencies is compared for the most used contract type of the project managers. In this comparison there is even less difference visible for most competencies between the contract types. It is however visible that there is a clear distinction in the self-awareness score, for which the integrated contracts score significantly higher than the traditional contracts.

General score	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
Traditional contract	2,37	2,52	2,54	2,02	2,39	2,34	2,28
Integrated contract	2,38	2,51	2,61	1,92	2,68	2,25	2,32
Sig. unequal means	0,909	0,912	0,545	0,557	0,032	0,414	0,838

Table 5: General score contract types

Project-based score	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
Traditional contract	2,05	2,54	2,39	2,07	2,18	2,05	2,46
Integrated contract	2,24	2,44	2,35	2,03	2,34	2,26	2,59
Sig. unequal means	0,163	0,326	0,770	0,780	0,229	0,266	0,212

Table 6: Project-based score contract types

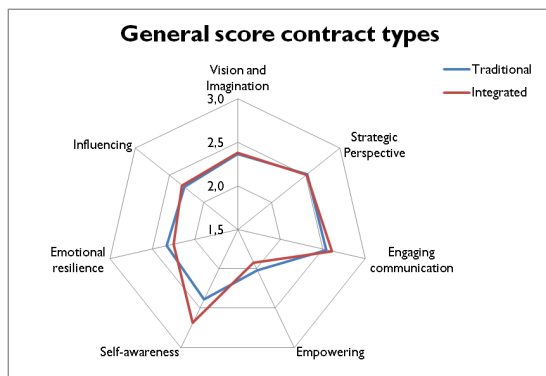


Figure 14: General score contract types

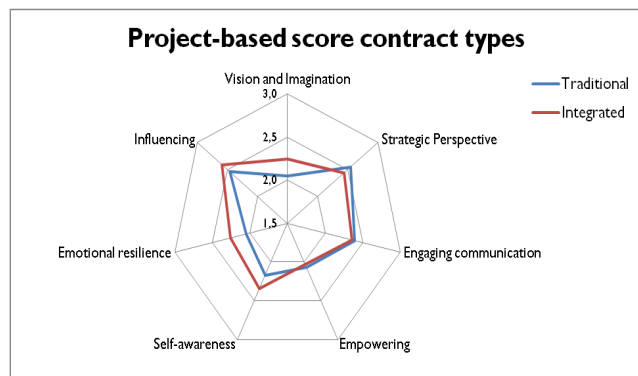


Figure 15: Project-based scores contract types

The last comparison regarding the contract types is based on the project-based scores of the project managers, which are compared for the contract types used in those specific projects. Table 6 and Figure 15 show this comparison. Regarding the managerial competencies (engaging communication and empowering) it is clear that both contract types score almost equally. The intellectual competencies show a difference in the score, since the traditional contract scores higher on strategic perspective, but lower on vision and imagination. This given an inconclusive result for the intellectual competencies. The emotional competencies show on the other hand clearly a higher score for the integrated projects. Apparently the project managers working in integrated project used more of their emotional competencies than project managers working with traditional contracts. This entails for example that they were more aware of their own emotions and had a larger influence on the project team.

It is interesting to see the difference between the general score and the project-based score. Apparently the project managers do not have specific competencies which are matched to the contract type they mostly use, but the competencies that are used during the project are dependent on the contract type that is used at that moment. This is in line with the research of Müller and Turner (2010) which shows the influence of external factors on the leadership style of the project managers.

3.5 CONCLUSIONS

Even though there are little significant differences between the competencies, conclusions can still be drawn since other factors that can have created the differences are ruled out. All hypotheses, apart from hypothesis 7, are therefore not accepted nor rejected, but there is still an indication of the outcome given based on what is plausible.

For each competence a specific hypothesis is stated, of which the first is H3 regarding the vision and imagination. The outcomes of the research are contradictory the hypothesis that project managers working with traditional contracts will score higher on the dimension 'vision and imagination' than project managers working with integrated contracts. The project-based score on vision and imagination shows that the project managers working on integrated project score higher on this competence.

Hypothesis 4, which states that project managers working with traditional contracts will score higher on the dimension 'strategic perspective' than project managers working with integrated contracts is in line with the outcomes of this research. There is a small difference visible on the competency strategic perspective between the two contract types, for which the traditional contract scores slightly higher.

Hypotheses 5 and 6 are not in line with the outcomes of this research. There is no difference visible in the score on engaging communication and empowering between the contract types. In this case the project managers working on traditional projects do not have a lower score on engaging communication and empowering than project managers working on integrated project, but they also do not have a higher score.

Hypothesis 7, which states that project managers working with traditional contracts will score lower on the dimension 'self-awareness' than project managers working with integrated contracts, is in accordance with the outcomes of the research. This is not only visible in the project-based score, but also in the general score. The difference in the general score is statistical significant, which means that this hypothesis can be accepted.

Hypotheses 8 and 9 are in line with the results of the research, since the project-based score in this research shows a higher score on emotional resilience and influencing for project managers working on integrated projects than project managers working on traditional projects. This entails that all emotional competencies show a higher score for integrated contracts than for traditional contracts.

In order to state anything about hypotheses 1 and 2, the leadership style has to be defined that fits the score on the competencies for both contract types. This gives a mixed image, since some of the competencies have the same score. Vision and imagination and strategic perspective would score higher when someone has an goal-oriented or involving leadership style (Figure 2), while the emotional competencies would score higher on an engaging leadership style. This means that the competency profile does not give an 100% score on one specific leadership style. Therefore the leadership style with the most similarities with the competency profile is identified, which for the traditional contracts is the goal-oriented leadership style and for the integrated contracts the engaging leadership style. This is in line with the hypotheses 1 and 2, but the hypotheses cannot be accepted since there is no statistical significance.

The fact that the project-based score shows a large difference with the general score confirms the statement of that leadership is situational: the use of certain leadership characteristics is dependent on the situation (Müller & Turner, 2007). Where there is no difference visible in the competencies in general, there are differences in the use of competencies visible when the situation changes.

In order to answer the main research question: *Which leadership style is applied by project managers in situations with different contract types?*

- There is a bias toward the goal-oriented leadership style when traditional contracts are used.
- There is a bias toward the engaging leadership style when integrated contracts are used.

All differences that are found in this research are small, which is in line with the theory of Keegan and Den Hartog (2004), who state that there are little differences between project managers.

3. SUMMARY/SAMENVATTING (DUTCH)

Dit is een samenvatting van de master scriptie van Sarah Heemskerk voor de mastertrack Management in the Built Environment van de faculteit Bouwkunde van de TU Delft.

Het onderwerp van het afstudeeronderzoek is uitgekozen op basis van twee aspecten: een huidige trend in de vastgoedsector en een persoonlijke voorkeur. De persoonlijke voorkeur beslaat projectmanagement en met name het sociale aspect dat van grote invloed kan zijn op het eindresultaat van het project. Dit is zichtbaar in de leiderschapsstijl van de project manager. De gekozen trend binnen vastgoed is de opkomst van geïntegreerde contracten in de sector, waarin de ontwikkeling van het uav-gc 2005 contract type een grote rol speelt (Chao-Duivis et al., 2008). Deze twee aspecten gecombineerd resulteerde in de volgende onderzoeksvraag: *Welke leiderschapsstijl is toegepast door project managers in situaties met verschillende contract vormen?* Het onderzoek kan worden gesplitst in vier delen: een literatuur studie, het onderzoeksontwerp, de data en de analyse. Deze vier elementen vormen de structuur van deze samenvatting en zullen in genoemde volgorde worden besproken.

3.1 LITERATUUR STUDIE

De literatuur studie is onderverdeeld in vier delen: leiderschap in het algemeen, leiderschapsstijlen, methodes waarmee leiderschapsstijlen kunnen worden gemeten en verwachtingen vanuit de literatuur voor dit onderzoek.

Leiderschap wordt al lange tijd onderzocht en er bestaan verschillende visies op leiderschap, die kunnen worden onderverdeeld in zes leiderschap scholen (J. R. Turner & Müller, 2005). De tijdlijn in Figure 16 laat zien in welke periode de verschillende theorieën zijn ontwikkeld.

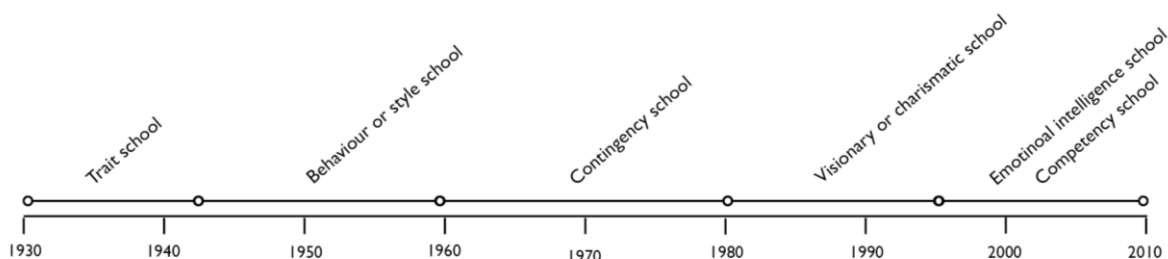


Figure 16: Tijdlijn van de leiderschap theorie scholen (eigen afbeelding)

De theorie over leiderschap begon met de 'trait school', waarin wordt beweerd dat leiders worden geboren met specifieke kenmerken en daarom kan goed leiderschap niet worden aangeleerd (Kirkpatrick & Locke, 1991). In de jaren '40 veranderde de theorie van de 'trait' naar de 'behaviour' school. De 'behaviour' school beweert dat effectieve leiders bepaalde gedragingen of stijlen gebruiken, die kunnen worden ontwikkeld over tijd (Müller & Turner, 2007). In de jaren '60 werd deze school verder ontwikkeld tot de 'contingency' school, die nog steeds specifieke gedragingen van de leiders benoemt, maar ook de invloed van omstandigheden op deze gedragingen toevoegt (House, 1971). Binnen de 'visionary' school worden twee typen leiders omschreven: transactioneel en transformationeel (Bass, 1990). Ook binnen deze school worden de omstandigheden benoemd: transactioneel leiderschap past binnen stabiele situaties, terwijl transformationeel leiderschap binnen veranderlijke situaties past. Sinds de jaren '90 zijn er twee denkwijzen ontstaan wat betreft leiderschap. Dit is te zien in de 'emotional intelligence' school en de 'competency' school. De 'emotional intelligence' school beschrijft dat de intellectuele competenties van een leider ondergeschikt zijn aan de emotionele competenties van de leider (Goleman et al., 2002). De 'competency' school beweert dat leiders over bepaalde competenties moeten beschikken, die naast emotionele en intellectuele ook management competenties bevat (Dulewicz & Higgs, 2005).

Het tweede deel van het literatuur onderzoek richt zich op de categorisering van leiderschapsstijlen. Vanaf de 'contingency' school wordt er geschreven dat er verschillende leiderschapsstijlen passend kunnen zijn. Sinds de jaren '60 hebben onderzoeken classificaties ontwikkeld voor leiderschapsstijlen. Table 7 geeft een overzicht van vijf verschillende classificaties van leiderschapsstijlen.

Fiedler & Chemers (1967)	Turner (1999)	Bass (1990)	Goleman, et al. (2002)	Dulewicz & Higgs (2005)
Task oriented	Bureaucratic	Transactional	Commanding	Goal-oriented
	Autocratic		Pacesetting	
Participative	Democratic	Transformational	Visionary	Involving
			Affiliative	
	Laissez-faire		Coaching	Engaging
			Democratic	

Table 7: Leiderschap classificaties (Bass, 1990; Dulewicz & Higgs, 2005; Fiedler & Chemers, 1967; Goleman et al., 2002; J. R. Turner, 1999)

Ondanks dat de onderzoekers verschillende termen gebruiken voor de leiderschapsstijlen, zijn er veel overeenkomsten in de redenering van de indeling. De meeste onderzoekers plaatsen leiders aan één kant die gericht zijn op doelen, taken en prestaties. Die leiders geven hun volgers een specifieke taak die ze moeten vervullen, waarbij de leiders een doel stellen zonder de volgers te betrekken bij dat proces. Deze leiders zijn gepositioneerd aan de bovenkant van Table 7. Aan de andere kant worden leiders geplaatst die hun volgers betrekken bij het gehele proces. Zij coachen hun volgers en stimuleren hen om persoonlijke doelen te bereiken. Dit type leiderschap is gepositioneerd aan de onderkant van Table 7. Deze twee extremen hebben meerdere stijlen in het midden zitten, waarvoor de verschillende onderzoekers hun eigen verdeling hebben gemaakt. In dit onderzoek wordt de classificatie van Dulewicz and Higgs (2005) gebruikt om de leiderschapsstijlen van de deelnemende projectmanagers te bepalen.

Het derde deel van de literatuur studie bevat the methodes en exacte vragen die kunnen worden gebruik om leiderschapsstijlen te meten. Een voorbeeld hiervan is de Multifactor Leadership Questionnaire (Bass, 1990), die verder is ontwikkeld door Dulewicz and Higgs (2005) tot de Leadership Dimensions Questionnaire. Hierbij zijn externe factoren geïmplementeerd in de vragenlijst. De vragen van de LDQ zijn commercieel gepubliceerd en kunnen daarom niet gebruikt worden in dit onderzoek vanwege het gelimiteerde budget. Een zoektocht in de literatuur was het gevolg om andere enquêtes of voorbeeld vragen te vinden. Deze zoektocht leverde 60 artikelen op, waarvan een kort uittreksel is gelezen. Van deze 60 artikelen, leken er 24 geschikt te zijn voor dit onderzoek aangezien leiderschapsstijlen werden gemeten met behulp van een enquête. Deze 24 artikelen zijn helemaal gelezen en slechts drie bevatten een complete vragenlijst. Daarnaast bevatten er nog vier artikelen enkele voorbeeldvragen. De gevonden enquêtes konden niet in die hoedanigheid gebruikt worden, aangezien ze slechts één specifieke leiderschapsstijl bevraagden. De gevonden voorbeeldvragen en de beschrijving van de LDQ zijn gebruikt om een eigen enquête the ontwikkelen voor dit onderzoek.

De LDQ meet 15 verschillende competenties van managers waarmee hun leiderschapsstijl bepaald kan worden. Deze competenties zijn verdeeld in drie categorieën. Hieronder is een overzicht gegeven van deze competenties. De Engelstalig begrippen worden hiervoor gebruikt, omdat een Engelstalige theorie is gebruikt en dit is doorgevoerd in alle afbeeldingen.

Intellectual competencies	Managerial competencies	Emotional competencies
- Critical analysis and judgement	- Engaging communication	- Self-awareness
- Vision and imagination	- Managing resources	- Emotional resilience
- Strategic perspective	- Empowering	- Motivation
	- Developing	- Interpersonal sensitivity
	- Achieving	- Influencing
		- Intuitiveness
		- Conscientiousness

Voor dit onderzoek zijn 7 van de 15 competenties geselecteerd om te gebruiken, met twee redenen. Ten eerste is het tijdsbestek voor dit onderzoek gelimiteerd, waardoor niet alle 15 competenties uitgewerkt konden worden. Ten tweede moest er een enquête ontwikkeld worden, die niet te uitgebreid mocht zijn, want dat zou het aantal deelnemers verlagen. Met vragen van alle 15 competenties zou de vragenlijst te lang worden.

De selectie van de competenties is gedaan aan de hand van twee bronnen. Dulewicz and Higgs (2005) presenteren Figure 17 in hun artikel, waarin de typische score van de drie leiderschapsstijlen voor elke competentie wordt weergegeven (Goal-oriented, Involving & Engaging). Twee competenties laten een groot verschil in score zien tussen de leiderschapsstijlen, namelijk: managing resources en empowering. Drie competenties laten slechts een klein verschil zien: emotional resilience, motivation en conscientiousness.

LDQ dimension	Low	Medium	High
Critical analysis and judgement	–	E I	G
Vision and imagination	–	E	G I
Strategic perspective	–	E I	G
Engaging communication	–	G I	E
Managing resources	E	I	G
Empowering	G	I	E
Developing	–	G I	E
Achieving	–	E I	G
Self-awareness	–	G	E I
Emotional resilience	–	–	G E I
Motivation	–	–	G E I
Interpersonal sensitivity	–	G I	E
Influencing	–	G	E I
Intuitiveness	–	G I	E
Conscientiousness	–	–	G E I

Note: Profiles of the three leadership styles showing their typical scores on the leadership dimensions questionnaire

Figure 17: Typical scores of leadership styles on the dimensions (Dulewicz & Higgs, 2005)

Deze tabel is vergeleken met het onderzoek van Müller and Turner (2006), die ook de LDQ hebben gebruikt om leiderschapsstijlen te meten. Zij hebben de leiderschapsstijlen vergeleken aan de hand van meerdere

externe factoren. Figure 18 laat de scores zien die zijn gegeven aan de verschillende competenties. Een hoge score betekent dat er een groot verschil zichtbaar is tussen de score op een competentie wanneer de externe factor verandert. Een lage score betekent dat de competentie vergelijkbaar scoort ondanks dat een externe factor verandert. Dit onderzoek is niet geheel in lijn met Figure 17. Bijvoorbeeld 'emotional resilience', die geen verschil laat zien in het onderzoek van Dulewicz and Higgs (2005), terwijl het een van de grootste verschillen laat zien in het onderzoek van Müller and Turner (2006).

	Application Area	Project complexity	Project importance	Contract type	Life-cycle stage	
Critical analysis and judgement	0	-	-	0	0	3
Vision and imagination	+	+	0	0	+	8
Strategic perspective	-	+	+	+	+	8
Engaging Communication	+	+	0	0	0	7
Managing resources	0	0	-	0	+	5
Empowering	0	+	0	+	0	7
Developing	0	+	-	0	+	6
Achieving	-	0	-	0	+	4
Self-awareness	+	+	0	-	+	7
Emotional resilience	0	+	0	+	+	8
Motivation	-	+	0	0	+	6
Interpersonal sensitivity	0	+	0	0	-	5
Influencing	+	0	0	-	+	6
Conscientiousness	-	-	-	-	-	0

Large difference (2 pt)	+
Small difference (1 pt)	0
No difference (0 pt)	-

Figure 18: Verschil in score op competenties wanneer externe factoren verschillen

Gebaseerd op bovengenoemde onderzoeken, is de volgende selectie van competenties gemaakt voor dit onderzoek.

Intellectual competencies

- Vision and imagination
- Strategic perspective

Managerial competencies

- Engaging communication
- Empowering

Emotional competencies

- Self-awareness
- Emotional resilience
- Influencing

Het laatste onderdeel van het literatuur onderzoek bevat de verwachtingen die gevonden zijn in de literatuur met betrekking tot dit onderzoek. Meningen in de literatuur verschillen over het effect van externe factoren, zoals het contract type, op de leiderschapsstijl van project managers. Keegan and Den Hartog (2004) beweren dat de leiderschapsstijl van projectmanagers minder van invloed is op het succes dan de leiderschapsstijl van lijnmanagers. Dit suggereert dat projectmanagers hun stijl niet aanpassen aan de hand van externe factoren, aangezien het weinig effect heeft op het eindresultaat. Daarentegen beweren Müller and Turner (2007; 2010) in hun twee artikelen dat externe factoren wel degelijk invloed hebben op de leiderschapsstijl van projectmanagers. Concluderend kan er worden gezegd dat de meningen in de literatuur verschillen, wat het eindresultaat van dit onderzoek nog interessanter maakt.

3.2 ONDERZOEKSONTWERP

Dit onderzoek heeft getracht antwoord te geven op de volgende vraag: *Welke leiderschapsstijl is toegepast door project managers in situaties met verschillende contract vormen?*

Om deze vraag te kunnen beantwoorden, moesten er eerst enkele sub-vragen behandeld worden:

5. Welke competenties hebben projectmanagers die voornamelijk werken met traditionele contracten?
6. Welke leiderschapsstijl hoort er bij de competenties die deze projectmanagers hebben die vooral met traditionele contracten werken?
7. Welke competenties hebben projectmanagers die voornamelijk werken met geïntegreerde contracten?
8. Welke leiderschapsstijl hoort er bij de competenties die deze projectmanagers hebben die vooral met geïntegreerde contracten werken?

Deze vragen zullen worden beantwoord door de leiderschapsstijl van verschillende projectmanagers te meten. Zoals eerder gezegd zijn er 7 van de 15 competenties van Dulewicz and Higgs (2005) gebruikt om de leiderschapsstijl te meten. Dit resulteert in het onderstaande plan van aanpak voor het onderzoek, waarmee de hoofdvraag kan worden beantwoord.

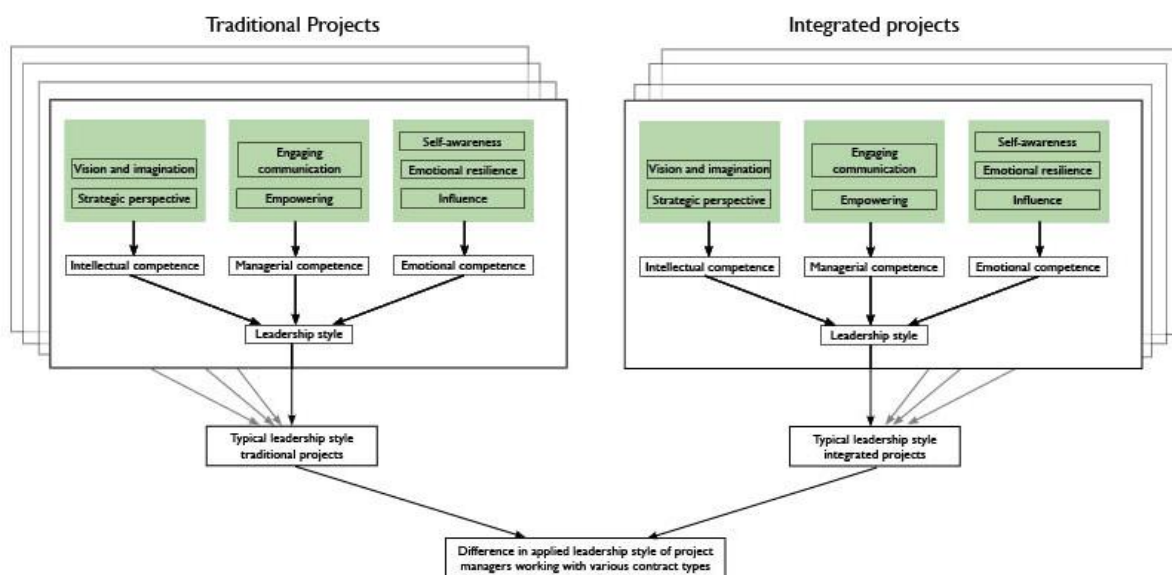


Figure 19: Plan van aanpak voor het onderzoek

Voor de resultaten van het onderzoek zijn negen hypothesen opgesteld, gebaseerd op de typische score op de competenties van de leiderschapsstijlen. Dit resulteert in de volgende hypothesen:

Hypotheses	
1	Voor projectmanagers die werken met een traditioneel contract, is de goal-oriented leiderschapsstijl mee gebruikelijk.
2	Voor projectmanagers die werken met een geïntegreerd contract, is de engaging leiderschapsstijl mee gebruikelijk.
3	Projectmanagers die met een traditioneel contract werken scoren hoger op de competentie 'vision and imagination' dan projectmanagers die met een geïntegreerd contract werken.
4	Projectmanagers die met een traditioneel contract werken scoren hoger op de competentie 'strategic perspective' dan projectmanagers die met een geïntegreerd contract werken.
5	Projectmanagers die met een traditioneel contract werken scoren lager op de competentie 'engaging communication' dan projectmanagers die met een geïntegreerd contract werken.
6	Projectmanagers die met een traditioneel contract werken scoren lager op de competentie 'empowering' dan projectmanagers die met een geïntegreerd contract werken.
7	Projectmanagers die met een traditioneel contract werken scoren lager op de competentie 'self-awareness' dan projectmanagers die met een geïntegreerd contract werken.
8	Projectmanagers die met een traditioneel contract werken scoren lager op de competentie 'emotional resilience' dan projectmanagers die met een geïntegreerd contract werken.
9	Projectmanagers die met een traditioneel contract werken scoren lager op de competentie 'influencing' dan projectmanagers die met een geïntegreerd contract werken.

Table 8: Overzicht van de hypothesen

Aangezien het traditionele contract type al langere tijd wordt gebruikt, kan dit worden gezien als een stabiele situatie. Het geïntegreerde contract type is nieuw, waardoor een onstabiele situatie ontstaat. Daarom wordt er verwacht dat een 'goal-oriented' leiderschapsstijl is gebruikelijker als er met een traditioneel contract wordt gewerkt. Aan de andere kant wordt er verwacht dat de 'engaging' leiderschapsstijl gebruikelijk is als er een geïntegreerd contract wordt gebruikt. De competenties zijn vergeleken in Figure 17 en de hypothesen zijn gebaseerd op de typische score van deze leiderschapsstijlen.

Er wordt verwacht dat de intellectuele competenties (vision and imagination and strategic perspective) hoger scoren wanneer er een traditioneel contract wordt gebruikt. Daarentegen wordt er verwacht dat de management en emotionele competenties (engaging communication, empowering, self-awareness, emotional resilience en influencing) juist hoger scoren wanneer er een geïntegreerd contract wordt gebruikt.

De volgende stap in het onderzoeksontwerp was de ontwikkeling van een leiderschapsstijl enquête. De omschrijvingen van Dulewicz and Higgs (2005) zijn gebruikt om de vragen te ontwikkelen waarmee de competenties kunnen worden gemeten. Daarnaast zijn er voorbeeld vragen uit andere stukken literatuur gebruikt. Dit heeft geresulteerd in een lijst met gesloten vragen, die kan worden gevonden in Appendix 6: Final version questionnaire. De vragenlijst is in meerdere stappen ontwikkeld.

Ten eerste is er een onderscheid gemaakt in twee soorten vragen: generiek en projectgerelateerd. Dit is gedaan om de validiteit van de antwoorden te bevorderen. Mensen hebben de neiging om vragen positief te beantwoorden als deze over de persoon in het algemeen gaan. De projectgerelateerde vragen richten zich op de implementatie van bepaalde competenties in de praktijk.

Vervolgens is er een groot scala aan vragen per competentie ontwikkeld, waarvan een selectie is gemaakt gebaseerd op Van der Pligt and Blankers (2013):

- Dubbele vragen moeten worden voorkomen, wat betekend dat de vragen niet het woord 'en' mogen bevatten';
- Dubbele ontkenning moet worden voorkomen in de vragen;
- De vragen moeten begrijpelijk zijn;
- De vragen mogen niet sturend zijn;
- De vragen mogen niet te persoonlijk zijn, wat als gevolg zou hebben dat mensen de vraag niet willen beantwoorden;
- De vragen moeten gelijk verdeeld worden over de generieke en projectgerelateerde delen;
- De gevraagde onderdelen moet op meerdere manier gevraagd worden, om inter-item betrouwbaarheid te realiseren.

De vragenlijst was in eerste instantie in het Engels opgesteld en moest worden vertaald naar het Nederlands om de hoeveelheid deelnemers te verhogen, aangezien het onder Nederlandse projectmanagers is verspreid. De vertaalde vragen zijn gecontroleerd op betrouwbaarheid door een terugvertaling te doen naar het Engels. Hierbij heeft een peer de Nederlandse vragen weer naar het Engels vertaald, om te controleren of de betekenis niet verloren is gegaan. Aan de hand van deze terugvertaling zijn er minimale aanpassingen aan de Nederlandstalige vragenlijst gemaakt.

De volgorde van de vragen is ook van belang, aangezien ze in eerste instantie waren ingedeeld aan de hand van de competenties. Voor de uiteindelijke versie moest dit worden gemixt, zodat de deelnemers niet kunnen achterhalen wat er met welke vraag gemeten wordt. Hierbij zijn persoonlijke vragen in een later deel van de vragenlijst geplaatst, zodat deelnemers niet direct worden afgeschrikt van dit soort vragen.

Open vragen zijn toegevoegd aan de enquête om beschrijvende informatie van de deelnemers te verkrijgen. Deze zijn gebruikt om de andere externe factoren van de participanten met elkaar te vergelijken, waardoor kan

worden uitgesloten dat deze invloed hebben op het resultaat omtrent de contract types. De volgende lijst met externe factoren is bevraagd:

- Het type project: vastgoed of civiel
- Het type project: maatschappelijk of commercieel
- De grootte van het project, gemeten aan de hand van het budget
- De ervaring van de projectmanager: junior/medior/senior managers.

De gegeven antwoorden zijn vertaald naar scores, wat in Table 9 is weergegeven.

Answer	Points
"Helemaal mee eens" OR "Altijd" OR "Helemaal"	3
"Enigszins mee eens" OR "Vaak" OR "Grotendeels"	2
"Enigszins mee oneens" OR "Zelden" OR "Gedeeltelijk"	1
"Helemaal mee oneens" OR "Nooit" OR "Helemaal niet"	0

Table 9: Score of the answers on the closed questions

De uiteindelijke score van de projectmanagers is weergegeven op drie manieren: de totale score, the generieke score en de projectgerelateerde score. De laatste twee zijn logischer wijs gebaseerd op de twee soorten vragen binnen het onderzoek. De totale score is de combinatie van de generieke en projectgerelateerde score.

De validiteit van het onderzoek is op meerdere manieren gewaarborgd. Ten eerste is er een inter-item betrouwbaarheid, aangezien elke competentie op meerdere manieren wordt gemeten. (Van der Pligt & Blankers, 2013). Daarnaast bevordert de combinatie van generieke en projectgerelateerde vragen de betrouwbaarheid van het onderzoek. De zelfbeoordeling is gecontroleerd en het blijkt dat de deelnemers zichzelf vergelijkbaar scoren met externe beoordelaars. De duidelijkheid van de vragen is gecontroleerd door een testenquête af te nemen, die slechts tot minimale aanpassingen heeft geleid. Al met al kan worden gesteld dat de maximaal haalbare validiteit van de vragenlijst is behaald in dit onderzoek.

3.3 DATA

Data is verzameld van medior en senior projectmanagers in Nederland. Uiteindelijk hebben 54 projectmanagers deelgenomen aan het onderzoek. Figure 20 en Figure 21 laten de ratios zien van geslacht en leeftijd binnen de groep deelnemers.

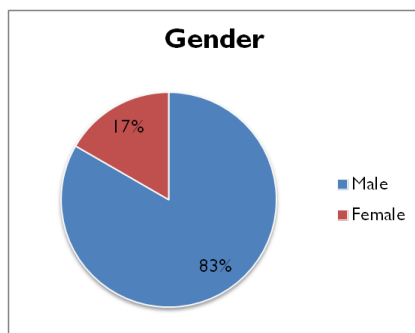


Figure 20: Geslacht deelnemers

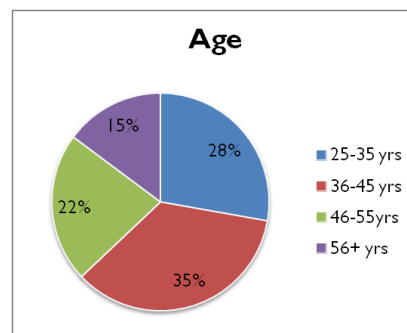


Figure 21: Leeftijd deelnemers

Figure 22 laat de verhouding zien tussen de verschillende opleidingsniveaus van de deelnemers, wat laat zien dat een erg groot deel van de deelnemers hoger opgeleid is. Figure 23 laat de jaren ervaring van de deelnemers zien, wat een sterke correlatie heeft met de leeftijd van de deelnemers.

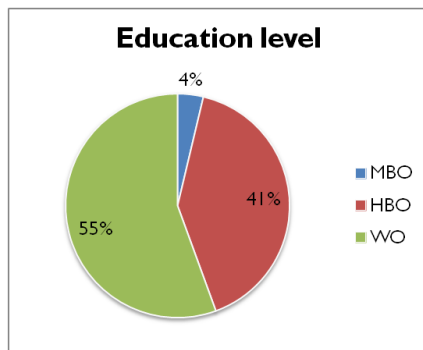


Figure 22: Opleidingsniveau deelnemers

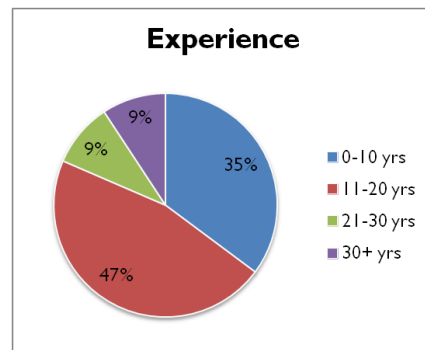


Figure 23: Jaren ervaring van de deelnemers

Aan de deelnemers is ook gevraagd welk contract type zij het meest gebruiken, waarvan de resultaten te zien zijn in Figure 24. Traditionele contracten vormen nog steeds de meerderheid. Figure 25 laat het antwoord zien op de vraag of de projectmanagers beoordeeld wilden worden door een externe beoordelaar. Het is te zien dat het grootste gedeelte van de projectmanagers dit niet wilde.

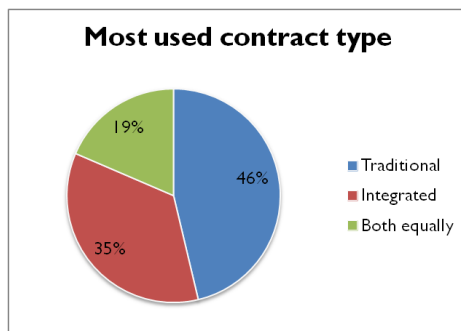


Figure 24: Meest gebruikte contract type

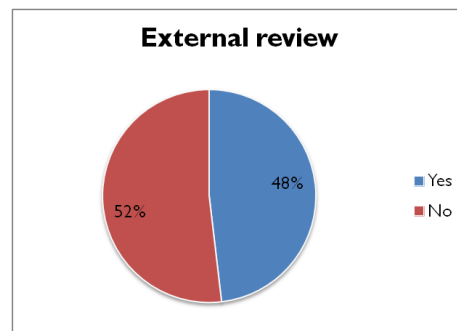


Figure 25: Goedkeuring voor externe beoordelaar

De laatste beschrijving van de deelnemers is te zien in Figure 26, waarin wordt getoond met welke redenen de projectmanagers op een bepaald project worden ingedeeld. Hierin is te zien dat de beschikbaarheid van de projectmanagers de meest genoemde reden is bij de indeling. De leiderschapsstijl is de minst genoemde reden.

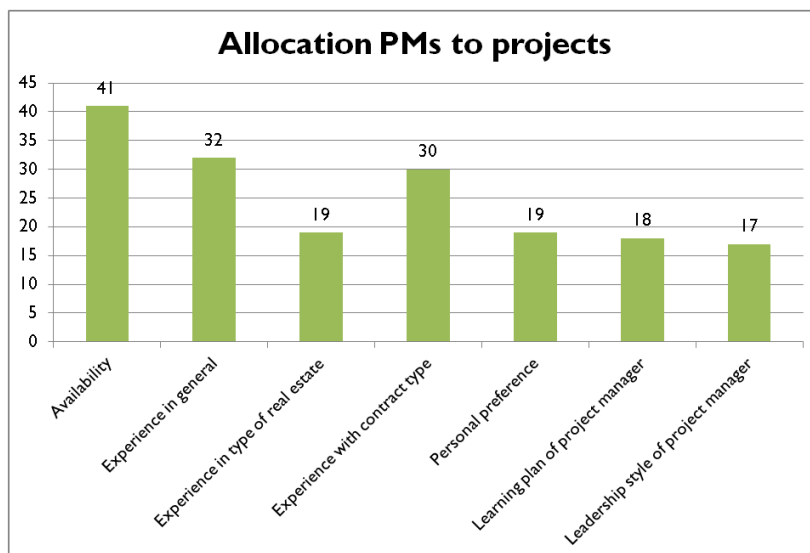


Figure 26: Factoren aan de hand waarvan projectmanagers worden ingedeeld bij projecten

3.4 ANALYSE

De verzamelde data is geanalyseerd en conclusies zijn getrokken. De gemiddelde score is relatief hoog. De deelnemers hebben zichzelf vrij positief beoordeeld op elke dimensie, wat wordt ondersteund door Figure 27. Het diagram geeft een overzicht van alle antwoorden die zijn gegeven op leiderschapsstijl vragen. 91% van alle antwoorden is een score 2 of 3, wat de twee hoogste opties zijn.

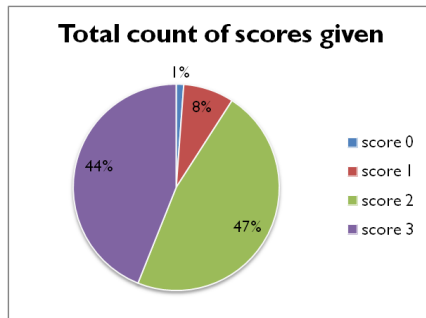


Figure 27: Scores gegeven op de gesloten vragen

Wat betreft het contract type is de eerste vergelijking gemaakt tussen het meest gebruikte contract type door de projectmanagers en de totale score op de competenties.

Table 10 en Figure 28 laten de verschillen zien in de score op de contract types. Drie competenties hebben praktisch dezelfde score voor beide contract types: vision and imagination, engaging communication en influencing. Het traditionele contract type scoort lager op strategic perspective en self-awareness, terwijl het hoger scoort op empowering en emotional resilience. Dit is een interessante uitkomst, aangezien de verdeling compleet verspreid is over de drie competentie categorieën. De getoonde verschillen zijn echter niet significant, maar een verschil is het meest plausibel voor empowering, emotional resilience en strategic perspective.

Een verklaring hiervoor kan worden gevonden in de redenen waarom projectmanagers bij bepaalde project worden ingedeeld. De deelnemers hebben aangegeven dat de beschikbaarheid en de ervaring van de projectmanagers mee wordt genomen bij de indeling. Daarentegen wordt de leiderschapsstijl het minst genoemd. Hiermee wordt gezegd dat ook het competentie profiel niet wordt gebruikt bij het indelen van de projectmanagers. Dit kan verklaren waarom er geen duidelijk verschil zichtbaar is tussen de verschillende contract types.

Total score	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
Traditional contract	2,31	2,46	2,50	2,09	2,32	2,34	2,46
Integrated contract	2,32	2,55	2,48	1,93	2,40	2,22	2,44
Sig. unequal means	0,892	0,334	0,861	0,234	0,550	0,282	0,883

Table 10: Totale score contract types

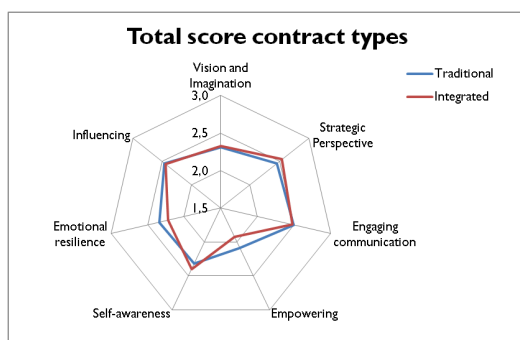


Figure 28: Totale score contract types

In Table 11 en Figure 29 zijn de generieke scores op de competenties te zien van de projectmanagers. Bij deze vergelijking zijn nog minder verschillen zichtbaar dan in de totale score. Er is echter wel een duidelijk verschil te zien voor de self-awareness score, waarbij de geïntegreerde contracten significant hoger scoren dan de traditionele contracten

General score	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
Traditional contract	2,37	2,52	2,54	2,02	2,39	2,34	2,28
Integrated contract	2,38	2,51	2,61	1,92	2,68	2,25	2,32
Sig. unequal means	0,909	0,912	0,545	0,557	0,032	0,414	0,838

Table 11: Generieke score contract types

Project-based score	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
Traditional contract	2,05	2,54	2,39	2,07	2,18	2,05	2,46
Integrated contract	2,24	2,44	2,35	2,03	2,34	2,26	2,59
Sig. unequal means	0,163	0,326	0,770	0,780	0,229	0,266	0,212

Table 12: Projectgerelateerde score contract types

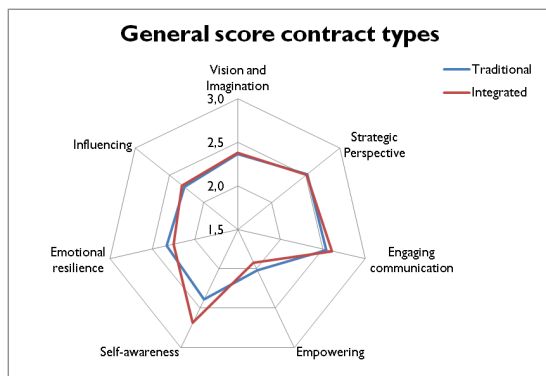


Figure 29: Generieke score contract types

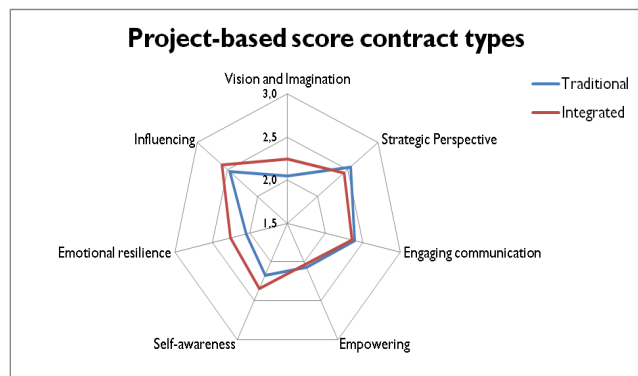


Figure 30: Projectgerelateerde scores contract types

De laatste vergelijking op het gebied van contract types is gemaakt aan de hand van de projectgerelateerde score van de projectmanagers, gebaseerd op het gebruikte contract type in dat project. Table 12 en Figure 30 laten de vergelijking zien. Wat betreft de management competenties (engaging communication en empowering) is het duidelijk dat de contract types gelijk scoren. De intellectuele competenties laten geen eenduidige score zien, aangezien de traditionele contracten hoger scoren op strategic perspective, terwijl de geïntegreerde contracten hoger scoren op vision and imagination. De emotionele competenties scoren allen hoger bij geïntegreerde contracten. Blijkbaar maken projectmanagers die met geïntegreerde contracten werken meer gebruik van hun emotionele competenties dan projectmanagers die met traditionele contracten werken. Dit betekent bijvoorbeeld dat zij beter geschikt zijn om hun eigen emoties te managen en meer invloed hebben op het projectteam.

Het is interessant om het verschil tussen de generieke en projectgerelateerde score te zien. Blijkbaar hebben de projectmanagers niet specifieke competenties waardoor ze voornamelijk aan een bepaald contracttype werken, terwijl ze wel specifiek competenties meer gebruiken bij een bepaald contract type. Dit is in lijn met het onderzoek van Müller and Turner (2010) die de invloed van externe factoren op de leiderschapsstijl omschrijven.

3.5 CONCLUSIES

Ondanks dat er weinig significante verschillen zijn, kunnen er nog steeds conclusies worden getrokken. Dit komt doordat andere externe factoren zijn uitgesloten. Alle hypothesen, behalve hypothese 7, kunnen echter niet geaccepteerd of verworpen worden, aangezien daar een statistisch significant verschil voor nodig is. De gegeven uitkomsten kunnen dus worden gezien als zeer plausibele verschillen tussen de contract types.

Voor elke competentie is er een specifieke hypothese opgesteld, waarvan H3 de eerste is. Deze heeft betrekking op 'vision and imagination'. De uitkomst van het onderzoek is tegenstrijdig met de hypothese dat projectmanagers die met traditionele contracten werken hoger score dan projectmanagers die met geïntegreerde contracten werken. Het tegenovergestelde blijkt uit dit onderzoek: geïntegreerd scoort hoger dan traditioneel.

Hypothese 4, waarin staat dat projectmanager die met traditionele contracten werken hoger zullen scoren op de competentie 'strategic perspective' dan projectmanagers die met geïntegreerde contracten werken is in lijn met de resultaten van dit onderzoek. Er is een klein verschil zichtbaar in de score op deze competentie, waarbij traditionele contracten inderdaad hoger scoren.

Hypothesen 5 en 6 zijn niet in lijn met de uitkomsten van dit onderzoek. Er is geen verschil zichtbaar in de score op 'engaging communication' en 'empowering' tussen de contract types. Het is dus niet zo dat de projectmanagers die met een traditioneel contract werken lager scoren dan projectmanagers die met een geïntegreerd contract werken, maar het tegenovergestelde is ook niet het geval.

Hypothese 7, waarin staat dat projectmanagers die met traditionele contracten werken lager scoren op de competentie 'self-awareness' dan project managers die werken met geïntegreerde contracten, is overeenstemming met de resultaten van dit onderzoek. Dit is niet alleen zichtbaar in de projectgerelateerde score, maar ook in de generieke score, waar zelfs een significant verschil zichtbaar is. Deze hypothese kan dus worden geaccepteerd.

Hypothesen 8 en 9 zijn in lijn met de uitkomsten van dit onderzoek, aangezien de projectgerelateerde score hoger is voor 'emotional resilience' en 'influencing' voor geïntegreerde contracten. Deze scores zijn echter niet significant verschillend, dus de hypothesen kunnen niet worden geaccepteerd of verworpen. Het is wel zo dat alle emotionele competenties hoger scoren bij geïntegreerde contracten, wat in lijn is met de hypothesen.

Om iets te kunnen zeggen over hypothesen 1 en 2 moet de leiderschapsstijl worden gedefinieerd die past bij het score profiel op de competenties. Dit geeft een gemixt beeld, aangezien sommige competenties dezelfde score hebben voor beide contract types. Vision and imagination zou hoger moeten scoren wanneer iemand een goal-oriented of involving leiderschapsstijl heeft, terwijl de emotionele competenties hoger scoren bij een engaging leiderschapsstijl. Dit betekent dat er geen 100% overeenkomst is met de competentie profielen en een bepaalde leiderschapsstijl. Daarom is er gekozen om de leiderschapsstijl met de meeste overeenkomsten te benoemen. Dit is voor de traditionele contracten een goal-oriented leiderschapsstijl en voor de geïntegreerde contracten een engaging leiderschapsstijl.

Het feit dat de projectgerelateerde score een groot verschil laat zien vergeleken met de generieke score, bevestigt het feit dat er sprake kan zijn van situationeel leiderschap: het gebruik van bepaalde leiderschap eigenschappen is afhankelijk van de situatie (Müller & Turner, 2007). Terwijl er in het algemeen weinig verschillen zichtbaar zijn tussen de projectmanagers, is dit verschil wel zichtbaar bij de projectgerelateerde score.

Hiermee kunnen we de hoofdvraag beantwoorden: *Welke leiderschapsstijl is toegepast door project managers in situaties met verschillende contract vormen?*

- Er is een neiging naar de goal-oriented leiderschapsstijl wanneer een traditioneel contract wordt gebruikt.
- Er is een neiging naar de engaging leiderschapsstijl wanneer een geïntegreerd contract wordt gebruikt.

Alle verschillen die in dit onderzoek zijn gevonden zijn klein, wat in lijn is met de theorie van Keegan and Den Hartog (2004), die beweren dat er bij projectmanagers weinig verschillen zijn wat betreft leiderschapsstijl.

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4. INTRODUCTION

Managers have been compared at various levels and on multiple subjects. Many researchers have written about the success factors of managers and the elements that influence the required actions of the manager. Since the 1960s leadership theories describe that the specific circumstances determine what type of leadership is suitable, which is still investigated by researchers of today.

"A recent study suggested different project management approaches are appropriate for different types of project" (Crawford, Hobbs, & Turner, 2005)

If different styles are appropriate in various circumstances, it should show in practice that project managers use a different style when the circumstances change. However, there are a lot of circumstances that can differ and therefore influence the leadership style of the project manager. In the building sector, the used contract type has a big influence on the circumstances for the project manager. Integrated contracts is seen as a new development in the building sector and the term refers to the fact that the client has a contract with one single party that is responsible for the design as well as the execution (Chao-Duivis et al., 2008). The statement of Crawford et al. (2005) would suggest that this new contract type asks for a different approach by the project manager than the traditional contract type. This can suggest that a different leadership style will be used by project managers that work with an integrated contract. The outcomes of the research of Müller and Turner (2007) confirms this statement, since multiple interviewees mentioned the contract type as being influential on the leadership style. Contradictory to this statement is the result of Keegen and Den Hartog (2004) that concluded that leadership is less important in project-based situations than in traditional organisational situations. This would suggest that the leadership style for project managers is not specifically important for the project success and therefore the project managers do not need to use a different style. This research investigates whether the contract type of a building project influences the leadership style used by the project manager.

This research can contribute to the larger question whether the leadership style is dependent on the situation. Till now this is investigated more generally in the management field, while this research focuses on one specific difference in the circumstances. Since the integrated contracts are becoming more common in the building sector, it is important to find out whether the leadership style differs from the traditional contract type. If the outcomes do show a difference in leadership style, companies can use it to determine which manager should be appointed to which project.

In this research a lot of terms are used, which can have different definitions. Therefore an overview of the definitions used for this research can be found in Appendix I: Definitions.

5. PROBLEM STATEMENT AND RESEARCH QUESTION

From the literature we can conclude that different circumstances ask for different leadership style from the project manager. Would this also be the case if the traditional contract type is compared with the integrated contract type? This research gives answer to the question: *Which leadership style is applied by project managers in situations with different contract types?*

In order to answer this question, multiple steps have been completed. First of all a literature study has been performed, which included multiple subjects. Leadership has been studied in general, which gives an overview of the schools of leadership over time. Next to that leadership styles have been studied, since there are multiple ways of categorizing leadership styles. The last part of the literature study contains the research methods that can be used to determine ones leadership style. A leadership style cannot be measured easily, since it contains of a lot of elements. The methods used by other researchers are used as a starting point to determine the research method this research.

The second part is the research design. In this part the conceptual framework for the research will be addressed, which entails the complete plan of approach for the research. Two important decisions had to be made based on the literature study: the selection of the leadership style classification that will be used and the research methods that will be used. These are the key elements in order to prepare the execution of the research.

The third part was the data gathering, which was done by taking surveys from project managers that mostly work with traditional contracts and project managers that mostly work with integrated contracts. This part describes the process of the data gathering and the general information of the sample that is gathered.

The fourth and last part contains the analysis of the gathered data. In this analysis the comparison is made for the project managers that work with different contract types. Besides that, more outcomes can be taken from the large data set that is gathered in the foregoing step. These additional findings are also discussed in this report. This part ends with the conclusions, discussion and suggestions for further research.

Figure 31 shows an overview of these four parts of the research process. The report is ordered in line with these steps.

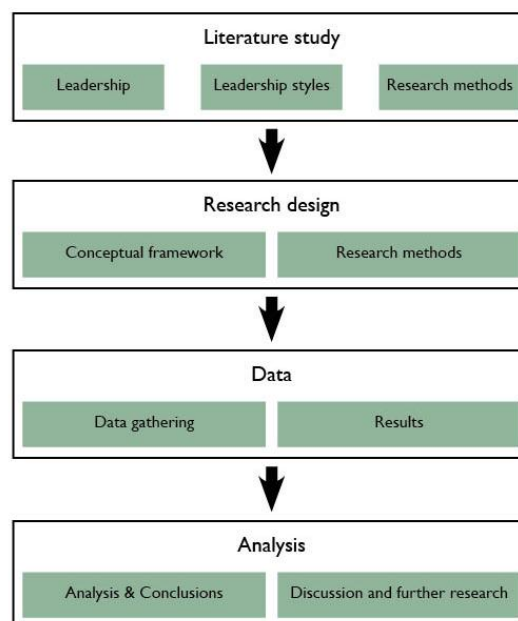


Figure 31: Steps in the research process (own image)

5.1 DELIVERABLES

The end result of this research is a comparison between the used styles by project managers in projects with a traditional contract type and project managers in projects with an integrated contract type. By making this comparison the following will be achieved:

- Deepened insight in the question whether leadership styles are dependent on the circumstances.
- Deepened insight in the question whether the contract type is an external factor that influences the applied leadership style.
- Deepened insight in the question whether project managers with a specific leadership style are appointed to project with a specific contract type.
- Providing information for project management companies to enable them to decide which manager to appoint to which project.

The above mentioned deliverables will be discussed in the conclusion chapter of this report. Before we get there, the four steps from Figure 31 will first be described.

Part I

Literature study

6. LITERATURE REVIEW

This chapter describes the information found in literature about leadership and leadership styles. Besides that it will be described which methods can be used to determine leadership styles. The outcomes of the literature review will be used to select categorizations and methods that will be used in this research. The last part of this chapter identifies the statements of researchers regarding the question of this research, which will be used as input for the expected results.

6.1 LEADERSHIP

Since the 1930s there have been six main schools of leadership theory (J. R. Turner & Müller, 2005). Figure 32 shows a timeline with the different schools appointed to the moment in time in which they were mostly used.

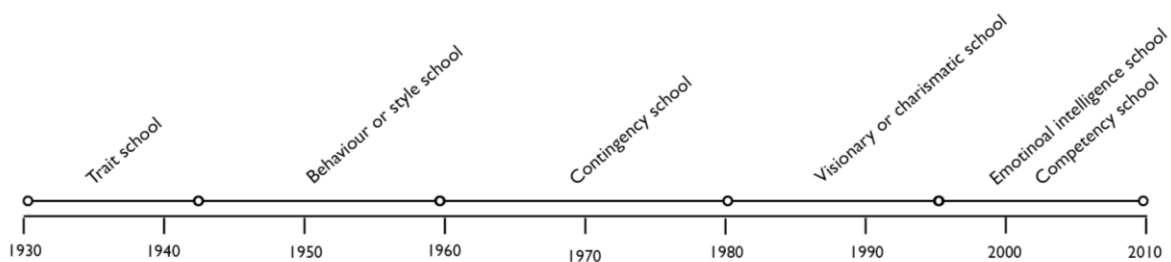


Figure 32: Timeline schools of leadership theory (own figure)

The trait school describes that effective leaders share common traits, which would entail that true leaders are born and cannot be made (J. R. Turner & Müller, 2005). When these traits have been described, three categories were used: abilities, personality and physical appearance. Especially the latter confirms that it is not possible to create leaders or to teach someone in becoming an effective leader. Kirkpatrick and Locke (1991) distinguished six different traits of effective leaders:

- Drive and ambition
- The desire to lead and influence others
- Honesty and integrity
- Self-confidence
- Intelligence
- Technical knowledge

This list shows a crack in the theory that leaders are simply born, since a part of this list encompasses abilities that can be learned, such as the technical knowledge.

The behaviour (or style) school suggests that effective leaders use certain behaviours or styles, which can be developed (Müller & Turner, 2007). So from the 1940s the theory switched from assuming that effective leaders were born toward an assumption that people can be educated into becoming effective leaders. In this school the work of the leaders was judged by the following parameters (J. R. Turner & Müller, 2005):

- Concern for people or relationships
- Concern for production
- Use of authority
- Involvement of the team in decision-making
- Involvement of the team in decision-taking
- Flexibility versus the application of rules

The contingency school is a development of the behavioural school, with the addition that different behaviours or styles are appropriate in different circumstances (Müller & Turner, 2007). Especially the path-goal theory of House (1971) has become very popular within the contingency school. He described four different leadership behaviours: directive, supportive, participative and achievement-oriented leaders. These were matched to circumstances, which was described in environmental and subordinate factors.

The visionary (or charismatic) school focuses on two types of leaders, that were based on a study of leaders guiding their business through change (Müller & Turner, 2007; J. R. Turner & Müller, 2005). This study was performed by Bass (1990) who identified the two types of leadership:

- Transactional: this leader uses rewards for the followers when goals are achieved. The leader only starts to manage the situation when tasks are not going as planned.
- Transformational: this leader develops a vision and motivates the followers to participate in achieving the goals accompanying this vision. The leader pays attention to individuals and stimulates them intellectually.

The emotional intelligence school is developed since the late 1990s and states that the intellectual capabilities of the leader are subordinate to the emotional intelligence (Goleman et al., 2002). These researchers firstly developed four domains in which emotional intelligence can be categorized:

- Self-awareness
- Self-management
- Social awareness
- Relationship management

Within these domains they identified nineteen leadership competencies and from these competencies they distinguished six different leadership styles (Müller & Turner, 2007) that will be discussed later on in this chapter.

The competency school developed in the same period of time as the emotional intelligence school. Within this school it is stated that effective leaders exhibit certain competencies (Müller & Turner, 2007). In fact it combines almost all schools mentioned before, since traits as well as behaviours can be identified as competencies. Dulewicz and Higgs (2005) described fifteen leadership competencies (Table 13) that also include the emotional intelligence, which is in line with the emotional intelligence school.

<i>Emotional competencies</i>	<i>Managerial competencies</i>	<i>Intellectual competencies</i>
• Motivation • Conscientiousness • Sensitivity • Influence • Self-awareness • Emotional resilience • Intuitiveness	• Managing resources • Engaging communication • Developing • Empowering • Achieving	• Strategic perspective • Vision and imagination • Critical analysis and judgement

Table 13: Fifteen leadership competencies (Dulewicz & Higgs, 2005)

6.2 LEADERSHIP STYLES

The various theories regarding leadership resulted in various ways of categorizing leadership styles. In this part of the chapter multiple categorizations of leadership style will be described.

In the time the contingency school was popular, Fiedler and Chemers (1967) identified two different leadership styles, that were in their eyes desirable in different situations. The *task-oriented* leaders use a directive and controlling style. The *participative* leaders achieve effectiveness by focusing on interpersonal relationship orientation.

Turner (1999) identified four different styles of leadership which were based on three of the parameters used in the behavioural school of leadership theory. The parameters that were used by Turner are: involvement of team in decision-making, involvement of team in decision-taking and flexibility. The combinations of high and low scores of the project managers in these three parameters determines which style the managers uses. The table below shows an overview of the four leadership styles and the scores of the managers on the parameters:

	Parameter			
		Team decision-making	Team decision-taking	Flexibility
Leadership style	Laissez-faire	High	High	High
	Democratic	High	Low	High
	Autocratic	Low	Low	High
	Bureaucratic	Low	Low	Low

Table 14: Four leadership styles (J. R. Turner, 1999)

This means the team of a project manager with the laissez-faire leadership style has a lot of involvement in the decision-making and decision-taking and the manager is very flexible. A bureaucratic manager does not give the team involvement in the decision-making and decision-taking and is inflexible.

The categorization of Bass (1990) of transactional and transformational leadership can also be seen as leadership styles. These styles are in essence very similar to the dichotomy of Fiedler and Chemers(1967). The transactional style is similar to the task-oriented style, since both use the goals as check points. The transformational style is more focused on the interpersonal relationships, just like the participative style. However, Bass made a more detailed description of the two leadership styles and added for example the use of rewards of the transactional leader and the development of a vision by the transformational leader.

Another classification of leadership styles is made by Goleman, et al. (2002), who made a distinction between six different leadership styles (Figure 33).



Figure 33: Six styles of leadership (Goleman, 2000)

The commanding leader uses the 'Do as I say'-approach (Goleman et al., 2002). This can be very useful when there is a turnaround situation or when the leader has to deal with problematic followers. However, mostly it has a negative influence on the flexibility of the organisation and the motivation of the followers. The pacesetter leader sets high performance standards and tries to have a positive impact on the followers (Goleman et al., 2002). However, this leader can be seen as a part of the followers instead of standing out as a leader. The visionary leader who uses the 'Come with me'-approach, which is especially useful when a project is fluent (Goleman et al., 2002). It is not efficient if the leader is working with people who are more experienced than the leader himself. The coaching leader focuses on the personal development of the followers, which has similarities with the earlier mentioned transformational or participative style. This style works well when the followers are aware of their weaknesses and want to improve those. The affiliative leader implements a 'People come first'-attitude, which can be used to raise the team harmony and increase the morale (Goleman et al., 2002). However, it is possible that mistakes are made which are not corrected. The democratic style is used by a leader that wants to give the followers a voice in the decisions that have to be made. This increases the flexibility of the organisation and the level of which the followers feel responsible. It can also result in endless meetings, without making any decisions.

Dulewicz & Higgs (2005) identified three categories in which the leadership behaviour can be placed found in earlier literature. These categories can be seen as specific leadership styles:

- Goal-oriented: the leader sets the direction and determines the goals. There is a significant role for the leader in achieving this goal by directing others in achieving their goals and reaching the desired performance quality.
- Involving: the focus is less on the leader and a strong sense of direction is provided. Others are more involved in setting this direction, making decisions and determining how goals will be achieved.
- Engaging: the leader focuses more on the development of others, rather than the direction set by the company or the leader himself. The leader facilitates the others in determining the direction and achieving the desired goals.

The distinction made by Dulewicz and Higgs offers an option in between the already mentioned task-oriented vs. participative and transactional vs. transformational styles.

There are a lot of similarities between the mentioned leadership style categorizations. In order to get a better insight in the comparability of the categorizations, Table 15 has been made. This table uses the three parameters of Turner (1999): team decision-making, team decision-taking and flexibility. Only one scale is used for the three parameters to get a quick overview of the comparable leadership styles. A high score in this table means that the specific leadership style scores high on average for the three parameters.

Fiedler & Chemers (1967)	Turner (1999)	Bass (1990)	Goleman, et al. (2002)	Dulewicz & Higgs (2005)
			Commanding	
Task oriented	Bureaucratic	Transactional	Pacesetter	Goal-oriented
	Autocratic			
Participative		Transformational	Visionary	Involving
			Affiliative	
			Coaching	Engaging
	Democratic		Democratic	
	Laissez-faire			



Low

High

Table 15: Comparison leadership style categorizations (own table)

6.2.1 SELECTED LEADERSHIP STYLE CATEGORIZATION

For this research the leadership style categorization of Dulewicz and Higgs (2005) will be used. Of the categorizations it is the last one which is made and it used the other categorizations as input. Besides that, Dulewicz and Higgs made a clear categorization in competencies, which can be used to as separate parameters to compare the various project managers participating in this research.

6.3 METHODS TO MEASURE LEADERSHIPSTYLES

In order to state something about one's leadership style, it has to be made possible to measure which style is used by project managers. In order to do so the Multifactor Leadership Questionnaire (MLQ) was developed to test transformational, transactional and laissez-faire leadership (Bass, 1990). So for the testing of the leadership style, Bass added an extra category, since before laissez-faire leadership was not mentioned. The table below shows the dimensions that were used by Bass in the MLQ.

Style	Dimensions	Description
Transformational	Idealized influence (attributed) Idealized influence (behavior) Inspirational motivation Intellectual stimulation Individualized consideration	The charisma of the leader Charisma centered on values, beliefs, and mission Energizing followers by optimism, goals, and vision Challenging creativity for problem solving Advising, supporting, and caring for individuals
Transactional	Contingent reward leadership Management by exception (active) Management by exception (passive)	Providing role, task clarification and psychological rewards Active vigilance of a leader to ensure goals are met Leaders intervene after mistakes have happened
Laissez-faire	Laissez-faire leadership	Leader avoids making decisions, abdicates responsibility, and does not use authority

Table 16: Dimensions of the Multifactor Leadership Questionnaire (Bass, 1990)

As addition to this questionnaire Antonakis, Avolio and Sivasubramaniam (2003) identified external factors that influence the MLQ results. The researchers found that leader's hierarchical level, environmental risk and gender of leader and rater had an influence on the results. However, they support the effectiveness of the MLQ.

"Regardless of the theoretical or measurement shortcomings, our results indicate that the current version of the MLQ (Form 5X) is a valid and reliable instrument that can adequately measure the nine components comprising the full-range theory of leadership." (Antonakis et al., 2003)

Over time the MLQ has developed, but there is no literature available that actually checks the reliability of the questionnaire. The fact that it is used by a great amount of researchers (Bass, 1990; Downey, Papageorgiou, & Stough, 2006; Erkutlu, 2008; Vigoda-Gadot, 2007) suggests that the reliability is overall accepted.

Dulewicz and Higgs adjusted the MLQ into a new measuring instrument: the Leadership Dimensions Questionnaire (2005). According to Turner and Müller (2005) this LDQ has removed all weaknesses that were identified in the original MLQ and therefore provides the broadest coverage in assessing leadership and context simultaneously. Within the LDQ the three categories and fifteen dimensions were used that can be found in an earlier part of this chapter, namely in Table 13. For each dimension multiple questions were formulated, which resulted in 70 EQ items, 80 IQ items and 80 MQ items (Dulewicz & Higgs, 2005). The reliability of the 15 dimensions has been tested and all dimensions reached an acceptable level of reliability. The dimensions that were found most highly reliable in their test were vision and imagination, engaging communication, managing

resources and developing. The acknowledgement of the reliability and validity of this instrument is visible in the use of the LDQ by multiple researchers (Galvin, Gibbs, Sullivan, & Williams, 2014; Müller, Geraldi, & Turner, 2012; Müller & Turner, 2010; Shao & Müller, 2011).

SELF-ASSESSMENT

The two mentioned methods to measure leadership style are both based on self-assessment. It may be questioned whether this is a reliable way of determining competencies and leadership styles, since there is a bias to score high on most of the measured issues. Several studies claim that the self-assessment in the Leadership Dimensions Questionnaire gives a good view on reality. The study of Young and Dulewicz (2006) found a statistical significant correlation between self-rated performance with the LDQ and the actual performance ratings. The same is concluded from another research, into the Royal Air Force (Wren & Dulewicz, 2005). This conclusion is confirmed in the research of Turner, Müller and Dulewicz (2009), who state: "The value of self-assessed performance should be accepted". It can be noticed that all these researches are performed by Dulewicz, who is one of the developed of the LDQ, which makes the results questionable.

Other research argues that self-assessment is an inaccurate (Symons, Swanson, McGuigan, Orrange, & Akl, 2009). They found out that self-assessment is not completely accurate for multiple reasons, such as the fact that men tend to rate themselves higher than females on certain items. The research concludes that self-assessment can still be used as part of a research, but it is desirable to make a multi-source evaluation.

6.4 APPLICATION OF METHODS IN THIS RESEARCH

For this research the leadership style of project managers need to be measured, which can be done using questionnaires, such as the MLQ (Bass, 1990) or the LDQ (Dulewicz & Higgs, 2005). This means that a quantitative research strategy is used for this research, since quantification in the collection and analysis of data will be emphasized (Bryman, 2015). It is a deductive strategy, since stated hypotheses will be confirmed or rejected which will lead to a revision on earlier theories (Bryman, 2015). The hypotheses will be mentioned in chapter 7 of this report.

This research uses a comparative research design, which can be defined as: "A research design that entails the comparison of two or more cases in order to illuminate existing theory or generate theoretical insights as a result of contrasting findings uncovered through the comparison." (Bryman, 2015). The leadership style accompanying the traditional contract type is compared to the integrated contract type. The determination of the typical leadership style for each contract type is done using a cross-sectional research design, which entails "the collection of data on more than one case and at a single point in time in order to collect a body of quantitative or quantifiable data in connection with two or more variable which are then examined to detect patterns of association" (Bryman, 2015). This is done by collecting data from multiple project managers in order to detect differences when different contract types are used.

Using one of the existing questionnaires would suffice in order to measure the leadership style. Multiple search engines (google scholar, scopus & research gate) were used in order to find one of the validated questionnaires. However, they are not freely available online. In an e-mail correspondence with Malcolm Higgs, one of the developers of the LDQ, he mentioned that the questionnaire is commercially published. The costs for this questionnaire fall outside the possibilities of this research. Therefore the LDQ could not directly be used, which resulted in a search for suitable questions from these recognized methods.

This search was done on Scopus, with the following criteria:

- "Leadership style questionnaire" in article title, abstract or keywords
- Published between 2005 and now
- At least cited in 10 other sources
- Categorized in "social sciences" or "business, management and accounting"

This search resulted in 60 articles, of which the abstracts have been read. An overview of these articles can be found in Appendix 2: Literature review. Two criteria were used to determine whether the articles were possibly useful for this research: leadership style has to be measured and a questionnaire has to be used to do so. This resulted in 24 articles that have been read completely. These articles were used to search for complete questionnaires or otherwise useable questions for this research. The results are shown in Table 17 below.

Article	Used questionnaire	Complete questionnaire in article?	Reference to complete questionnaire?	Example questions available?	Themes of questions available?
Matching the project manager's leadership style to project type. (Müller & Turner, 2007)	LDQ	-	-	-	+
Leadership competency profiles of successful project managers (Müller & Turner, 2010)	LDQ	-	-	-	+
Ethical leadership at work questionnaire (ELW): Development and validation of a multidimensional measure (Kalshoven, Den Hartog, & De Hoogh, 2011)	Ethical Leadership at Work (ELW)	-	-	+	+
Transformational and charismatic leadership: Assessing the convergent, divergent and criterion validity of the MLQ and the CKS (Rowold & Heinritz, 2007)	MLQ & CKS	-	-	-	+
The association among project manager's leadership style, teamwork and project success (Yang, Huang, & Wu, 2011)	Own questionnaire	-	-	-	-
Leadership style, organizational politics, and employees' performance: an empirical examination of two competing models (Vigoda-Gadot, 2007)	MLQ	-	-	+	-
Role of leadership in knowledge management: a study (Singh, 2008)	Organizational leadership questionnaire	-	-	-	-
The impact of transformational leadership on organizational and leadership effectiveness (Erkutlu, 2008)	MLQ	-	-	+	-
Examining the relationship between leadership, emotional intelligence and intuition in senior female managers (Downey et al., 2006)	MLQ	-	-	-	+
Leadership style: the X generation and baby boomers compared in different cultural contexts (Yu & Miller, 2005)	-	-	-	-	-
Effects of gender, education and age upon leaders' use of influence, tactics and full range leadership behaviors (Barbuto Jr, Fritz, Matkin, & Marx, 2007)	MLQ	-	-	-	+
Performance and leadership outcome correlates of leadership styles and subordinate commitment (Limsila & Ogunlana, 2008)	MLQ	-	-	-	+

Physician leadership styles and effectiveness: an empirical study (Xirasagar, Samuels, & Stoskopf, 2005)	MLQ (adjusted)	+	+	+	+
The impact of goal orientation on the association between leadership style and follower performance, creativity and work attitudes (Moss & Ritossa, 2007)	MLQ	-	-	+	+
Comparing the leadership styles of functional and project managers (R. Turner et al., 2009)	LDQ	-	-	-	+
Organizational learning and transformational leadership in the library environment (Castiglione, 2006)	MLQ (adjusted)	+	-	+	+
Culturally-linked leadership styles (Jogulu, 2010)	MLQ	-	-	-	+
Leadership styles and burnout: is there an association? (Zopiatis & Constanti, 2010)	MLQ	-	-	-	+
Do different marketing practices require different leadership styles? an exploratory study (Lindgreen, Palmer, Wetzels, & Antioco, 2009)	MLQ (adjusted)	-	-	-	-
Management training of physician executives, their leadership style, and care management performance: an empirical study (Xirasagar, Samuels, & Curtin, 2006)	MLQ (adjusted)	-	-	-	-
A study of the management leadership style preferred by its subordinates (Bennett, 2009)	MLQ	-	-	-	+
Leadership styles in the Palestinian large-scale industrial enterprises (As-Sadeq & Khoury, 2006)	MLQ	-	-	-	+
CEO's Transformational leadership and product innovation performance: the roles of corporate entrepreneurship and technology orientation (Chen, Tang, Jin, Xie, & Li, 2014)	Transformational leadership questionnaire	+	-	+	+
Primary principals' leadership styles, school organizational health and workplace bullying (Cemaloğlu, 2011)	MLQ	-	-	-	-

Table 17: Literature review (own image)

Table 17 shows that only three of the 24 articles added their complete questionnaire. This has a big impact on the validity of the results of these researches, since the research cannot be verified nor repeated. Besides the three articles with the whole questionnaire, only four other articles give examples of the questions that were used in the research. More than 2/3 of these researches can therefore not completely be checked upon validity and reliability.

The search for example questionnaires resulted in the following outcomes.

First of all Kalshoven, Den Hartog and De Hoogh (2011) developed the Ethical Leadership at Work (ELW) questionnaire, which measures seven ethical leader behaviors: fairness, integrity, ethical guidance, people orientation, power sharing, role clarification and environment orientation. These abilities can be compared to the emotional competencies mentioned by Dulewicz and Higgs (2005). In their research they used the leadership style classification which includes transformational, transactional, autocratic and passive styles. An example item in their questionnaire which measures transformational leadership is: "Encourages subordinates to be independent thinkers" (Kalshoven et al., 2011).

Vigoda-Gadot (2007) used a shorter version the MLQ in the research, which measured transformational and transactional leadership styles. An example item from this research is: "My supervisor speaks enthusiastically about our goals as a team" (Vigoda-Gadot, 2007).

Erkutlu (2008) used the MLQ form 5X in which the managers scored themselves for their leadership style with 36 items. It measures transformational, transactional and laissez-faire leadership style as we are used from the MLQ and its various forms. An example of an item for transactional leadership style is: "directs my attention towards failures to meet standards" (Erkutlu, 2008).

Xirasagar, Samuels and Stoskopf (2005) state that they made an adjusted version of the MLQ and in their article a summarized version of the survey items can be found. The survey measures transformational, transactional and laissez-faire leadership styles. An example item for transformational leadership is: "Defining and communicating a compelling vision" (Xirasagar et al., 2005). For the transactional leadership an example item is: "Clarity of responsibility for achieving targets". Lastly for laissez-faire leadership and example item is: "Avoids decision making". The reason this questionnaire is not used in this research is the fact that only a summarized overview is given, which means it still has to be adjusted before it can be used. Besides that, the reliability is hard to check, since no other authors used this specific questionnaire and it is based on another questionnaire that cannot be found.

Moss and Ritossa (2007) used just like Erkutlu (2008) the MLQ form 5X and reported some other example questions in their article: "Seeks differing perspectives when solving problems", "Articulates a compelling vision of the future" and "Provides me with assistance in exchange for my efforts" (Moss & Ritossa, 2007).

Castiglione (2006) developed a self-assessment tool which is also based on the MLQ to study leadership styles in business, industry and the military. The questionnaire is published with the article and consist of five different parts (Castiglione, 2006):

- Managerial attributes related to the charismatic management of staff
- Managerial attributes related to the intellectual stimulation of staff
- Managerial attributes that demonstrate individualized consideration
- Managerial attributes that facilitate transformation
- Transactional management style

However, the articles does not state how the questions will be scored and how the leadership style will be defined based on the answers. This makes it difficult to use the questionnaire, but it can still be an inspiration for questions. Two examples of questions that can be used are: "Encourages staff to scan the environment for new service opportunities" and "Is considered by the staff to be an innovator?" (Castiglione, 2006).

Part of the research of Chen et al. (2014) includes the measurement of the CEO's transformational leadership. In this questionnaire 20 items have to be answered by someone who is led by the CEO. Again the interpretation of the answers is not discussed, which makes it hard to use the questionnaire as it is. Besides, only one leadership style is measured, which makes it difficult to use this questionnaire to make a comparison of various leadership styles. A question that might be used is: "My leader talks enthusiastically about what needs to be accomplished".

The literature review shows there is no complete questionnaire ready to use for this research. Therefore the literature is used to develop an own questionnaire, which will be discussed in the next part of this chapter.

6.4.1 BASE OF THE QUESTIONNAIRE

The LDQ is considered to be an improvement to the MLQ (J. R. Turner & Müller, 2005) and is therefore chosen as the base of the questionnaire that will be used in this research. In that case the leadership style can be determined, by the score of the Intellectual, Managerial and Emotional competence of each project manager. The scheme below shows the typical score for each of these categories related to the predominant leadership

style, comparing the goal-oriented, involving and engaging leadership style (G, I and E). The scheme shows that some competencies have a high score for each leadership style, such as emotional resilience and motivation. Other competencies show large differences: managing resources and empowering.

LDQ dimension	Low	Medium	High
Critical analysis and judgement	–	E I	G
Vision and imagination	–	E	G I
Strategic perspective	–	E I	G
Engaging communication	–	G I	E
Managing resources	E	I	G
Empowering	G	I	E
Developing	–	G I	E
Achieving	–	E I	G
Self-awareness	–	G	E I
Emotional resilience	–	–	G E I
Motivation	–	–	G E I
Interpersonal sensitivity	–	G I	E
Influencing	–	G	E I
Intuitiveness	–	G I	E
Conscientiousness	–	–	G E I

Note: Profiles of the three leadership styles showing their typical scores on the leadership dimensions questionnaire

Figure 34: Typical scores LDQ dimensions per leadership style (Dulewicz & Higgs, 2005)

The three categorizations contain 15 dimensions/competencies in total. Dulewicz and Higgs (2005) used sub-dimensions to describe them. Figure 35, Figure 36 and Figure 37 show the three categories with all dimensions and sub-dimensions they consist of. Since the sub-dimensions are a description of the competencies, they are used as the base for the questionnaire of this research.

Intellectual dimensions	Critical analysis and judgement	Investigate facts
		Identify advantages and disadvantages
		Discern shortcomings of ideas and proposals
		Make sound judgements and decisions based on reasonable assumptions and factual information
		Be aware of the impact of any assumptions made
	Vision and imagination	Imaginative in all aspects of one's work
		Innovative in all aspects of one's work
		Establish sound priorities for future work
		Clear vision of the future direction of the organisation to meet business imperatives
		Foresee the impact of changes on one's vision that reflect implementation issues and business realities
	Strategic perspective	See wider issues and broader implications
		Explore wide range of relationships
		Balance short- and longterm considerations
		Sensitive to the impact of one's actions and decisions across the organisation
		Identify opportunities and threats.
		Sensitive to stakeholders' needs
		Sensitive to the implications of external factors on decisions and actions

Figure 35: Intellectual competences, dimensions and sub-dimensions (Dulewicz & Higgs, 2005)

Managerial dimensions	Resource management	Plan ahead
		Organise all resources and coordinate them efficiently and effectively
		Establish clear objectives
		Convert long-term goals into action plans
		Monitors and evaluates staff's work regularly and effectively
		Give sensitive, honest feedback
	Engaging communication	A lively and enthusiastic communicator
		Engage others and win support
		Clearly communicate instructions and vision to staff
		Communications are tailored to the audience's interests and focused
		Communication style inspires staff and audiences
		Communication style conveys approachability and accessibility
	Empowering	Give staff autonomy
		Encourage staff to take on personally challenging demanding tasks
		Encourage staff to solve problems
		Encourage staff to produce innovative ideas and proposals
		Encourage staff to produce their vision and a broader vision
		Encourage a critical faculty and a broad perspective
		Encourage to challenge of existing practices, assumptions and policies
	Developing	Believe others have potential to take on more-demanding tasks and roles
		Encourage others to take on more-demanding tasks and roles
		Ensures direct support have adequate support
		Develop staff competencies
		Invest time and effort in coaching staff to develop themselves
		Identify new tasks and roles to develop others
		Believe that critical feedback and challenge are important
	Achieving	Willing to make decisions with involving significant risk to gain an advantage
		Decisions are based on core business issues
		Decisions are based on their likely impact on success
		Select and exploit activities that result in the greatest benefits to the organisation and its performance
		Unwavering determination to achieve objectives and implement decisions

Figure 36: Managerial competences, dimensions and sub-dimensions (Dulewicz & Higgs, 2005)

Emotional and social dimensions	Self-awareness	Awareness of one's own feelings and the capability to recognise and manage these in a way that one feels that one can control
		A degree of self-belief in one's capability to manage one's emotions
		Control the impact of one's emotions in a work environment
	Emotional resilience	Perform consistently in a range of situations under pressure
		Adapt behaviour appropriately under pressure
		Balance the needs of the situation and task with the needs and concerns of the individuals involved
		Retains focus on course of action or need for results in the face of personal challenge or criticism
	Intuitiveness	Arrive at clear decisions
		Use intuitive perception in making decisions when presented with incomplete or ambiguous information
	Interpersonal sensitivity	Being aware of, and takes account of, the needs and perceptions of others in arriving at decisions and proposing solutions
		Achieve the commitment of others to decisions and actions
		Willing to keep open one's thought on possible solutions to problems
		Actively listen to, and reflect on, the reactions and inputs from others in decision making situations
	Influence	Persuade others to change views based on an understanding of their position and a recognition of the need to listen to this perspective
		Provide a rationale for change
	Motivation	Drive and energy to achieve clear results and make an impact
		Balance short- and long-term goals with a capability to pursue demanding goals in the face of rejection or questioning
	Conscientiousness	Display clear commitment to a course of action in the face of challenge
		Match words and deeds in encouraging others to support the chosen direction
		Show personal commitment to pursuing an ethical solution to a difficult business issue or problem

Figure 37: Emotional competences, dimensions and sub-dimensions (Dulewicz & Higgs, 2005)

There are two reasons that a selection of 7 of the 15 competencies has been made for this research. The first is the limited time for the research, which resulted in the fact that there would not be enough time to elaborate on all 15 dimensions. Secondly, the questionnaire would become too extensive if all dimensions were used, which would create difficulties in finding enough participants. The next section explains which competencies have been selected for the research and for what reasons.

6.4.2 SELECTION OF THE COMPETENCIES

The selection had to include the dimensions for which the most differences are expected between the project managers. A first selection was based on Figure 34, which is shown earlier in this chapter. Based on this table two dimensions could be selected that should show large difference, since they differ a lot between leadership styles:

- Managing resources
- Empowering

Some other competencies do not show a difference at all between the leadership styles:

- Emotional resilience
- Motivation
- Conscientiousness

A research by Müller and Tuner (2006) which is based on the same questionnaire, showed different results. The research determined variations between the competences in different projects, which were categorized in five ways: application area, project complexity, project importance, contract type and life-cycle stage. For all five parameters projects were compared and scores were given for the competencies. These scores were ranked with regard of being different when the project was concerned to be different. Three possible scores are used: large difference, small difference and no difference. The scoring of the competences can be seen in the figure below.

	Application Area	Project complexity	Project importance	Contract type	Life-cycle stage	
Critical analysis and judgement	0	-	-	0	0	3
Vision and imagination	+	+	0	0	+	8
Strategic perspective	-	+	+	+	+	8
Engaging Communication	+	+	0	0	0	7
Managing resources	0	0	-	0	+	5
Empowering	0	+	0	+	0	7
Developing	0	+	-	0	+	6
Achieving	-	0	-	0	+	4
Self-awareness	+	+	0	-	+	7
Emotional resilience	0	+	0	+	+	8
Motivation	-	+	0	0	+	6
Interpersonal sensitivity	0	+	0	0	-	5
Influencing	+	0	0	-	+	6
Conscientiousness	-	-	-	-	-	0

Large difference (2 pt)	+
Small difference (1 pt)	0
No difference (0 pt)	-

Figure 38: Difference score of competences, based on Müller and Turner (2006).

The determination of the scores can be explained by looking at Figure 39. 'Strategic perspective' scores a large difference in this category, since the scores in the research of Müller and Turner (2006) vary between 25 and 75. 'Developing' scores a small difference, since the scores vary between 25 and 50. 'Self Awareness' scores 50 no matter which contract type is used and therefore no differences is seen for this competency. This comparison has been done for all competencies, in each of the five parameters.

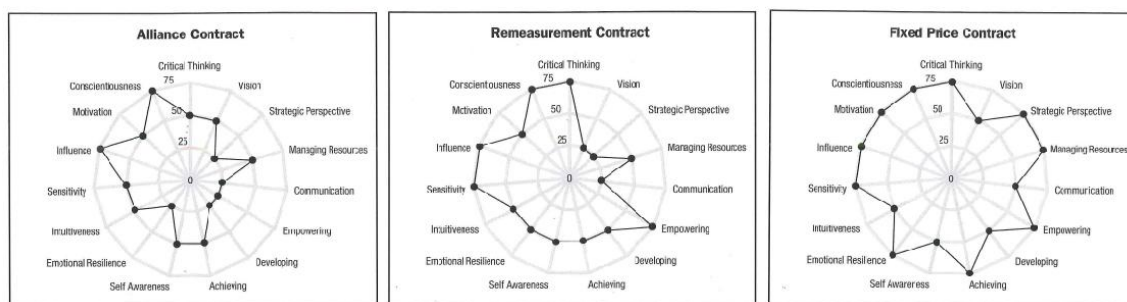


Figure 39: Competency scores in various contract types (Müller & Turner, 2006)

The highest scoring competences in Figure 38 should show the biggest difference in different projects. Some conclusions are not in line with the earlier mentioned conclusions based on Figure 34. The contradictory results on emotional resilience makes it an interesting competency to use in this research and therefore it will be incorporated.

Especially the conclusion that emotional resilience should not show a large difference seems to be incorrect when the research of Müller and Turner is taken into account. Therefore emotional resilience should not be excluded from this research.

To get a good overview of the project managers profile, all three competency categories (IQ, MQ and EQ) are incorporated in this research. Besides the three competencies that have already been selected, the competencies that show the largest differences are used in the research, based on the comparison in Figure 38. The selected competencies are given below.

Intellectual competencies:

- Vision and imagination
- Strategic perspective

Managerial competencies:

- Engaging communication
- Empowering

Emotional competencies:

- Self-awareness
- Emotional resilience
- Influencing

6.5 EFFECT OF CIRCUMSTANCES ON LEADERSHIP STYLE

This chapter has shown what earlier research stated about elements of the main research question. But does earlier research also make suggestions regarding the answer to the main question? Does the contract type as an external factor influence which leadership style is used? A direct answer cannot be found in literature, but there are definitely relations found between the leadership style and external factors or project characteristics.

Müller and Turner (2010) state: "Theoretical implications include the need for more transactional styles in relatively simple projects and more transformational leadership styles in complex projects". The results of their own research validate this statement based on theoretical implications. This does not give answer to the question whether different leadership style are used in practice when the project differs. The research does suggest that circumstances influence which leadership style is appropriate.

In contrast Keegan and Den Hartog (2004) found that the leadership of a project manager is less influential on the success than the leadership of line managers. Therefore they imply that the project managers do not need to use a different leadership style in various situations, since it would not influence the success of the project. This research does have some limitations, since a cross-sectional design was used in which source bias may play a role (Keegan & Den Hartog, 2004). They also mention that the research has only been done in one organisation, which limits wider conclusions of the research. This research suggests that there would not be a clear reason to find different leadership styles in practice when contract types differ.

An earlier research of Müller and Turner (2007) is contradictory with Keegan and Den Hartog, since it showed a difference in project manager's leadership style dependent on the project type. The research showed that the leadership style should at least partly differ when context changes regarding the following elements: complexity, repositioning vs. stable context, contract type, life-cycle stage and culture. Another remarkable outcome of the research was the fact that the dimension 'vision' was seen as unimportant for the project manager. This might explain the fact the Keegan and Den Hartog (2004) did not find transformational leadership suitable for a project manager, even though other dimensions within transformational leadership did show to be important for a project manager. The research showed a clear influence of project characteristics on the leadership style of the project manager, which suggests that a difference would be found in this research.

6.6 LITERATURE REVIEW DISCUSSION

In this last part of the literature review, the noticeable elements of the review will be discussed.

The literature shows some large similarities as well as differences between the results of various researchers. The view on leadership in general has developed over time, which shows large difference, but it can be seen that in the same period of time researchers mostly share opinions regarding leadership. The same counts for leadership styles, for which multiple descriptions are used, but the way of classification is comparable between the researchers. While the descriptions differ, there are a lot of similarities between the descriptions of the various leadership styles.

This brings us to the measurement of leadership styles, for which a lot of researchers use the same methods: the MLQ or the LDQ. The LDQ was used by Dulewicz and Higgs (2005) and Müller and Turner (2006). Therefore you would expect the outcome of the two researches to be similar, but this is not the case. For both researches it was checked which competencies show large differences between managers, but the two cases show different outcomes. A combination of both is used for this research, but it is still a noticeable outcome of the literature review. Apparently the same method does not show the same results, which can have multiple reasons. The method can be not accurate enough, not measuring what is needs to measure, or the samples of both researches are not comparable which results in different outcomes.

The last part of the literature review also shows differences between the results of various researchers. Where Müller and Turner (2006) and Dulewicz and Higgs (2005) claim to see large differences between the scores on the competencies, Keegan and Den Hartog (2004) do not expect these differences for project managers.

Part II

Research design

7. RESEARCH DESIGN

This chapter will describe how the research of this graduation project is done. The literature from the previous chapter has been the base of the research design. The research gives answer to the question: *Which leadership style is applied by project managers in situations with different contract types?*

In order to answer this question, the leadership style of project managers need to be measured, which can be done on the basis of competencies of the project managers (Dulewicz & Higgs, 2005). Therefore the following sub-questions need to be answered first:

1. *What competences do project managers have that mostly work in projects with a traditional contract type?*
2. *What leadership style would fit the competences of these project managers in projects with a traditional contract type?*
3. *What competences do project managers have that work mostly in projects with an integrated contract type?*
4. *What leadership style would fit the competences of these project managers in projects with an integrated contract type?*

7.1 CONCEPTUAL FRAMEWORK

The competencies of the project managers will be described based on the selection of 7 of the 15 dimensions described by Dulewicz and Higgs (2005), which has been explained in chapter 6 on page 43. This enables that a score can be given to the Intellectual, Managerial and Emotional competence of the project managers, which can be translated into a predominant leadership style of that project manager. The results of all project managers that mostly work on projects with traditional contract types combined, will give a typical leadership style for the traditional project manager. The same counts for the results of all project managers on the integrated contract type side of this spectrum.

The leadership style categorization of Dulewicz and Higgs (2005) will be used to describe the project managers that will participate in this research:

- Goal-oriented
- Involving
- Engaging

The chosen dimensions are:

- Vision and Imagination (intellectual competency)
- Strategic perspective (intellectual competency)
- Engaging communication (managerial competency)
- Empowering (managerial competency)
- Self-awareness (emotional competency)
- Emotional resilience (emotional competency)
- Influencing (emotional competency)

Figure 40 shows the conceptual framework of this research, which entails all steps that will be done in order to find the answer to the main research question.

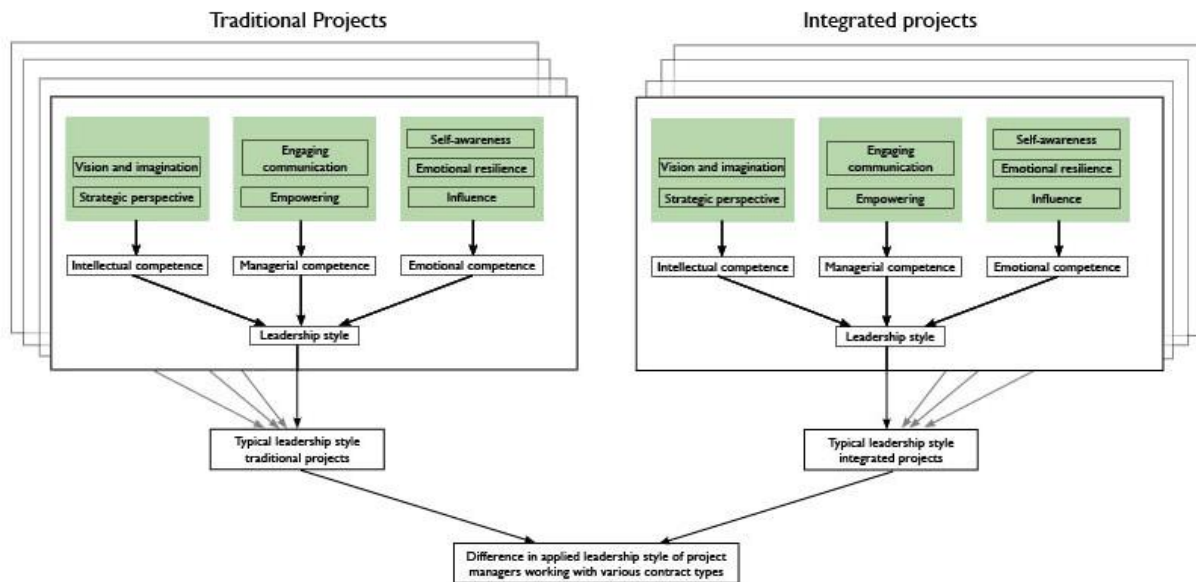


Figure 40: Conceptual framework (own image)

In order to determine whether the contract type is the influential factor on the leadership style, other factors had to be excluded. This was done by comparing projects of which other external factors are equal. The following factors were taken into account:

- The type of project: real estate vs. civil
- The type of project: public vs. corporate
- The size of the project, measured in the budget
- The client: public vs. private
- The experience of the project manager: junior/medior/senior managers

7.2 HYPOTHESES

Based on the literature, some hypotheses can be made, which state the expected outcomes of this research. Firstly, the stability of the context will be addressed. Since the integrated contracts are a relatively new phenomenon in the real estate sector, it can be seen as a rather transformational situation in which the project manager is working. On the counterpart the traditional contract form is used by all parties in the real estate sector for decades, which makes the context rather stable. For a stable context the goal-oriented leadership style is more suitable, while the engaging leadership style is better suitable for a transformational context (Dulewicz & Higgs, 2005). This results in the following hypotheses.

H1: For project managers working on projects with the traditional contract type, the goal-oriented leadership style is more common.

H2: For project managers working on projects with an integrated contract type, the engaging leadership style is more common.

Hypotheses have also been made for each dimension that has been measured, since these dimensions determine the leadership style of the project managers. Dulewicz and Higgs (2005) determined the scores on each competency for the specific leadership styles, which can be seen in Figure 34 on page 41. Working with a

traditional contract asks for a goal set by the project manager. The desired end result often is stated clearly at the beginning of a project, which all later involved parties have to reach. In a project with an integrated contract, the demands for the end result are less clearly stated at the beginning of a project, since a more flexible path is used. This results in the following hypothesis:

*H3: Project managers working with traditional contracts will score **higher** on the dimension 'vision and imagination' than project managers working with integrated contracts.*

The same expectation count for the strategic perspective dimension of the project managers (Dulewicz & Higgs, 2005). In a more unstable situation, such as the integrated projects, there is less need for a broader strategic perspective of the project manager. Where in a traditional project, the focus will probably lay more on avoiding risks, in an integrated project opportunities will be sought-after even if this means that risks will be taken.

*H4: Project managers working with traditional contracts will score **higher** on the dimension 'strategic perspective' than project managers working with integrated contracts.*

These two hypotheses show the expectation that the project managers working with traditional contracts will score higher on the intellectual competencies.

The tender process of the project is different when another contract type is used. In projects with an integrated contract the client and project managers often start a tender for the contractor based on a Program of Requirement, rather than a design. This means that more decisions have to be made during the project, in comparison to the situation with a traditional contract type. This asks for a lot of communication during the project between the involved parties, which leads to the following hypothesis:

*H5: Project managers working with traditional contracts will score **lower** on the dimension 'engaging communication' than project managers working with integrated contracts.*

This is also in line with the expectation that integrated project managers would use an engaging leadership style, which scores higher on this competency (Dulewicz & Higgs, 2005).

The same hypothesis can be made for the empowering dimension of the project managers. In a traditional project, the contracted parties mostly have to execute what is asked from them. They have to follow the directions given by the client and therefore by the project manager. In an integrated project, more responsibility lies in the hands of the contracted company, which means they should be empowered by the project manager.

*H6: Project managers working with traditional contracts will score **lower** on the dimension 'empowering' than project managers working with integrated contracts.*

It is expected that the project managers working with traditional contracts will score lower on the managerial competencies than the project managers working with integrated contracts.

The same is expected for the emotional competencies: the project managers working with integrated contracts will probably score higher than the ones working with traditional contracts. This is in line with respectively the engaging and goal-oriented competency profile as can be seen in Figure 34 (Dulewicz & Higgs, 2005). The new way of working asks emotional resilience of the project manager, which means he/she has to be able to work under pressure. Besides it is important to bring people together, since cooperation is even more essential for the success of a project. Therefore the project managers working on traditional projects will probably score

lower on influencing. Lastly the self-awareness will probably score higher for the project managers in integrated projects, since they should be well aware of the impact of their own emotions and opinions on the project.

*H7: Project managers working with traditional contracts will score **lower** on the dimension 'self-awareness' than project managers working with integrated contracts.*

*H8: Project managers working with traditional contracts will score **lower** on the dimension 'emotional resilience' than project managers working with integrated contracts.*

*H9: Project managers working with traditional contracts will score **lower** on the dimension 'influencing' than project managers working with integrated contracts.*

8. RESEARCH METHODS

At the beginning of the research it was expected that a validated questionnaire could be used to measure the leadership style of the project managers. Since these were not available a questionnaire needed to be developed. This chapter describes the process of developing the questionnaire.

8.1 LEADERSHIP STYLE MEASUREMENT

The questions were in the first instance developed based on the sub-dimensions as described by Dulewicz and Higgs (2005), which are also described in Figure 35, Figure 36 and Figure 37. The reason to start with the exact description was to limit the possibility of misinterpreting the dimensions. Besides that, the list of sub-dimensions has been compared with the example questions that are found in other literature sources. This helped in the precise statement of the questions. For example the example question from Kalshoven et al. (2011) "Encourages subordinates to be independent thinkers" is very much in line with the sub-dimension empowering of Dulewicz and Higgs (2005). The use of the sub-dimensions and example questions resulted in the following tables with statements to which the project managers could respond.

Till what extend are the following statements applicable to you?

1 = Not applicable

2 = Rarely applicable

3 = Regularly applicable

4 = Always applicable

Vision and imagination	I am imaginative in all aspects of my work	1	2	3	4
	I am innovative in all aspects of my work	1	2	3	4
	I establish sound priorities for future work	1	2	3	4
	I have a clear vision of the future direction of the project	1	2	3	4
	I foresee changes impacts of changes on the vision of the project	1	2	3	4

Strategic perspective	I am able to see wider issues and broader implications	1	2	3	4
	I explore a wide range of relationships	1	2	3	4
	I balance short- and long-term considerations	1	2	3	4
	I am sensitive to the impact of my actions and decisions across the project	1	2	3	4
	I identify opportunities and threats	1	2	3	4
	I am sensitive to stakeholders' needs	1	2	3	4
	I am sensitive to the implications of external factors on decisions and actions	1	2	3	4

Engaging communication	I am a lively and enthusiastic communicator	1	2	3	4
	I engage other and gain their support	1	2	3	4
	I clearly communicate instructions and visions to others	1	2	3	4
	My communication is tailored to the audience interests	1	2	3	4
	My communication style inspires others	1	2	3	4
	My communication style conveys approachability and accessibility	1	2	3	4

Empowering	I give others autonomy	1	2	3	4
	I encourage others to take on personally challenging demanding tasks	1	2	3	4
	I encourage others to solve problems	1	2	3	4
	I encourage others to produce innovative ideas and proposals	1	2	3	4
	I encourage others to produce their vision and a broader vision	1	2	3	4
	I encourage a critical faculty and a broad perspective	1	2	3	4
	I encourage to challenge existing practices, assumptions and policies	1	2	3	4

Self-awareness	I am aware of my own feelings	1	2	3	4
	I am capable to recognise and manage my own feelings and control them	1	2	3	4
	I believe I am capable of managing my own emotions	1	2	3	4
	I can control the impact of my emotions in the work environment	1	2	3	4

Emotional resilience	I perform consistently in various situations under pressure	1	2	3	4
	I adapt my behaviour appropriately under pressure	1	2	3	4
	I balance the needs of the situations with the needs of the individuals involved	1	2	3	4
	I retain focus on course of action in the face of personal challenge or criticism	1	2	3	4

Influence	I can persuade others to change their views based on an understanding of their position	1	2	3	4
	I can persuade other to change their views since I listen to their perspectives	1	2	3	4
	I provide rational for change	1	2	3	4

With these statements as the first start of the questionnaire, multiple questions per statement were developed. Two types of questions are incorporated in the research based on general and project-based information. This ensures the validity of the answers, since people tend to answer questions more positively if they apply to the general being of the person (Van der Pligt & Blankers, 2013). When you ask someone whether they are innovative or not, they are likely to apply at the positive side of the spectrum. If you change the question and ask if they have used innovative ideas during a specific project, the answer to the question can differ. Therefore is decided that the questions are asked in both ways, to make sure the answers are validated, which is called inter-item reliability (Van der Pligt & Blankers, 2013, p. 85). This entails that there are multiple questions that measure the same item. An overview of these questions can be found in Appendix 3: English questions, extended version.

SCALE SELECTION

As can be seen in the early versions of the questionnaire, a four point scale is used. This has to do with the wish of forcing the participants to make a decision. Usually in a five point scale, the middle answer is seen as the neutral (Van der Pligt & Blankers, 2013, p. 177). Respondents will usually see the middle answer as the 'normal' answer (Van der Pligt & Blankers, 2013, p. 68) and are therefore more likely to select that option. The four point scale is therefore a tool to make sure that the respondents really think about their answer and have to make a decision in a specific direction.

The next step of the development of the questionnaire was to select the questions that would be used in the research. A limited selection had to be made, since a longer questionnaire would have a negative effect on the response-rate. Improving the response-rate within this research is essential, since the resource of the researcher are limited and an online questionnaire in general has a low response-rate (Van der Pligt & Blankers, 2013, pp. 70-75). Therefore a time limit was set to the questionnaire, which entailed that the final questionnaire should not take longer than 15 minutes to make. With a short test of how long it took to answer the questions, the limit of the multiple choice questions was 40. This would take approximately 10 minutes, which leaves 5 minutes to answer the open questions. The selection and formulation of the questions was done based on the following parameters (Van der Pligt & Blankers, 2013):

- Plural questions should be avoided, which means that questions cannot contain the word 'and';
- Double denial should be avoided in the questions;
- The questions should be understandable;
- The questions should not be steering, which also meant that questions with a very favourable answer had to be excluded;
- The questions should not be too personal, which would have the effect of people not wanting to answer the questions;
- The questions should be evenly spread between general and project related questions;
- The selected sub-dimensions should all be asked in multiple ways, to obtain the inter-item reliability.

Some of these parameters can be seen as arbitrary, since sometimes clear selection criteria could not be given. However, the selection of the questions is done in consultation with four peer reviewers and the questionnaire is later be tested by junior project managers to check these parameters again.

This resulted in the English version of the selected questions which can be found in Appendix 4: Selected English questions.

8.2 DESCRIPTIVE QUESTIONS

The next part that had to be developed for the questionnaire is the section with open questions. This section is mostly intended to rule out the other external factors that could influence the leadership style of the project manager. Therefore the open questions are based on the earlier mentioned external factors below:

- The type of project: real estate vs. civil
- The type of project: public vs. corporate
- The size of the project, measured in the budget
- The client: public vs. private
- The experience of the project manager: junior/medior/senior managers

The aim of the research is to have these external factors as much the same as possible for all the participating project managers. This is checked in the open questions, which ask for these external factors in general. In order to see the influence of the contract type, all other answers to the open questions should be as much the same as possible. The project-related part of the questionnaire also includes open questions, which has the same goal as the earlier open questions, namely the exclusion of other external factors on the leadership style.

Besides these subjects, another essential question is asked, which is about the appointment of the project managers to certain projects. In this research the focus lays on the applied leadership style of project managers in situations with different contracts. This means no answer is given to the question whether the project managers apply the right leadership style in each occasion. Therefore it is important to know which requirements are used to apply project managers to certain projects.

Besides these specific questions, some general information is asked, such as the gender and age of the project managers.

8.3 TRANSLATION TO DUTCH

The next step of the questionnaire development was to translate the English questions to Dutch. This was done in order to improve the response-rate of the questionnaire, since it would be spread among Dutch project managers. However, translating the questionnaire to another language caused the risk of losing the right meaning of the questions (Chen et al., 2014). In order to discharge this risk, the Dutch questionnaire was translated back to English by another student who did not see the original English questions. This back translation technique was copied from the research of Chen et al. (2014). The meaning of the questions should be the same in the back translated questions as in the original English questions. An overview of this back translation can be seen in Appendix 5: Back translation Questionnaire.

Out of the 40 questions, the meaning of three questions changed with the back translation. Therefore these three questions were adjusted:

Original: *Ik stimuleer anderen om na te denken over mogelijke veranderingen.*
Improved: *Ik stimuleer verandering door de noodzaak te onderbouwen.*

Original: *Het projectteam volgde mijn handelswijze.*
Improved: *Het projectteam volgde mijn plan van aanpak.*

Original: *Tijdens het project heb ik het projectteam gestimuleerd om kritisch naar gegeven zaken te kijken.*
Improved: *Tijdens het project heb ik het projectteam gestimuleerd om een kritische blik te hebben.*

In total three questions did not get the same meaning as intended in the original questions, which is 8% of the whole questionnaire. Therefore the translation to Dutch was seen as reliable and could be used for this research.

8.4 QUESTION ORDER

During the development of the questions, the overview of questions was still ordered according to the competencies. For the final questionnaire the questions had to be mixed, to make sure the participants could not see the connection between questions that measured the same competency.

The questions also had to be ordered to the general and the project specific questions, since each part has its own opening questions.

The further mixing of the questions is mostly done randomly. There are however some questions that ask for a specific place within the questionnaire. The most important reason to give questions a specific place, was the level of personal information that the participants had to give. Some of the questions might be considered as very personal and should therefore not be the opening of the questionnaire. An example of such a question is: *'Ik ben in staat mijn eigen emoties te managen'*. These questions were placed in the latter part of the questionnaire, to make sure the participants do not feel uneasy.

8.5 TEST QUESTIONNAIRE

The questionnaire has first been tested on four junior project managers, before distributing it to the participants. These junior project managers were asked to report all mistakes, uncertainties or other noticeable aspects within the questionnaire. These notifications resulted in some minor changes only to the questionnaire, mostly on choice of words. And they clearly asked for a more extensive introduction at the

beginning of the questionnaire. This question has even been extended by adding an ethical clause to the research in the form of an informed consent letter. Information on this informed consent letter can be found in the information box below.

The test questionnaire also indicated some important information, such as the time it took to answer the questions (<15 minutes). Which is important information to give to the project managers to convince them to participate.

The last adjustments were made, which resulted in the final version of the questionnaire. The final version can be found in Appendix 6: Final version questionnaire.

INFORMED CONSENT LETTER

Ethics is an important issue in any research, but sometimes even needs more attention. This research uses some very personal questions, which asks for an ethical plan of approach. Using the answers should be done in an ethical way and the participants should be informed about the usage of the answers they give. This has been done by adding an informed consent letter to the questionnaire, which has to be signed by the participants. This informed consent letter can be found in Appendix 8: Informed consent letter. The most important measures that have been taken regarding the ethical responsibility of the research are:

- The answers are never published in combination with the participants or the company's name.
- The answers are only accessible for the researcher.
- The information will not be stored any longer than necessary and will be deleted after finishing the research.
- Participating in the research is completely voluntary and can be stopped at any moment in the process.

8.6 SCORING THE ANSWERS

The answers to the closed questions had to be translated into scores in order to compare the various answers with one another. The answers that the participants gave in the questionnaire are translated to scores in the following way:

Answer	Points
"Helemaal mee eens" OR "Altijd" OR "Helemaal"	3
"Enigszins mee eens" OR "Vaak" OR "Grotendeels"	2
"Enigszins mee oneens" OR "Zelden" OR "Gedeeltelijk"	1
"Helemaal mee oneens" OR "Nooit" OR "Helemaal niet"	0

Table 18: Scoring of answers in questionnaire

The scores of the project managers on the competencies can be separated in three categories: total, general and project-based. The total score is the average on each competency for all items in the questionnaire. The general score is the average on each competency in the first part of the questionnaire with the general questions (Q1.1 - Q1.21). The project-based score is the average on each competency in the second part of the questionnaire with the project-related questions (Q2.1 - Q2.19).

8.7 VALIDITY

The validity of a research can be categorized in three parts: internal validity, external validity and construct validity (Van der Pligt & Blankers, 2013, pp. 92-93). Internal validity entails the correctness of reason in the total research. External validity has to do with the question whether the results can be generalized. Construct validity has to do with the question whether the instrument actually measures what it has to measure, which is especially important for the questionnaire. Various measures are taken to reach the highest validity possible. The easiest way would be to use a validated questionnaire, but this was not an option as described in the literature review chapter, since there are no useable questionnaires available.

One element that might be questioned regarding the validity of the research is the fact that the project managers will use self-assessment. The information block on page 37 mentioned the uncertainty of the validity of self-assessment, where Symons et al. (2009) argue that self-assessment does not give a good reflection on reality while Young and Dulewicz (2006) and (Wren & Dulewicz, 2005) do promote self-assessment. There is not one accepted conclusion on this matter, which asks for measures to be taken in this research. An extra questionnaire is used, which is answered by other people from the work-environment of the project manager. This questionnaire is a shorter and the general questions of the regular questionnaire are slightly adjusted. This questionnaire will be used to check whether the self-assessment is reliable. This use of multiple reviewers is called inter-rater reliability. The second questionnaire can be found in Appendix 7: Questionnaire external reviewer. A potential problem with this approach is that the answers might be influenced by the personal connection between the rater and the project manager. When the rater likes the project manager, he/she will be more likely to answer the questions in a positive manner, which is called the halo effect (Nisbett & Wilson, 1977). Open questions at the beginning of the questionnaire about the relationship between the rater and the project manager are added, to be able to take this into account for the analysis of the results. To avoid the halo effect even further the closed questions are made neutral, just like in the self-assessment questionnaire, to make sure the rater is not pushed in any direction (Van der Pligt & Blankers, 2013). The participating project managers were asked to appoint an external reviewer if they accepted to be rated by someone else. The change was very big that many project managers did not want to be rated by an external reviewer. The gathered external reviews were used to determine the validity of the self-assessment in this questionnaire.

As earlier mentioned an inter-item reliability is also applied, by using multiple questions that measure the same dimension. This is even done in two levels: each dimension is measured using multiple sub-dimensions and each sub-dimension is measured using multiple questions. This results in the maximum construct validity as possible for this research.

The validity of the LDQ is claimed in multiple articles (Dulewicz & Higgs, 2005; Galvin et al., 2014; Müller et al., 2012; Müller & Turner, 2007; Müller & Turner, 2010; Shao & Müller, 2011). Since these articles do not include the questionnaire, the validity cannot be verified since the research cannot be repeated. This research has taken multiple steps to achieve validity, which can all be checked and repeated by other researchers.

Part III

Data

9. DATA COLLECTION

The data is collected through online questionnaires that is spread under project managers in the Netherlands. As stated earlier, there were some boundaries, to which the projects and the managers had to answer. There was aimed to reach project managers with the following requirements:

- The project managers should work on real estate project (not on civil projects)
- The project managers should mostly work on public real estate, rather than corporate real estate.
- The project managers should be experienced, which means that a medior or senior position was preferred.
- The project manager should work on new buildings or large renovations, since the project management of small renovations might ask for a different leadership style.

However, the most important and challenging part was to get enough responses from the project managers. Therefore these boundaries are used as an aim and questions at the beginning of the questionnaire have been used to give an insight of the position of the participants regarding these boundaries. The achieved inputs will led to which comparisons could be made. Regarding the determination of the necessary amount of respondents, other research were taken as an example:

- n=400 (Müller & Turner, 2010) worldwide research
- n= 115 (Keegan & Den Hartog, 2004) research in the Netherlands
- n= 414 (R. Turner et al., 2009) worldwide research
- n= 400 (Müller & Turner, 2007) worldwide research
- n = 222 (Dulewicz & Higgs, 2005)

These researchers had access to large data bases of project managers, which is not the case in this research. Therefore an aim of 100 respondents was set for this research, which turned out to be hard to achieve. The following chapter gives an overview of the data that has been gathered and the general information of the participants.

10. DESCRIPTIVE STATISTICS

This chapter describes the general data that is taken from the participating project managers. In total 54 project managers participated in the research (n=54), of which 45 are male and 9 are female (Figure 41). The age of the participants is measured in four categories, which can be seen in Figure 42. The largest part of the sample is below 45 yrs old, with the mean being 36-45 yrs old.

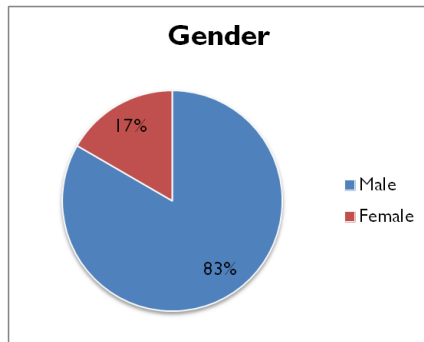


Figure 41: Gender participants questionnaire

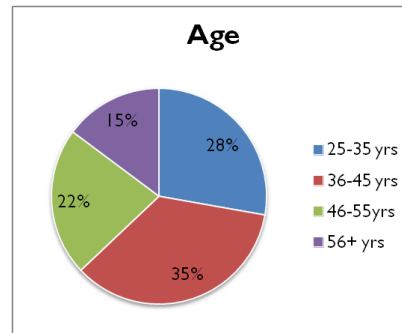


Figure 42: Age participants questionnaire

There are three different educational levels within the sample: MBO, HBO and WO. The largest part of the sample has a WO education level. The overall education level is very high in this research. The mean of the years of experience of the project managers is 11-20 years.

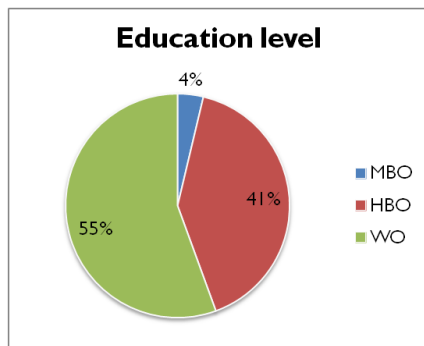


Figure 43: Education level participants questionnaire

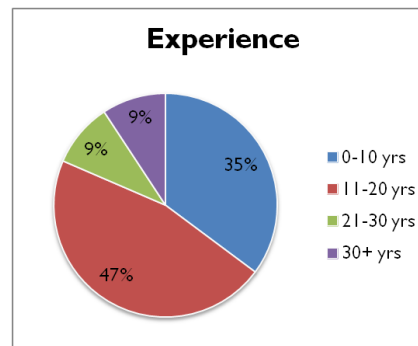


Figure 44: Years of experience as a project manager

The aim was to make sure the participants work with public real estate and they were asked to state which type of real estate they use most. 81% of the sample mostly works with public real estate, while 19% mostly works with commercial real estate (Figure 45). The participants also indicated which contract type they used most. Of the sample 48% mostly works with traditional contracts, while 35% uses a majority of integrated contracts. 19% of the participants indicated that they used both contract types equally (Figure 46).

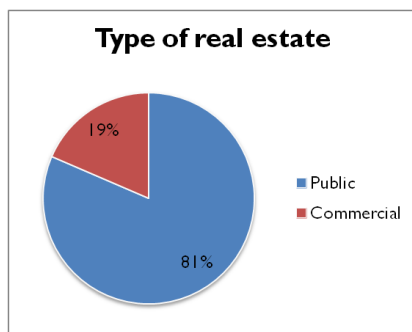


Figure 45: Type of real estate mostly worked on by the participants

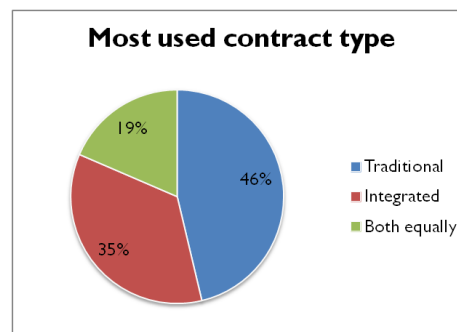


Figure 46: Most used contract type by participants

The participants indicated which contract type they expect to use most in the coming five years, for which they could give multiple answers. Figure 47 shows the times each contract type was mentioned by the participants of the questionnaire. Design and Build is expected to be used most, followed by the traditional contract type. At the end of the questionnaire the participants were asked whether they wanted to be reviewed by someone from their work environment, which would be used to get a better view on the competencies. 52% of the participants indicated that they did not want someone else to determine their competencies. The external questionnaire will therefore be used to test the representativeness of the self-assessment by checking the answers of the participants that did appoint an external reviewer.

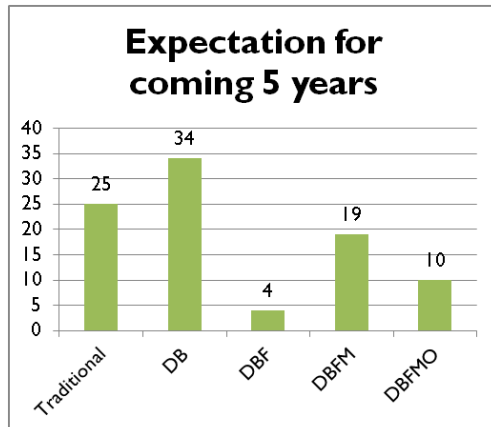


Figure 47: Expected use of contract types in the next 5 years

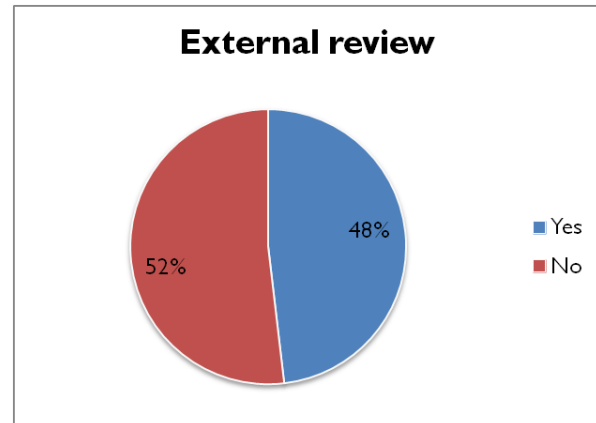


Figure 48: Wish for external review by the participants

The last general question that will be discussed in this chapter is about the allocation of project managers on various projects. The participants indicated which factors are taken into account when project managers are positioned at a certain project in their company, for which they could give multiple answers. Out of the 54 participants, 41 mentioned the availability of the project manager to be a factor, while 32 mentioned 'experience in general' and 30 mentioned 'experience with the contract type'. Only 17 participants mentioned the leadership style of the project manager as a reason for the allocation to a certain project.

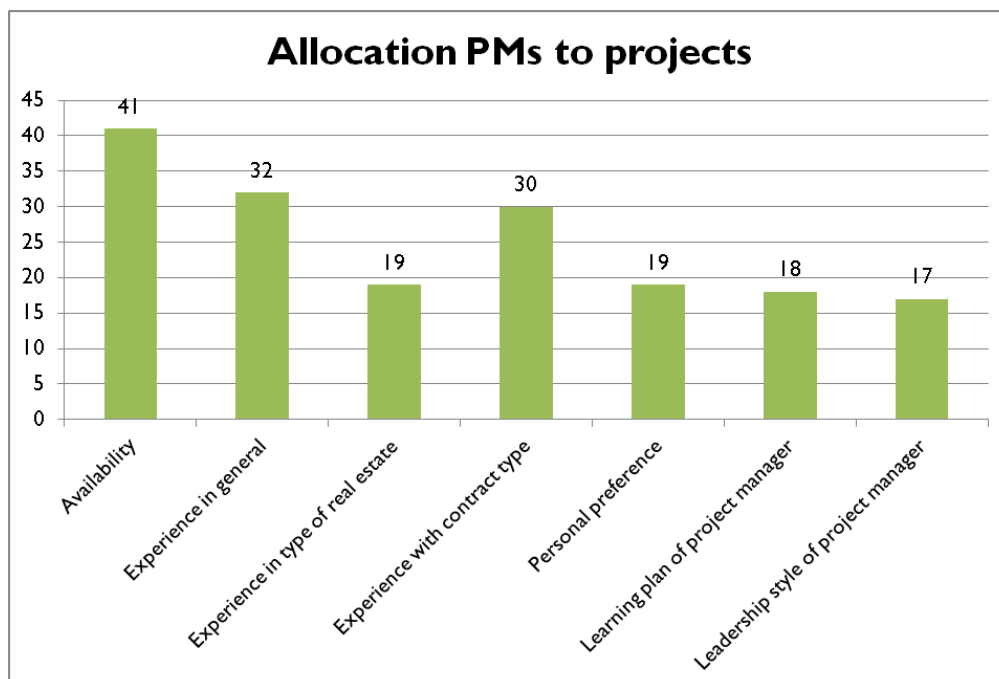


Figure 49: Factors that determine the allocation of project managers to specific projects

Part IV

Analysis

11. ANALYSIS

This chapter describes the analysis of the results of the questionnaire. Besides the items related to the research question, other factors will be compared as well, such as the competency scores of men and women. The chapter will start with an overview of the expectations from practice. Then it will continue with the analysis of self-assessment. It will conclude with the analysis of the outcomes of the questionnaire.

11.1 EXPECTATIONS FROM PRACTICE

All participants of the questionnaire were also asked to give their expectation on the question whether a different leadership style is applied when different contract types are used. This can be seen in the questionnaire in Appendix 6: Final version questionnaire.

With the answers to this question a clear view from practice can be given on the main research question. Figure 50 shows what the participants of the questionnaire have answered to the question. There is a clear majority of the project managers that do expect a difference in leadership style when the contract types differ.

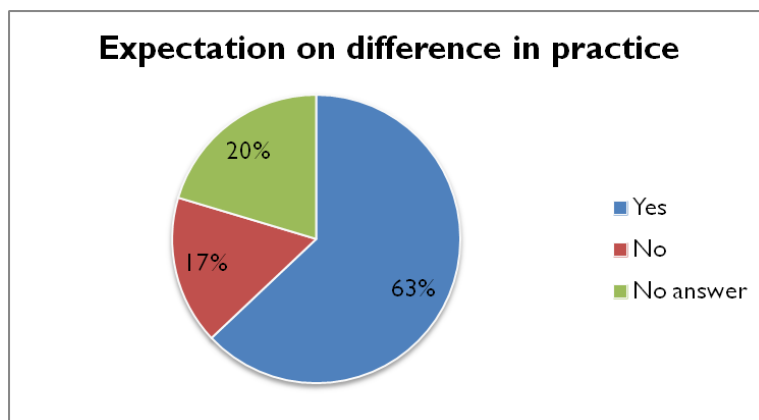


Figure 50: Answers to the question whether there is a difference in leadership style between traditional and integrated contracts.

The participants were also asked to give an explanation for their answer, which resulted in some noticeable comments for the research. Some of the comments refer directly to one of the competencies that were measured in the research and those comments will be discussed here.

"Integraal vraagt meer van samenwerking en visie op lange termijn"

This project manager mentions that an integrated contract asks for the creation of a vision for the long term by the project manager, which can be linked to the vision and imagination competency in this research. The fact that this competency would score higher for integrated contracts is contradictory to hypothesis 3. This participant was not the only one who mentioned vision and imagination to be important for integrated contracts. The following two quotes are taken from other participants and imply the same statement.

"Bij een geïntegreerd project is samenwerking en vertrouwen belangrijker dan in een traditioneel project. Projectmanagers van zowel opdrachtgevers als opdrachtnemers-zijde moeten daartoe gezamenlijke condities scheppen voor samenwerking. Aspecten als missie en visie zijn daarom in dergelijke contracten belangrijker."

"Een DBM tot een DBFMO traject vraag om centrale project visie tm het einde van het project, het over je eigen grenzen heen kunnen kijken, cocreatie in het bidsteam, gelijkrichten van de belangen binnen het bidteam en richting de opdrachtgever, focus op the best for project, benadering vanuit levensduurgedachte"

Another competency that is mentioned in multiple answers is empowering. There are multiple project managers that state that in integrated projects it is important that the members of the project team get more autonomy and the power to take decisions. This is in line with hypothesis 6 which states: Project managers working with traditional contracts will score **lower** on the dimension 'empowering' than project managers working with integrated contracts. This hypothesis is based on Dulewicz and Higgs (2005). The following quotes from the answers are in line with this train of thought.

"Ik denk dat de meer 'geïntegreerde' contractvormen met meerdere aspecten een projectmanager vereisen die nog meer op hoofdlijnen stuurt en meer afhankelijk is van de autonomie van zijn projectteamleden."

"Bij een traditioneel project moet de projectmanager meer zijn stempel (kunnen) drukken op het project. Bij een geïntegreerd project moet hij meer (kunnen) loslaten."

Furthermore the emotional competence of the project managers is mentioned multiple times. The exact words of the competencies are not used, but the project managers often use the terms 'hard' and 'soft' skills. They state that in integrated contracts the soft side of the manager is more important, while the project managers can act harder when a traditional contract is used. This is in line with the hypotheses 7, 8 and 9: when working on integrated contracts the emotional competencies, which can be compared with the 'soft' side of the project manager, are used more often than in traditional contracts. The following quotes show that multiple of participants agree with this statement.

"Bij geïntegreerde contracten/projecten maak je iets samen; de zachte kant zal hierbij in je leiderschapstijl belangrijk zijn. Het is niet van "hullie en zullie"; het is samen."

"Bij een traditionele project is de harde kant van projectmanagement belangrijker en bij geïntegreerde projecten is het meer van belang om te managen op de zachte kanten."

"Er wordt bij een integraal project gevraagd om meer disciplines te managen (breder) en er zijn meer fasen bij betrokken (langer). Dat betekent dat er ook meer verschillende typen partijen en personen betrokken zijn en daarmee moeten verschillende bloedgroepen gemanaged worden. Daarvoor is een bredere blik nodig en begrip/empathie voor verschillende belangen, processen en mensen."

The answers of the project managers that did not think the leadership style changes when the contract type differs can be split up in two groups. The first group states that the leadership style of a person is just as it is and does not change even though the circumstances change. An example of this way of thinking can be seen in the following quote.

"Hoewel het bij verschillende contractvormen over verschillende onderdelen gaat, zal iemands manier van leidinggeven daardoor niet veranderen."

The other no-group states that the leadership style is influenced by so many other factors that it would not make sense to state a direct difference between the contract types. Some elements that are mentioned that influence the leadership style are: personality, the people that need to be steered, situational differences as politics, press and residents, culture and the client. The following two quotes are examples of opinions of project managers that can be categorized in this group.

"Dat hoeft niet. Als beide projectvormen te maken hebben met het omgaan met mensen binnen contactuele afspraken. De wijze van leiderschapstijl heeft ook een relatie met je persoonlijke stijl, wellicht karakter. De ene manager is meer systemisch, de andere meer een peoples manager en team builder. Daarnaast kan je stijl beïnvloed worden door de

situatie. Je gaat wat anders om met een team van opdrachtgevers dan met een team van bouwvakkers. Tenslotte zijn er vaak partijen die geen contractuele relatie met je hebben: omwonenden, de pers, de politiek, de vergunningverleners, belangengroepen. Die benader je dus anders en de moeten anders gemanaged worden. Een manager managed vaak situatief."

"Nee is deels afhankelijk van manier van contracteren, maar hangt nog veel meer af van het soort project, de opdrachtgever en de cultuur tussen de gebruikers onderling. Plus elke projectmanager heeft een eigen stijl afhankelijk van het karakter van de persoon. En verschillende karakters kunnen in beide contractvormen of soort project tot hun recht komen. Alles hangt af van de samenwerking dan."

11.2 SELF-ASSESSMENT ANALYSIS

As stated earlier in this research, the validity of self-assessment is by some researchers approved (Wren & Dulewicz, 2005; Young & Dulewicz, 2006) and by some researchers disapproved (Symons et al., 2009). Therefore the aim of this research was to get an external reviewer for each participant to rate the competencies as well. A part of the participating project managers accepted an external review and all the mentioned reviewers were contacted. In the end 12 external reviews were gathered that are used to perform a check whether self-assessment give a representative image of reality.

The self-assessed scores of the concerning project managers are compared to the scores of the external reviewers. Since the external reviewers only answered general questions about the project managers, also the general score of the self-assessment will be used for the comparison. The 20 questions of the external questionnaire are compared to the similar questions in the self-assessment questionnaire. Figure 51 shows the differences visible for all questions (12 X 20 questions). 58% of the questions is answered exactly the same, for 38% the answered differed 1 point and 4% of the questions were answered with 2 points difference.

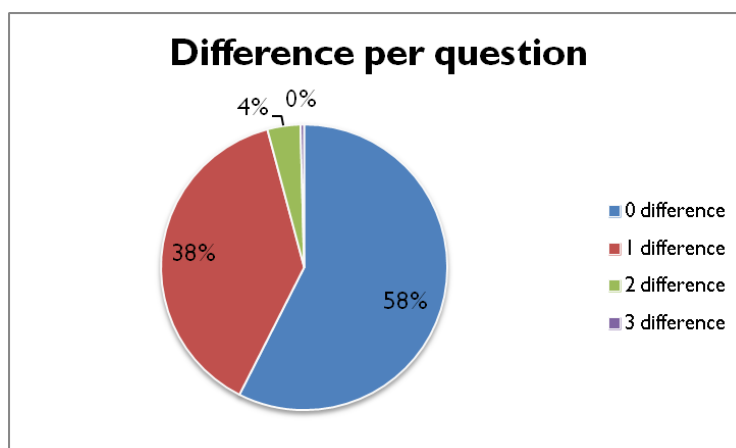


Figure 51: Score difference self-assessment and external review

The next step in the analysis is the comparison of average scores on the competencies. Not all competencies are measured with the same amount of items in the questionnaire, therefore the error margin is determined per competency, which can be seen in Table 19. The less questions are asked, the larger the error margin is, since one answer has more influence on the average in that case.

	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
Amount of questions	3	3	4	2	2	4	2
Error margin	0,33	0,33	0,25	0,5	0,5	0,25	0,5

Table 19: Error margin per competency

For each project manager it is defined which scores on competencies fall within the error margin for that specific competency. Table 20 shows the comparison between the self-assessed score and the score of the external reviewer. A positive number entails that the project manager rated him- or herself higher than the external reviewer, while a negative score means the own score is lower. All marked numbers fall outside of the error margin. It can be seen there is no 100% match on the self-assessed and external scores, but there is a larger similarity. The comparison between the self-assessed and the external score of each project manager displayed in radar graphs can be found in Appendix 9: Self-assessment vs. external review.

	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
N5	-0.17	-0.33	0.00	0.00	0.00	-0.50	0.50
N1	-0.08	0.33	0.75	-1.00	0.00	0.00	0.50
N21	-0.42	0.33	-0.25	-0.50	0.00	0.25	-0.50
N13	-0.42	-0.33	-0.25	0.00	0.00	-0.25	-1.00
N22	0.33	-0.33	-0.25	0.50	0.00	0.25	0.00
N24	0.00	0.67	-0.25	-1.00	0.00	-0.25	0.50
N17	-0.75	0.33	0.00	0.00	0.50	-0.25	0.50
N36	0.42	0.67	0.00	-1.00	0.00	0.00	-0.50
N34	-0.08	0.33	0.50	-0.50	-0.50	0.25	0.50
N32	0.17	0.67	0.00	-1.00	0.50	0.25	0.00
N39	-0.42	-0.67	0.00	0.00	0.00	-0.50	0.50
N33	0.92	0.33	0.00	-0.50	-0.50	-0.75	0.00
Percentage match	50%	67%	83%	67%	100%	75%	92%

Table 20: Comparison self-assessment with external review

The match of the self-assessed and external score vary between the competencies. Self-awareness has the highest match, while vision and imagination has the lowest match. The reason for a difference in scores can have multiple reasons. The first reason can be that the formulation of the question is unclear, but that is ruled out in this research by the way of developing the questions and using the test questionnaire. Another reason can be the halo-effect, which entails that the external reviewer gives higher score when he/she likes the project manager that is rated (Nisbett & Wilson, 1977). Table 21 gives a check regarding the halo-effect and shows the score that the project manager got from their external reviewer (the average of question A5, A6 and A7). There is one case in which the halo-effect might be visible, which is N13 of whom the own score was 7 times lower than the external score, while it was 1 time higher. When looking at the given score by the external reviewers, N13 has the second lowest score, which is not in line with the suggested halo-effect. All other participants do not show a large majority of questions that are given a higher score by the external reviewer. The halo-effect is not apparent in this research. Therefore it can be concluded that the difference in the scoring are actual differences on the opinion about the competencies.

Participant	Score	External score > own score	External score < own score	Scores are equal
N5	8,00	6	3	11
N1	7,00	2	7	11
N21	8,67	4	2	14
N13	7,67	7	1	12
N22	9,00	2	3	15
N24	8,00	5	6	9
N17	9,00	4	4	12
N36	10,00	4	3	13
N34	8,33	3	6	11
N32	8,00	2	4	14
N39	8,67	7	4	9
N33	9,33	7	6	7

Table 21: Halo-effect check

The analysis of the individual questions and the average score on the competencies show large similarities between the self-assessed and the external scores. However, it cannot be concluded that self-assessment is a perfect representation on reality. Self-assessment can be used as a tool, but would still be best in combination with other methods.

11.3 OUTCOMES AND ANALYSIS

The first analysis is done on the average total score of the complete sample, of which the results can be seen in Table 22 and Figure 52.

Total score	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
Average score	2,30	2,48	2,49	2,02	2,33	2,26	2,44
Standard deviation	0,27	0,29	0,32	0,39	0,43	0,34	0,33

Table 22: Average score on competencies of participants and standard deviation

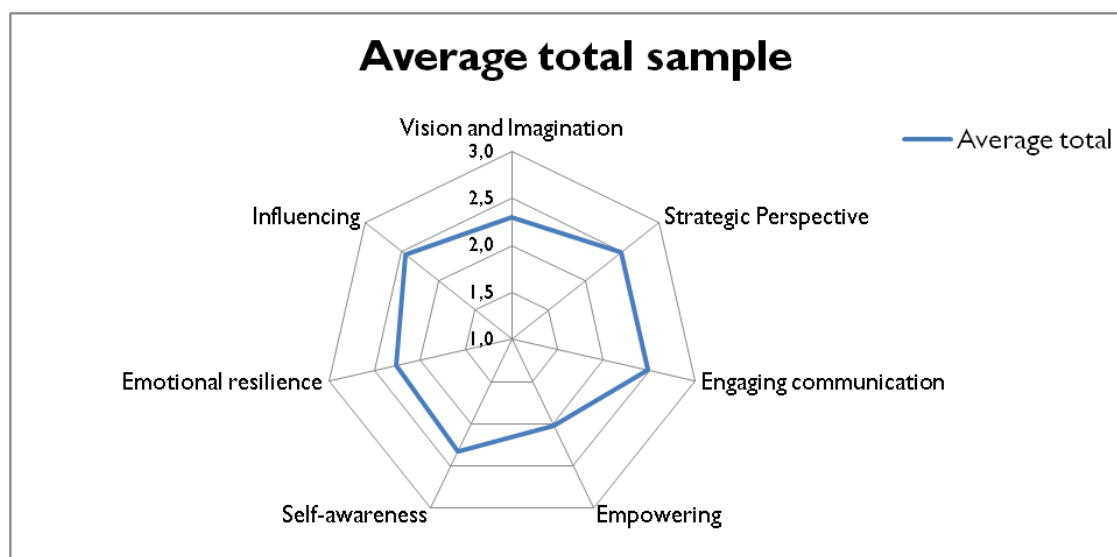


Figure 52: Average total score on competencies of all participants

There are some noticeable elements on these outcomes. Firstly, all average scores are relatively high. The participants have rates themselves rather positively on each dimension, which is supported by Figure 53. This figure gives an overview on the answers to all received leadership style questions. 91% of all given answers is the score of 2 or 3, which results in very high scores in general.

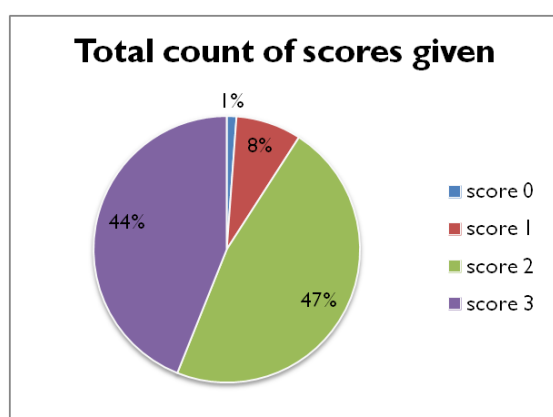


Figure 53: Count of scores on self-assessment

Secondly it can be seen in Figure 52 that the score on empowering is significantly lower than the scores on the other competencies. Apparently the project managers score themselves lower on issues regarding giving autonomy to others and stimulating them to bring up their own ideas and make decisions. This is in line with the fact that more than half of the project managers did not want to be rated by another person on their competencies. Apparently project managers are not likely to give others decision-making power.

Lastly the standard deviation of the scores states something in the difference between the answers of the project managers. The largest differences between the scores are visible on the self-awareness and empowering competencies. This means that the score on these competencies show a larger difference between the participants of the questionnaire. The smallest differences are visible on vision and imagination and strategic perspective, which are the two intellectual competencies in this research.

The next analysis compares the average score of all participants on the general questions and the project-based questions. The comparison of these scores can be seen in Table 23 and Figure 54.

	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
General score	2,36	2,48	2,55	2,01	2,48	2,28	2,28
Project-based score	2,17	2,48	2,37	2,05	2,28	2,18	2,54

Table 23: Average general and project-based score

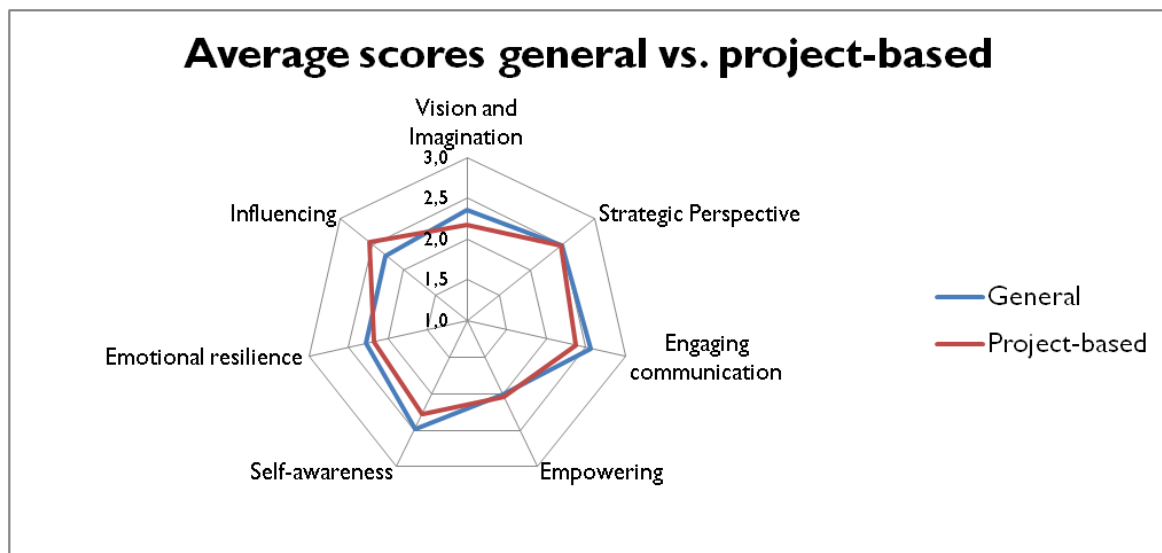


Figure 54: Comparison average scores on general and project-based questions

If all competencies are combined, the average general score is slightly higher than the average project-based score. This is in line with the expectation that people tend to score more positively when the questions are about the general being of the person (Van der Pligt & Blankers, 2013).

However, not for all competencies the average general score is higher than the average project-based score. This is most clear for the influencing competency, where the project-based score is clearly higher. In general the project managers expect to have less influence on the people they lead then they experience to do during a project.

Other competencies clearly get a higher score in the general part then the project-based part: vision and imagination, engaging communication and self-awareness. The project managers score themselves higher on these competencies in general than they seem to have experienced in practice.

Both men and women have an average total score of 2,33 if all competencies are combined. This is contradictory to the statement of (Symons et al., 2009) that in general men score themselves higher than women. When competencies are compared, some differences can be seen between men and women. Firstly the average of the total score, which can be found in Table 24 and Figure 55, shows a distinctive difference on one competency, which is self-awareness.

Total score	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
Men	2,29	2,49	2,50	2,03	2,29	2,28	2,43
Women	2,31	2,44	2,40	2,00	2,52	2,20	2,48
Sig. unequal means	0,904	0,613	0,388	0,885	0,109	0,515	0,755

Table 24: Average total score men vs. women

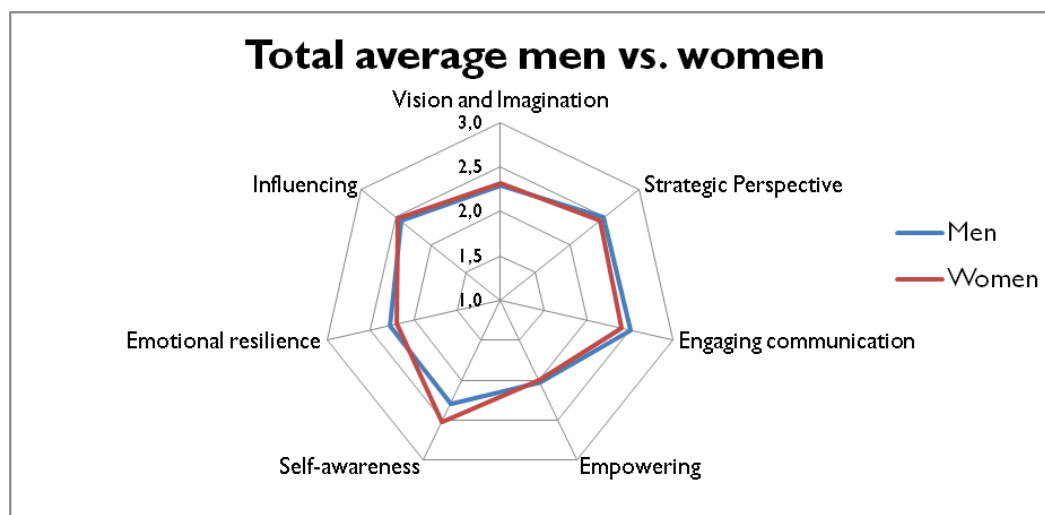


Figure 55: Average total score men vs. women

When the general and project-based score are compared (Figure 56), more differences are visible. Regarding the self-awareness, the difference is made in the project-based score, where women score higher than men. On the general score, men score higher for the empowering competency, of which the average of the women is very low compared to all scores. However, in the project-based environment the women score higher on empowering than men. This implies that in general men are better at empowerment than women, but women have applied it more in the projects they have done. In the general score there is no large difference between men and women for engaging communication, but in the project-based environment the men score higher than women on this competency. This means that men apply this more in their projects than women.

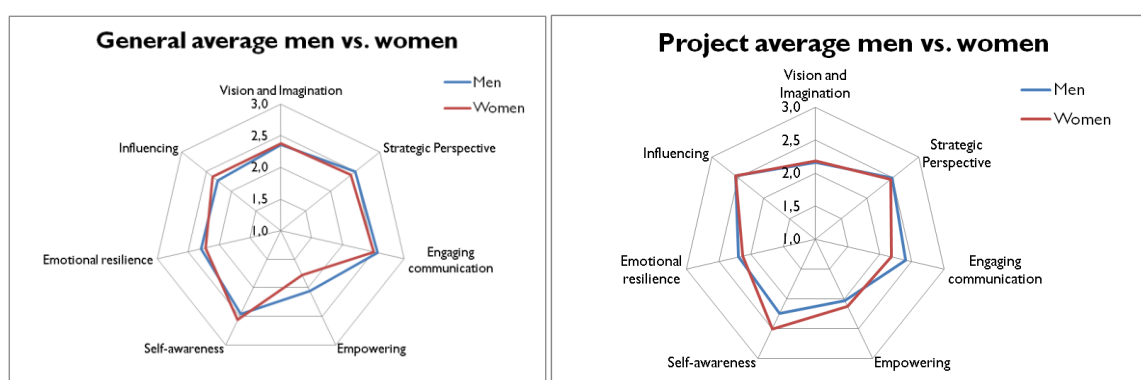


Figure 56: General and project-based scores of men and women

Most of the competencies do not show a difference in the total score between project managers that mostly work on public real estate and project managers that mostly work with commercial real estate. Two competencies do show a difference: empowering and influencing. For both competencies the commercial project managers have an lower average score than the public project managers. This entails that the public project managers empower others more to create ideas and make decisions and also have more influence on their project team.

Total score	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
Public real estate	2,30	2,47	2,49	2,06	2,34	2,27	2,48
Commercial real estate	2,30	2,56	2,48	1,85	2,26	2,22	2,27
Sig. unequal means	0,996	0,328	0,965	0,174	0,611	0,667	0,023

Table 25: Total score of different real estate types

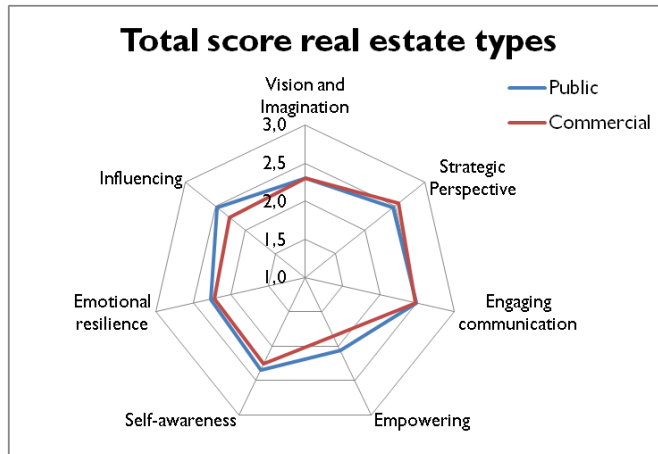


Figure 57: Total score of project managers working different real estate types

For the project-based questions the participants were asked to state which type of real estate that specific project was. Table 26 and Figure 58 show the comparison of the project-based score of the project managers working with public or commercial real estate. There are only minor differences between the scores, which can also be seen in the significance of unequal means in Table 26. There are no significant differences visible for the project-based score between the two real estate types.

Project-based score	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
Public real estate	2,19	2,45	2,37	2,08	2,30	2,18	2,57
Commercial real estate	2,09	2,58	2,36	1,93	2,21	2,18	2,42
Sig. unequal means	0,163	0,326	0,770	0,780	0,229	0,266	0,212

Table 26: Project-based score of real estate types

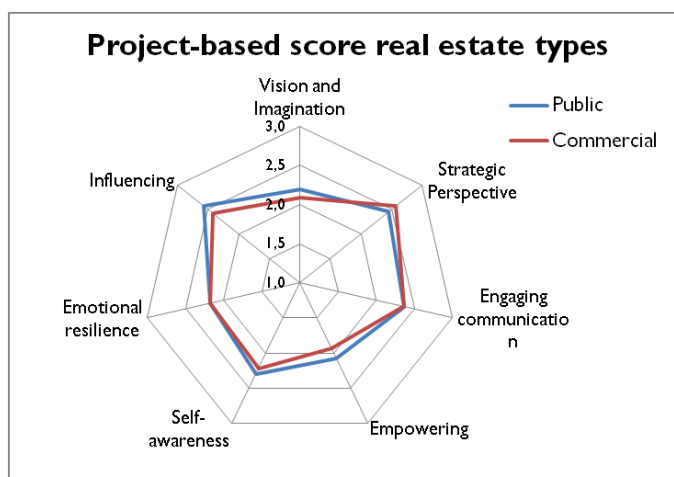


Figure 58: Project-based score of project managers working on different real estate types

The total score of the age groups is shown in Figure 59. There is a clear correlation visible between the scores on all competencies and the age of the project managers. Besides two outliers for the 36-45 yrs group on self-awareness and empowering, it is clear that the project managers with a higher age score higher on each competency. This conclusion is in line with the statement that has already been made in the 1940s, following the behavioral school of leadership, that leaders have certain behaviors that can be developed over time (Müller & Turner, 2007).

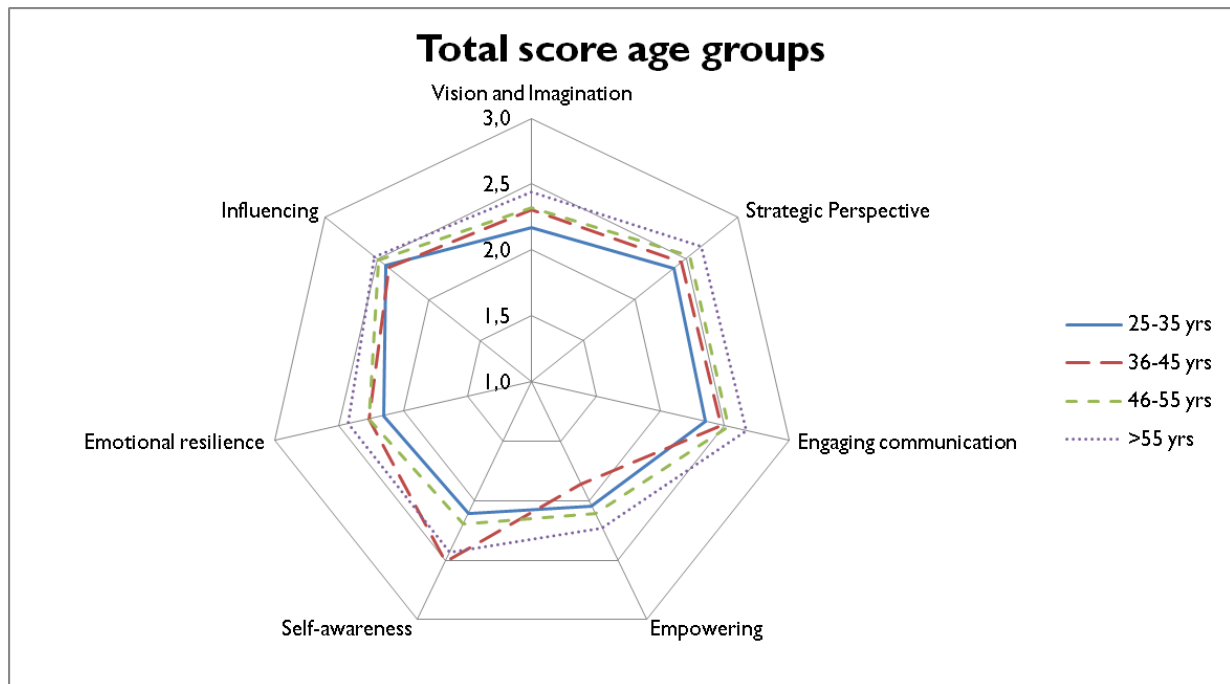


Figure 59: Total score of age groups

There is a strong correlation between the age of the participants and their work experience, which could be expected beforehand. Therefore there are a lot of similarities visible between Figure 60 and Figure 59. The longer the work experience, the higher the scores on all competencies, with the same outliers on self-awareness and empowering.

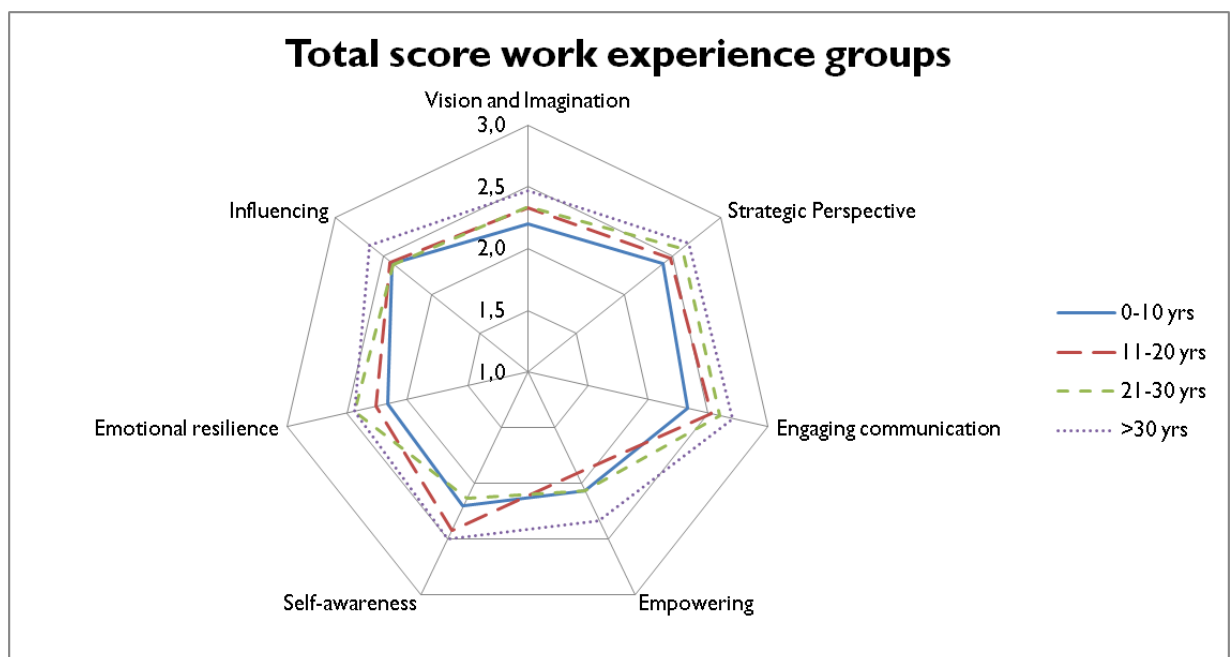


Figure 60: Total score of work experience groups

This brings us to the essential part of this research, which is to check whether the competencies and thereby the leadership styles of the project managers differ when they work with different contract types. The first comparison is made based on the most used contract type by the project managers and the total score on the competencies. The most used contract type is determined by the percentages given by the project managers in the beginning of the questionnaire. Based on these percentages three categories of contract type used were made:

1. Traditional (% traditional > % integrated)
2. Integrated (% traditional < % integrated)
3. Combined (equal % traditional and integrated)

In the comparison of the contract type the combined group is not taken into account. Table 27 and Figure 61 show the differences in the scores for the contract types. Three competencies have practically the same score on both contract type groups: vision and imagination, engaging communication and influencing. The traditional contract type scores lower on strategic perspective and self-awareness, while it scores higher on empowering and emotional resilience. This is a very interesting outcome, since it is completely spread through the three competency classifications (intellectual, managerial and emotional). However, all these differences are not statistically significant and the differences are most plausible for empowering, emotional resilience and strategic perspective.

An explanation for this can be found in the factors that have influence on the allocation of project managers on the projects, which can be found in Figure 49 in the previous chapter. The participants clearly indicated that the availability and the experience are factors that are taken into account for the allocation. However, the leadership style is the least mentioned factor that is used for the allocation of project managers to projects. This indicated that also the competency profile of the project managers is not taken into account. This would explain the outcome that there is no clear difference in the competency classifications between the different contract types.

Total score	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
Traditional contract	2,31	2,46	2,50	2,09	2,32	2,34	2,46
Integrated contract	2,32	2,55	2,48	1,93	2,40	2,22	2,44
Sig. unequal means	0,892	0,334	0,861	0,234	0,550	0,282	0,883

Table 27: Total score contract types

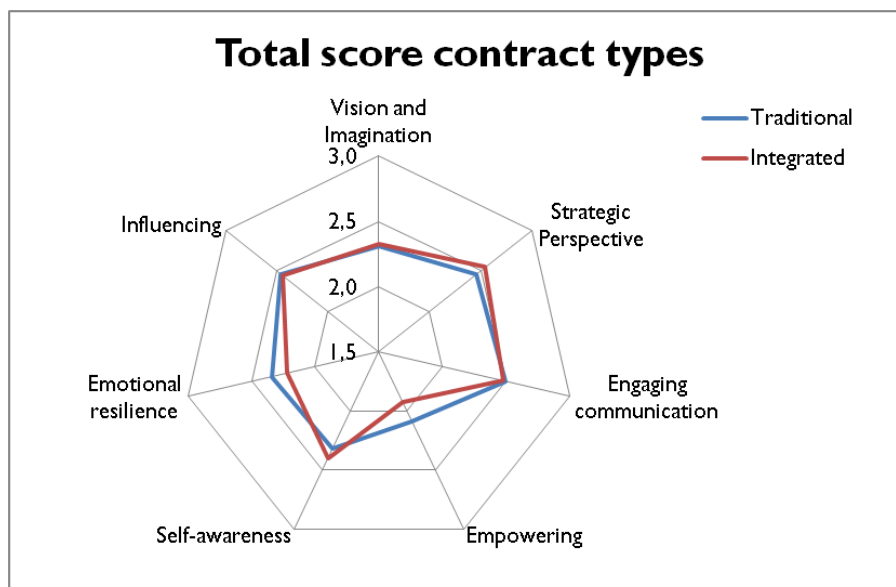


Figure 61: Total score contract types

In Table 28 and Figure 62 the general score of the competencies is compared for the most used contract type of the project managers. In this comparison there is even less difference visible for most competencies between the contract types. It is however visible that there is a clear distinction in the self-awareness score, for which the integrated contracts score significantly higher than the traditional contracts.

General score	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
Traditional contract	2,37	2,52	2,54	2,02	2,39	2,34	2,28
Integrated contract	2,38	2,51	2,61	1,92	2,68	2,25	2,32
Sig. unequal means	0,909	0,912	0,545	0,557	0,032	0,414	0,838

Table 28: General score contract types

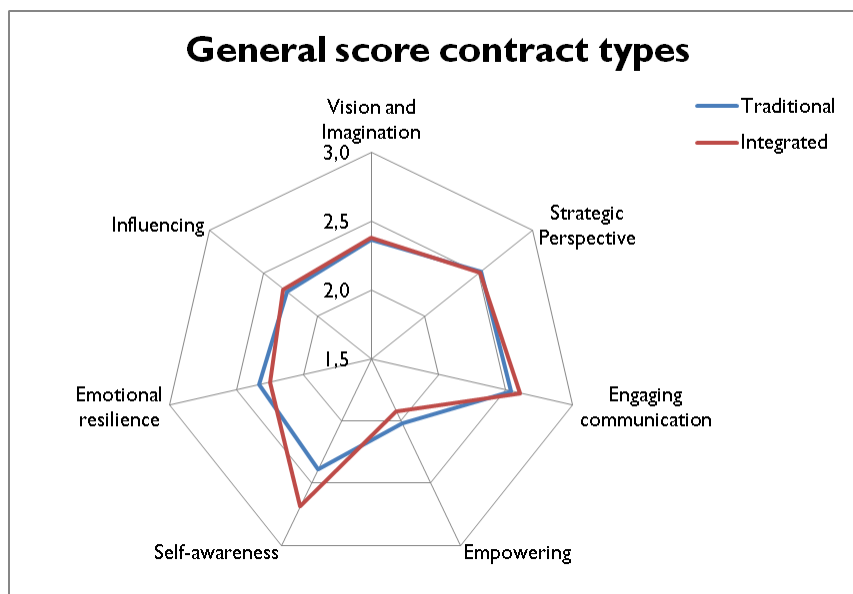


Figure 62: General score contract types

The last comparison regarding the contract types is based on the project-based scores of the project managers, which are compared for the contract types used in those specific projects. Table 29 and Figure 63 show this comparison. Regarding the managerial competencies (engaging communication and empowering) it is clear that both contract types score practically equally. The intellectual competencies show a difference in the score, since the traditional contract scores higher on strategic perspective, but lower on vision and imagination. This given an inconclusive result for the intellectual competencies. The emotional competencies show on the other hand clearly a higher score for the integrated projects. Apparently the project managers working in integrated project used more of their emotional competencies than project managers working with traditional contracts. This entails for example that they were more aware of their own emotions and had a larger influence on the project team.

It is interesting to see the difference between the general score and the project-based score. Apparently the project managers do not have specific competencies which are matched to the contract type they mostly use, but the competencies that are actually used during the project are dependent on the contract type that is used at that moment. This is in line with the research of Müller and Turner (2010) which shows the influence of external factors on the leadership style of the project managers.

Project-based score	Vision and imagination	Strategic perspective	Engaging communication	Empowering	Self-awareness	Emotional resilience	Influencing
Traditional contract	2,05	2,54	2,39	2,07	2,18	2,05	2,46
Integrated contract	2,24	2,44	2,35	2,03	2,34	2,26	2,59
Sig. unequal means	0,163	0,326	0,770	0,780	0,229	0,266	0,212

Table 29: Project-based score contract types

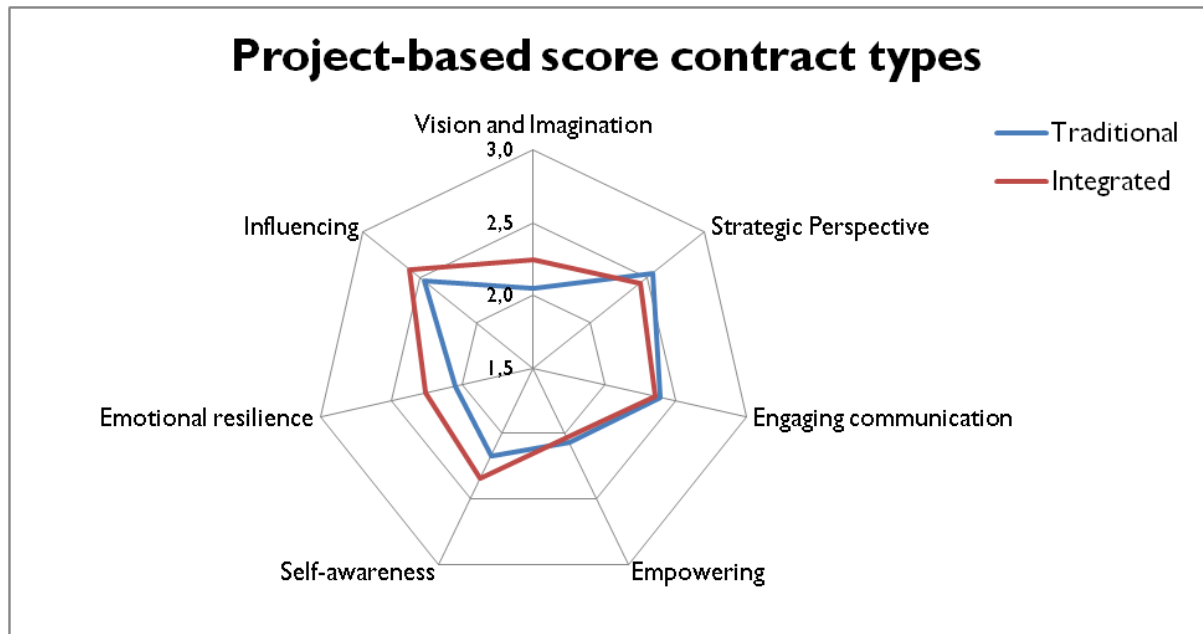


Figure 63: Project-based scores contract types

Two other external factors showed differences in the scores as well: gender and age. Table 30 shows that these differences did not influence the score based on the contract-type, since there is an even spread of the gender and age over the contract-types.

		Most used contract type			Contract type of project	
		Traditional	Integrated	Equally divided	Traditional	Integrated
Gender	Male	22	15	8	17	25
	Female	3	4	2	2	6
Age	25-35 yrs	7	6	2	6	6
	36-45 yrs	10	6	3	6	12
	46-55 yrs	4	4	4	3	9
	>55 yrs	4	3	1	4	4

Table 30: Comparison between contract type and other external factors

12. CONCLUSIONS

An important note to the conclusions is the statistical significance of the outcomes of the questionnaire, since there are almost no statistical significant differences visible in the research. The differences are considered to be significant if the significance level is lower than 0.05.

The overall high score of the project managers on all competencies is very high, which was also visible in the research of (Dulewicz & Higgs, 2005). Figure 34 on page 41 shows the typical score on competencies of the leadership styles and shows that for practically all competencies each leadership style scores medium or high. These researchers apparently also experienced the high scoring of the managers on all competencies. In their research, Dulewicz and Higgs (2005), also do not mention the statistical significance of these scores of the leadership styles.

There are multiple reasons why there are still conclusions drawn from the results. First of all other factors that might result in a difference in the outcome are ruled out. The self-assessment is checked and found to be reliable, so this cannot be the reason for the visible differences. The questionnaire has been extensively tested, to make sure there are no unclear questions. Therefore unclearness in the questionnaire cannot be a reason to result in differences in the outcomes. Lastly, other external factors that can influence the leadership style are measures in the research and are evenly spread between the contract types, which can be seen in Table 30. Therefore the other external factors cannot have influenced the outcomes of the comparison regarding the contract type. The visible differences in the scores of the contract types can therefore be validated.

This brings us to the conclusions of the research. First, some extra conclusions will be discussed, which were not in the scope of the research, but still turned out to be interesting.

This research tested the usability of self-assessment, which resulted in a match of 75% of the answers between the self-assessment and the external review. Therefore it is concluded that self-assessment is a useful tool for research, but it is better to use an extra way of assessment to improve validity in further research. This is actually in line with the research of Chen et al. (2014), that states: "Self-assessment, though it has its limitations, may be used as part of a multi-source evaluation scheme." The self-assessment in this research is therefore accepted as a valid method for measuring the competencies of the project managers.

Besides the overall question of the research regarding the difference between contract types, there are some more conclusions that can be drawn from the gathered information. First of all the average total score of the project managers on empowering is relatively low. Based on the description of empowering by Dulewicz and Higgs (2005) we can state that the project managers in general have more trouble with giving their staff autonomy and encouraging them in solving problems and producing innovative ideas and proposals. They also score lower in encouraging their staff to have a critical faculty and taking on personally challenging tasks.

Secondly a conclusion can be made regarding the difference in self-assessment of men and women. In this research the men and women had the same average score, which shows that neither one of them tends to score themselves higher. This refutes the statement of Chen et al. (2014) that men score themselves relatively higher than women. It should be said that especially the sample of women is small in this research, but that is in line with the population from which the sample is taken. When the competencies of men and women are compared the only noticeable difference is in the self-awareness score, which is higher for women, with a significance level of 0,109. This means that women are more aware of their emotions and the impact of them in the work environment.

Another conclusion is that the score on all competencies gradually increases when the participants get older. Since there is no correlation between the age and the used contract type, this did not influence the end results of this research. It does show a confirmation of what is stated in the schools of leadership from the 1940s, which was the behavioural school and later schools that built further on that theory. The development of all competencies over time is also visible in the scores in the various work experience groups: the more work experience, the higher the score on all competencies.

This brings us to the main question of this research: Which leadership style is applied by project managers in situations with different contract types? In order to give answer to this main question, we will look at the stated hypotheses and sub-questions. All hypotheses, except hypothesis 7, cannot be accepted or rejected, since there is no statistical significance. The conclusions that are drawn are based on differences shown in the results, which still are highly probable.

Hypotheses	
1	For project managers working on projects with the traditional contract type, the goal-oriented leadership style is more common.
2	For project managers working on projects with an integrated contract type, the engaging leadership style is more common.
3	Project managers working with traditional contracts will score higher on the dimension 'vision and imagination' than project managers working with integrated contracts.
4	Project managers working with traditional contracts will score higher on the dimension 'strategic perspective' than project managers working with integrated contracts.
5	Project managers working with traditional contracts will score lower on the dimension 'engaging communication' than project managers working with integrated contracts.
6	Project managers working with traditional contracts will score lower on the dimension 'empowering' than project managers working with integrated contracts.
7	Project managers working with traditional contracts will score lower on the dimension 'self-awareness' than project managers working with integrated contracts.
8	Project managers working with traditional contracts will score lower on the dimension 'emotional resilience' than project managers working with integrated contracts.
9	Project managers working with traditional contracts will score lower on the dimension 'influencing' than project managers working with integrated contracts.

Table 31: Overview hypotheses

For each competence a specific hypothesis is stated, of which the first is H3 regarding the vision and imagination. The outcomes of the research are contradictory the hypothesis that project managers working with traditional contracts will score higher on the dimension 'vision and imagination' than project managers working with integrated contracts. The project-based score on vision and imagination shows that the project managers working on integrated project score higher on this competence. This outcome is also confirmed by the participants of which multiple stated that a vision from the project manager is more important in integrated projects than in traditional contracts. Therefore it can be assumed that the opposite of this hypothesis is true: project managers working with traditional contract score lower on the dimension 'vision and imagination' than project managers working with integrated contracts.

Hypothesis 4, which states that project managers working with traditional contracts will score higher on the dimension 'strategic perspective' than project managers working with integrated contracts is in line with the outcomes of this research. There is a small difference visible on the competency strategic perspective between the two contract types, for which the traditional contract scores slightly higher. Project managers working on traditional project have a higher score on strategic perspective as project managers working on integrated projects.

Hypotheses 5 and 6 are not in line with the outcomes of this research. There is no difference visible in the score on engaging communication and empowering between the contract types. In this case the project managers working on traditional projects do not have a lower score on engaging communication and empowering than project managers working on integrated project, but they also do not have a higher score. This is contradictory to the expectations of the participants, since multiple expected empowering to score higher on integrated projects.

Hypothesis 7, which states that project managers working with traditional contracts will score lower on the dimension 'self-awareness' than project managers working with integrated contracts, is in accordance with the

outcomes of the research. This is not only visible in the project-based score, but also in the general score. The difference in the general score is statistically significant, which means that this hypothesis can be accepted: Project managers working with traditional contracts will score **lower** on the dimension 'self-awareness' than project managers working with integrated contracts.

Hypotheses 8 and 9 are in line with the results of the research, since the project-based score in this research shows a higher score on emotional resilience and influencing for project managers working on integrated projects than project managers working on traditional projects. This entails that all emotional competencies show a higher score for integrated contracts than for traditional contracts.

In order to state anything about hypotheses 1 and 2, the leadership style has to be defined that fits the score on the competencies for both contract types. This gives a mixed image, since some of the competencies have the same score. Vision and imagination and strategic perspective would score higher when someone has an goal-oriented or involving leadership style (Figure 34), while the emotional competencies would score higher on an engaging leadership style. This means that the competency profile does not give an 100% score on one specific leadership style. Therefore the leadership style with the most similarities with the competency profile is identified, which for the traditional contracts is the goal-oriented leadership style and for the integrated contracts the engaging leadership style. This is in line with the hypotheses 1 and 2, but the hypotheses cannot be accepted since there is no statistical significance.

Based on these conclusion you would assume that these competency profiles will also be visible for project managers that mostly work in traditional or integrated projects. The general score does on the other hand show that there are little differences between the two contract types. This entails that there is no link between the competency profile, and therefore the leadership style, of the project managers and the contract type they work mostly with. This can have two reasons: either there is no difference in leadership style necessary for the different contracts or the leadership style is not taken into account when people are assigned to specific projects. The latter is confirmed by the participants of this research, since only 17 of 54 participants indicated that the leadership style is taken into account at their office in applying the project managers to certain projects. Therefore it can be said that at this moment, there is no difference in the general leadership style of project managers when the contract type they work most with differs. This means that no answer can be given to the sub-questions that were stated earlier in this research.

The fact that the project-based score shows a large difference with the general score confirms the statement of that leadership is situational: the use of certain leadership characteristics is dependent on the situation (Müller & Turner, 2007). Where there is no difference visible in the competencies in general, there are differences in the use of competencies visible when the situation changes.

In order to answer the main research question: *Which leadership style is applied by project managers in situations with different contract types?*

- There is a bias toward the goal-oriented leadership style when traditional contracts are used.
- There is a bias toward the engaging leadership style when integrated contracts are used.

The conclusions that are drawn in this chapter can scientifically only be described as great possibilities, because of the lack of significance in the results. While the small difference in the outcomes of the contract types does state something, it mostly is in line with the theory of Keegan and Den Hartog (2004), who state that there is little to no difference in the leadership style of project managers. The different contract types cannot get the label of different leadership style connected to it. It also means that the outcomes are contradictory to the statements of Müller and Turner (2007) and Dulewicz and Higgs (2005), who do expect to see significant differences between the project managers. This is especially interesting since the two latter reports have used the LDQ as a research method, which has been the base for this research. With the same base this research shows different outcomes, which will be discussed in the following chapter.

13. DISCUSSION

As stated earlier the most important point of discussion is the significance of the results, since the visible difference are mostly not significant. This can have multiple reasons.

First of all it is possible that my assumptions have been wrong and that there is no difference in leadership style between the contract types. However, the project managers in practice expect the difference as well, so there might be other issues in the research that resulted in the insignificance. A sample of 54 project managers is used, which is acceptable but not extensive, and when a larger sample would be used, the scores would probably be even more similar. Also the fact that all project managers scored high on each competency could have effect on the significance, so more option on the positive side on the spectrum might show larger differences. However, it is still very well possible that the differences are indeed very small, as is stated by Keegan and Den Hartog (2004).

A second reason of the insignificance can be that the difference is not visible in practice. This is very plausible since the project managers indicated that the leadership style is little taken into account when the project managers are appointed to a certain project. This results in the fact that no specific leadership style can be connected to a contract type.

The third reason for the insignificance can be that the base which was used for the research is not correct. When taking a closer look to the research of Dulewicz and Higgs (2005), it shows that they did not see large difference between the leadership styles regarding the competencies. They only used the descriptions 'high', 'medium' and 'low', but did not mention how these categorizations were made. Besides that they did not mention the significance level of these results. The same counts for the research of Müller and Turner (2006), who measure the competency scores with the levels of '25', '50' and '75'. However, the exact difference between these values is not described and they neither mention the significance level of these results. All in all it can be seen that those other researchers probably also did not find large differences between the competency scores. However, the description of the different leadership styles is pretty clear and distinctive. This raises the question whether measuring these competencies is a good way to measure leadership styles, since larger differences between the styles would be expected. This is also confirmed by the fact that Dulewicz and Higgs (2005) and Müller and Turner (2006) got different results while using the same questionnaire.

Another point for discussion besides the significance is that fact that only the applied competencies are measured and the effect is not incorporated in this research. The results show which leadership styles are used in practice, but whether these styles result in project success is not taken into account. The fact that 65% of the participants has more than 10 years experience as a project manager, makes the sample a very experienced group. With this experience it can be expected that the project managers have noticed which style works in practice. These project managers most likely use a style that has a positive effect on the outcomes of the project. So while there is no direct link with the project result, it can still be stated that these used leadership style are also suitable to the situation.

While the measured differences between the competencies might be questioned, there is still a strong possibility that these competencies do indeed show small differences dependent on the external factors. For the differences that are found, a reasoning seen from practice has been made. The last part of this chapter describes how the measured difference can be explained.

First of all the overall total score of the project managers shows a lower score for empowering. This might be due to the fact that people who favour to make decisions themselves chose to be in positions where they can do so. A project manager often is in the position to make decisions and probably only people that enjoy making decision will decide to work in that position. Empowering is all about giving others authority to make decision, which is not in line with the desire to make the decisions themselves.

Secondly, the real estate types have been compared. People that work mostly on public real estate project score higher on empowering and influencing. A reason for this can be that public real estate is often financed by another party than the ones participating in the project team. Empowering might be more necessary in the case of public real estate, since this automatically happens for commercial real estate. In that case the financier is part of the project team and probably does not need to be empowered. This might also be the reason that a project manager working on a commercial project experiences to have less influence on the project team.

The age and work experience groups mostly show a trend, which entails that a higher age and more experience results in a higher score on the competencies. In general this makes sense, since people always learn on the job and a lot of the competencies can be developed over time. There are however some outliers in the results: for self-awareness a younger groups has a high peak that is even higher than the oldest group and for empowering the two middle groups have a relatively low score.

For empowering it would make sense that older people have more trouble with giving autonomy to others than younger people. This can be seen in the work experience groups, where the lowest group scores higher than the two middle groups. However, the oldest group is not in line with this trend. So while the empowering outlier could be explained this way, it is not visible through all groups. When each group is compared, another possible reason for this outlier can be found. The youngest group might have the least confidence to take decisions themselves and therefore uses empowering to give others autonomy to make decisions. The two middle-aged groups are ambitious and probably are busy in building their career and getting promoted. They have the drive to show how well they can make decisions and therefore might have more trouble in authorizing others. The oldest group might be less needy to show their own qualities and might easier give autonomy to others. This would explain the shift in score on the empowering competency.

The differences that can be seen in the project-based score of the contract types can also be explained. Since there are more uncertainties in the design when the project is tendered, the project manager has to use other ways of influencing the design of the project. In the traditional contract type, the project managers can always use the technical drawings and demand that level from the contractor. When the contracting company is also making the design, other ways have to be found to have influence if a specific design decision is demanded by the client. Social skills are more important in that case, since there are no hard contractual boundaries that the project manager can use. This also explains the higher score on vision and imagination, since the project manager should think further ahead before contracting the contractor.

14. THEORETICAL AND PRACTICAL IMPLICATIONS

This chapter describes the implications of this research in theory and in practice.

The research also contributes to the research into the value of self-assessment. The results are contradictory with the research of Symons et al. (2009), who state that in general men rates themselves higher than women. In this research the average men and women scores are equal, which suggests a different conclusion. The reliability of self-assessment is also checked in this research, which is confirmed. Self-assessment is a reliable method for measuring competencies, but a combination with external review is advised. This is in line with another conclusion of Symons et al. (2009), who state that self-assessment can be used as a part of a multi-source evaluation.

Another implication contains the overall score of the project managers on all competencies, which is very high. This is in line with Dulewicz and Higgs (2005) who also found high scores in general for all competencies on each leadership style. This is complementary to the research of Keegan and Den Hartog (2004) who found that the leadership style of project managers is less influential than the leadership style of line managers. This statement could be an explanation for the rather small differences in competencies and thereby leadership style of project managers.

The biggest contribution of this research is the fact that situational leadership is confirmed. This is in line with the research of House (1971), who states that the leadership style is dependent on the circumstances. Later research of Müller and Turner (2007; 2010) is in line with this conclusion, who mostly make a distinction in the complexity of the project and the efficient leadership styles.

The result of this research regarding the competency 'vision and imagination' is contradictory to the research of (Dulewicz & Higgs, 2005). From their research was concluded that vision and imagination scores lower on the engaging leadership style than the goal-oriented leadership style. In this research a different combination of competency scores is visible. Where the group that mostly applies the engaging leadership style also scores higher on vision and imagination. The participating project managers confirms this statement based on their experience in practice.

Another theoretical implication is the fact that it is shown to be questionable whether the measurement of competencies is a good way to measure leadership styles. While it is clearly not stated by (Dulewicz & Higgs, 2005), the very distinctive descriptions of the leadership styles are not that distinctive in competency profiles. For theory it would be good to look at other methods to measure leadership style.

For practice other implications can be advised. First of all regarding the application of project managers on specific projects. This research shows that availability is the most mentioned reason to allocate project managers to projects. While this reasoning makes sense, there are other important aspects that should be taken into account. While the difference are not large, this research still shows the use of certain competencies on specific contract types. For a project managers it is always easier to implement competencies that he or she scores high at and therefore this can definitely be used in the application of project managers.

The advise would therefore be to start with mapping the competency scores of the project managers. While line managers might have an overall view of the competency profiles of their project managers, it would always be better to actually test these profiles. Than the outcomes can be used in the appointment of project managers to project, not only regarding the contract type, but also the real estate type. For example empowering and influence score high on public real estate types. A project managers that scores high on these competencies is probably more suitable to work with public real estate.

When looking at the age of project managers, it is clear that the older project managers score higher on all competencies. While it is not advised to only appoint older project managers, it might be very useful to mix the older and younger project managers. This can be seen in practice already, which is mostly based on experience. However, this research shows that this reasoning can also be based on the competency profiles.

15. FURTHER RESEARCH

This chapter gives suggestions for further research based on the results of this research.

The first suggestion is to aim for a bigger sample and perform the same research. The sample of 54 project managers had a large influence on the significance of the outcomes. Extending the research would give a better view on reality and would make the conclusions more solid. In order to obtain more participants, time is the biggest issue.

The second suggestion also requires a larger sample size, because then a difference can also be made in the various integrated contract types. In this research all contract types from DB till DBFMO have been called integrated, because of the limited amount of data. When the dataset is extended, a competency profile can be made for each integrated contract type individually.

There can be aimed for more external reviews in another research. Till now the external review is used as a proof that self-assessment does actually give a reliable view on reality. To make the research stronger it would still be better to use a combination of self-assessment and external assessment for the project managers. When more time is available, these external reviews can be obtained.

The fourth suggestion is to perform the research again in five to ten years. The integrated contract type is relatively new in the real estate sector. The fact that it is new and a lot of people and companies have not worked with it yet can also influence the leadership style of the project manager. At this moment it makes sense that the emotional competencies are essential, since the whole project team has to work together with a contract type they are not used to.

Another suggestion is to include the project success in the research. Till now it is accepted that the experienced project managers probably use leadership style that are effective. However, to answer the question which leadership style is suitable for which contract type, the project success needs to be measured as well. This would lead to a very extensive research, for which methods have to be developed to measure the success of a project.

Besides the leadership style of project managers, also the personality might show interesting differences between various contract types. Since competency descriptions show a lot of similarities with personality descriptions, it will be interesting to make a comparison of the outcomes.

The last and probably most important suggestion is to check whether other ways of measuring leadership style show more differences. The method that has been used in this research might not be the best to distinguish the different styles, which is seen in earlier researches as well. Competencies might not be the best indication of someone's leadership style.

16. REFLECTION ON PROCES

This research has been my graduation project for the master Management in the Built Environment. It was the first time in my bachelor and master that I had to do such a big research all by myself. Which logically resulted in a more bumpy process rather than a smooth one.

One starting point was clear: I wanted to do something with leadership styles. But what would be a good research question? The demarcation of my research topic took quite some time. Firstly the contract types were included, which was an interesting addition because of the importance of that topic in this moment of time. However, still a too broad question lay on the table. Other questions arose: which project manager are we talking about? The one on the client side or the one on the contractor side? Which phases in the project are we talking about? My mind went through all options and back, discussed everything with my three different mentors and still could not figure out what I should do. Then the reasoning switched towards what I wanted to do, rather than what I thought I should do. This was a big leap forward in the process of developing my research question. If I would do it again this is what I would definitely keep in mind; you can only do a project for a whole year (or longer) if the theme really has your interest.

Deciding on the research method was another process, that partly took place besides the development of the research question. In first instance I planned on doing qualitative research, where I would look at a couple of projects with different contract types. However, it soon turned out that conclusions could better be drawn if quantitative research was done. This resulted in the search for a good questionnaire, which turned out to be harder than expected. The development of my own questionnaire is something that I did not think lightly about, but it was even more difficult than I anticipated on. Especially underpinning the choices I had to make in this process was harder than expected. And if I look back now, it is really a tricky part in my graduation. Even though I spend a lot of time in developing the questionnaire, the validity can still be questioned. Usually a questionnaire has to go through testing, which would take too long for the time frame of my graduation. However, I have learned a lot by going through this whole development process.

If I look back at this process I think I would spread my chances more and also prepare a qualitative part in my research. Maybe the question could also be answered if I interviewed professionals in the field that see the differences of leadership style in practice. This is also based on the answers given to the open question in my questionnaire, since apparently people have strong opinion about my research question. Interviews or focus groups would give insight in the opinion of the project managers that work in practice.

During the development of the questionnaire, I have also made the hypotheses. In the end these hypotheses might have been too difficult to accept or reject. They did give me insight in my own expectation of my research, but whether it was a good scientific step is questionable.

The gathering of responses, took more time and effort than I would expect. Through BOSS I had multiple contacts at various project management companies, but it still turned out to be difficult to obtain a large sample. This largely influenced my analysis, not only because I could start later than hoped, but also because of the lack of significance in the differences of the answers. It is a good lesson on how long it can take to get answers to such questions. In the future I would probably try different methods to gain the responses, for which face-to-face contact seems the best way in convincing people to participate.

At the start of this research I was of course hoping for clear differences between the contract types that were also significant, which probably was a very optimistic expectation. In the end it is unfortunate that the results do not show to be significant. However, I still think that the differences that are visible in the results do give an indication of applied leadership style on the contract types. Doing the research in this manner taught me a lot about statistics and quantitative research.

In the last phase of my graduation, where I looked back at all the work that I did, it was time to be more critical. Maybe even the base that I used for my research was not as good as I assumed. When looking back at the LDQ and the conclusions that were drawn by Dulewicz and Higgs, it turned out that they also did not find

large differences between the leadership styles. It would not make sense if the leadership styles indeed did not differ so much, since the descriptions are clearly distinctive. Therefore I think the use of competencies is, as I suggested in the discussion, not the best way to measure leadership style. If I would do the research again, I would try to find other ways of measuring leadership styles.

This also shows the lesson to be more critical to the literature that I read in general. At the beginning of the research I assumed the correctness of the LDQ method, since it was used by a lot of researchers. I did not give enough attention to the significance of the outcomes they presented. This is something that I would do differently in another research.

In general I can say that scientific research is not my favourite thing to do, but I did enjoy myself this year. Reaching goals within the research and finding positive outcomes of investigations that seemed to not yield anything were motivations for me this year. I learned a lot from writing the master thesis and I really liked the fact that it was very much related to practice. In my graduation company I now recognize certain behaviours from colleagues, which I can related to the seven competencies I investigated. I hope the end result is useful for theory and practice and that fellow students might find it interesting enough to continue with my research.

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APPENDIX I: DEFINITIONS

In this research the following concepts are essential and although their meaning might seem clear, it is important to know the exact definition that is used in this report.

Project manager:

The project manager is seen as a person who guides a building project, with steering a group of people as an essential part of his/her job. There are multiple job description that can match this definition, such as project leader (Dutch: 'projectleider'), consultant, advisor, etc.

Traditional contract type:

A traditional contract type entails the separation of contracts between the design en build of the project. The essential part is that the architect and contractor are appointed separately and both have an own contract with the client.

Integrated contract type:

An integrated contract type entail a combined contract for the design en build of a project. Besides those two aspects, more elements can be integrated in the contract, such as the finance, maintenance and operation of the building. Integrated contracts is used as the collective name for all contracts in which at least design and build are combined.

Public real estate:

Real estate that is completely or for a large part financed by a public party, which can be anything from the government to the municipality.

Commercial real estate:

Real estate that is (almost) completely financed by a commercial party.

APPENDIX 2: LITERATURE REVIEW

Literature overview 60 articles

Article	Measuring leadership styles	Use of a questionnaire to measure	Useable?
Matching the project manager's leadership style to project type (Müller & Turner, 2007)	X	X	X
Leadership competency profiles of successful project managers (Müller & Turner, 2010)	X	X	X
Do transformational leaders enhance their followers' daily work engagement (Tims, Bakker, & Xanthopoulou, 2011)	-	-	-
Ethical leadership at work questionnaire (ELW): Development and validation of a multidimensional measure (Kalshoven et al., 2011)	X	X	X
Transformational and charismatic leadership: Assessing the convergent, divergent and criterion validity of the MLQ and the CKS (Rowold & Heinitz, 2007)	X	X	X
An exploration of the clinical learning experience of nursing students in nine European countries (Warne et al., 2010)	-	-	-
The association among project manager's leadership style, teamwork and project success (Yang et al., 2011)	X	X	X
Burnout in the information technology sector: Does leadership matter? (Hetland, Sandal, & Johnsen, 2007)	-	X	-
Innovation, diffusion and adoption of total quality management (TQM) (Ehigie & McAndrew, 2005)	-	X	-
Leadership style, organizational politics, and employees' performance: An empirical examination of two competing models (Vigoda-Gadot, 2007)	X	X	X
Role of leadership in knowledge management: A study (Singh, 2008)	X	X	X
Developing transformational leaders: The full range leadership model in action (Kirkbride, 2006)	-	-	-
Student nurses experience of learning in the clinical environment (Papastavrou, Lambrinou, Tsangari, Saarikoski, & Leino-Kilpi, 2010)	-	-	-
The impact of transformational leadership on organizational and leadership effectiveness: The Turkish case (Erkutlu, 2008)	X	X	X
Climate strength - How leaders form consensus (Luria, 2008)	-	X	-
Examining the relationship between leadership, emotional intelligence and intuition in senior female managers (Downey et al., 2006)	X	X	X
Leadership style. The X Generation and Baby Boomers compared in different cultural	X	X	X

contexts (Yu & Miller, 2005)			
A study of the impact of three leadership styles on integrity violations committed by police officers (Huberts, Kaptein, & Lasthuizen, 2007)	-	-	-
Effects of gender, education, and age upon leaders' use of influence tactics and full range leadership behaviors (Barbuto Jr et al., 2007)	X	X	X
Performance and leadership outcome correlates of leadership styles and subordinate commitment (Limsila & Ogunlana, 2008)	X	X	X
Physician leadership styles and effectiveness: An empirical study (Xirasagar et al., 2005)	X	X	X
The impact of goal orientation on the association between leadership style and follower performance, creativity and work attitudes (Moss & Ritossa, 2007)	X	X	X
Corporate governance as a critical element for driving excellence in corporate social responsibility (Shahin & Zairi, 2007)	-	-	-
Modeling leadership- Implicit leadership theories in Sweden (Holmberg & Åkerblom, 2006)	-	-	-
An investigation of leadership styles and relationship cultures of Chinese and expatriate managers in multinational construction companies in Hong Kong (Wong, Wong, & Heng, 2007)	X	X	- (not available)
Principals' leadership and teachers' motivation: Self-determination theory analysis (Eyal & Roth, 2011)	-	-	-
Transformational leadership style, market competition and departmental performance: Evidence from luxury hotels in Australia (Patlar & Mia, 2009)	-	-	-
Knowledge sharing in Chinese construction project teams and its affecting factors: An empirical study (Ma, Qi, & Wang, 2008)	-	-	-
Student nurses' experiences of the clinical learning environment in relation to the organization of supervision: A questionnaire survey (Sundler et al., 2014)	-	-	-
The development of constructs of program context and program success: A qualitative study (Shao & Müller, 2011)	X	-	-
A validation study of the leadership styles of a holistic leadership theoretical framework (Brauckmann & Pashiardis, 2011)	-	-	-
Comparing the leadership styles of functional and project managers (R. Turner et al., 2009)	X	X	X
Leadership and cultures of Lithuanian and Dutch construction firms (Ozorovskaja, Voordijk, & Wilderom, 2007)	X	-	-

Empowering leadership, perceived organizational support, trust, and job burnout for nurses: A study in an Italian general hospital (Bobbio, Bellan, & Manganeli, 2012)	-	X	-
Organizational learning and transformational leadership in the library environment (Castiglione, 2006)	X	X	X
Work-family conflict and job satisfaction in stressful working environments: The moderating roles of perceived supervisor support and internal locus of control (Hsu, 2011)	-	X	-
Culturally-linked leadership styles (Jogulu, 2010)	X	X	X
Leadership styles and burnout: Is there an association? (Zopiatis & Constanti, 2010)	X	X	X
Transformational leadership in human service organizations (Mary, 2005)	X	X	- (not available)
The interplay between leadership and organizational culture in the Turkish construction sector (Giritli, Öney-Yazici, Topçu-Oraz, & Acar, 2013)	-	X	-
The impacts of leadership on workplace conflicts (Doucet, Poitras, & Chênevert, 2009)	-	-	-
Do different marketing practices require different leadership styles? An exploratory study (Lindgreen et al., 2009)	X	X	X
Transmitting the entrepreneurial spirit to the work team in SMEs: The importance of leadership (Soriano & Martínez, 2007)	-	X	-
What trust grows through upward influence? (Tuan, 2012)	-	-	-
How failure to align organizational climate and leadership style affects performance (Haakonsson, Burton, Obel, & Lauridsen, 2008)	-	X	-
Management training of physician executives, their leadership style, and care management performance: An empirical study (Xirasagar et al., 2006)	X	X	X
Implementing quality management in the University: The role of leadership in Finnish Universities (Anyamele, 2005)	-	-	-
Predictor of business students' Attitudes toward sustainable business practices (Ng & Burke, 2010)	-	X	-
A study of the management leadership style preferred by it subordinates (Bennett, 2009)	X	X	X
Effects of team tenure and leadership in self-managing teams (Stoker, 2008)	-	X	-
Leadership styles in the Palestinian large-scale industrial enterprises (As-Sadeq & Khoury, 2006)	X	X	X
CEOs' transformational leadership and product innovation performance: The roles of corporate entrepreneurship and technology	X	X	X

orientation (Chen et al., 2014)			
Primary principals' leadership styles, school organizational health and workplace bullying (Cemaloğlu, 2011)	X	X	X
Leadership styles of nurse managers and registered sickness absence among their nursing staff (Schreuder et al., 2011)	-	X	-
Relationship among leadership style, organizational culture and employee commitment in university libraries (Rafiq Awan & Mahmood, 2010)	-	X	-
Informal workplace learning in Austrian banks: The influence of learning approach, leadership style, and organizational learning culture on managers' learning outcomes (Froehlich, Segers, & Van den Bossche, 2014)	-	X	-
The effects of computer-simulation game training on participants' opinions on leadership styles (Siewiorek, Gegenfurtner, Lainema, Saarinen, & Lehtinen, 2013)	-	X	-
Organizational socialization: The missing link between employee needs and organizational culture (Taormina, 2009)	-	X	-
The relationship between performance as a leader and emotional intelligence, intellectual and managerial competences (Hawkins & Dulewicz, 2007)	X	X	- (not available)
Special education and private schools: Principals' points of view (Taylor, 2005)	-	-	-

APPENDIX 3: ENGLISH QUESTIONS, EXTENDED VERSION

Vision and imagination:

1. How often did you use your imaginativeness during the project?
Never Sometimes Regularly Often
- 1a. Do you consider yourself to be imaginative?
Not at all Partially Yes Very
2. How often did you use innovative ideas during the project?
Never Sometimes Regularly Often
- 2a. Do you consider yourself to be innovative?
Not at all Partially Yes Very
3. The priorities that I set usually turn out to be correct
Do not agree Partially agree Mostly agree Completely agree
- 3a. I set the right priorities for future work
Never Sometimes Usually Always
4. In the beginning of the project I set a clear vision
Never Sometimes Usually Always
- 4a. The project team followed my vision during the project
Do not agree Partially agree Mostly agree Completely agree

Strategic perspective

1. During the project I focus on wider issues
Never Sometimes Usually Always
- 1a. In my work I focus on wider issues
Never Sometimes Usually Always
- 1b. During the project I focus on broader implications
Never Sometimes Usually Always
2. How well do you develop new relationships?
Very badly Badly Easily Very easily
- 2a. How many new relationships did you develop during the project?
None A view Some A lot
- 2b. How likely do you think it is that members of the project team will contact you again to work together?
Very unlikely Unlikely Likely Very likely
3. Did you appropriately balance short- and long-term considerations during the project?
Never Sometimes Usually Always
4. How much influence do your actions and decisions have on the project?
No influence Little influence Regular influence A lot of influence
5. How much do you take opportunities and threats into account during the project?
Not at all A little Considerably A lot

5a. How important are opportunities and threats during the project?			
Not at all	A little	Considerably	Very important
6. How important are the stakeholders' needs during the project?			
Not at all	A little	Considerably	Very important
6a. How sensitive are you to stakeholders' needs?			
Not at all	A little	Considerably	Very important
6b. How much do you take stakeholders' needs into account			
Not at all	A little	Considerably	A lot
7. How much do you include external factors in making decisions?			
Not at all	A little	Considerably	A lot

Engaging communication

1. I am a lively and enthusiastic communicator			
Not applicable	A little applicable	Regularly applicable	Always applicable
1a. My project team considers me to be a lively and enthusiastic communicator			
Not applicable	A little applicable	Regularly applicable	Always applicable
2. I engage other in the project			
Not applicable	A little applicable	Regularly applicable	Always applicable
2a. I gain support by engaging others in the project			
Not applicable	A little applicable	Regularly applicable	Always applicable
2b. During the project I effectively gain support by engaging others			
(Almost) never	Sometimes	Usually	(Almost) always
3. I clearly communicate instructions and visions to others			
Not applicable	A little applicable	Regularly applicable	Always applicable
3a. My project team follows my instructions			
(almost) never	Sometimes	Usually	(Almost) always
3b. I effectively communicate instructions to my project team			
(Almost) never	Sometimes	Usually	(Almost) always
4. Do you adjust your communication based on the audience?			
(almost) never	Sometimes	Usually	(Almost) always
4a. How often do you take the audience interest into account in your communication?			
(Almost) never	Sometimes	Usually	(Almost) always
5. My communication style inspires others			
Not applicable	A little applicable	Regularly applicable	Always applicable
5a. My communication style is inspirational			
Not applicable	A little applicable	Regularly applicable	Always applicable
6. My communication style makes me approachable			
Not applicable	A little applicable	Regularly applicable	Always applicable
6a. With my communication I make myself approachable			

Not applicable	A little applicable	Regularly applicable	Always applicable
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6b. With my communication style I keep a distance between me and the audience

Not applicable	A little applicable	Regularly applicable	Always applicable
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Empowering

1. During the project I gave other autonomy

(almost) never	Sometimes	Usually	(almost) always
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1a. I gave autonomy to the project team

(almost) Never	Sometimes	Usually	(almost) always
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2. I encourage others to take on personally challenging tasks

Not applicable	A little applicable	Regularly applicable	Always applicable
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2a. During the project I gave the members of the project team personally challenging tasks

(almost) never	Sometimes	Usually	(almost) always
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3. I encourage others to solve problems

Not applicable	A little applicable	Regularly applicable	Always applicable
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3a. I encouraged the project team to solve problems themselves

(almost) never	Sometimes	Usually	(almost) always
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4. I encourage others to produce innovative ideas and proposals

Not applicable	A little applicable	Regularly applicable	Always applicable
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4a. During the project I encourage the project team to produce innovative ideas and proposals

(almost) never	Sometimes	Usually	(almost) always
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5. I encourage others to produce an own vision

Not applicable	A little applicable	Regularly applicable	Always applicable
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5a. During the project I encouraged the project team to create an own vision

Not applicable	A little applicable	Regularly applicable	Very applicable
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6. I encourage a critical faculty

Not applicable	A little applicable	Regularly applicable	Very applicable
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6a. I encourage a broad perspective

Not applicable	A little applicable	Regularly applicable	Very applicable
----------------	---------------------	----------------------	-----------------

6b. I encourage the project team to have a critical faculty

Not applicable	A little applicable	Regularly applicable	Very applicable
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6c. I encourage the project team to have a broad perspective

Not applicable	A little applicable	Regularly applicable	Very applicable
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7. I encourage to challenge existing practices, assumptions and policies

Not applicable	A little applicable	Regularly applicable	Very applicable
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7a. During the project I encouraged the project team to challenge existing practices, assumptions and policies.

Not applicable	A little applicable	Regularly applicable	Very applicable
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Self-awareness

1. I am aware of my own feelings			
Not applicable	A little applicable	Regularly applicable	very applicable
1a. During the project I was aware of my own feelings			
Not applicable	A little applicable	Regularly applicable	Very applicable
1b. In general I am aware of my own feelings			
Not applicable	A little applicable	Regularly applicable	Very applicable
2. I am capable to recognise my own feelings			
Not applicable	A little applicable	Regularly applicable	Very applicable
2a. I am capable of managing my own feelings			
Not applicable	A little applicable	Regularly applicable	Very applicable
2b. I am capable of controlling my own feelings			
Not applicable	A little applicable	Regularly applicable	Very applicable
3. I am capable of managing my own emotions			
Not applicable	A little applicable	Regularly applicable	Very applicable
3a. During the project I managed my own emotions			
Not applicable	A little applicable	Regularly applicable	Very applicable
4. I can control the impact of my emotions in the work environment			
Not applicable	A little applicable	Regularly applicable	Very applicable
4a. During the project I controlled the impact of my emotions			
Not applicable	A little applicable	Regularly applicable	Very applicable

Emotional resilience

1. I perform consistently in various situations under pressure			
Not applicable	A little applicable	Regularly applicable	Very applicable
1a. The decisions I made under pressure turned out to be correct			
(almost) never	Sometimes	Usually	(almost) always
1b. Pressure does not influence my performance			
Not applicable	A little applicable	Regularly applicable	Very applicable
2. I adopt my behaviour appropriately under pressure			
Not applicable	A little applicable	Regularly applicable	Very applicable
3. I appropriately balance the needs of the situations with the needs of the individuals involved			
Not applicable	A little applicable	Regularly applicable	Very applicable
3a. The needs for the project were balanced with the needs of the individuals involved			
Not applicable	A little applicable	Regularly applicable	Very applicable
4. When I get criticism I retain focus on the course of action			
Not applicable	A little applicable	Regularly applicable	Very applicable
4a. When a situation gets personally challenging, I retain focus on the course of action.			
Not applicable	A little applicable	Regularly applicable	Very applicable

Influence

1. I can persuade others to change their views based on an understanding of their position			
Not applicable	A little applicable	Regularly applicable	Very applicable
2. I can persuade others to change their views since I listen to their perspectives			
Not applicable	A little applicable	Regularly applicable	Very applicable
3. I provide rational for change			
Not applicable	A little applicable	Regularly applicable	Very applicable

APPENDIX 4: SELECTED ENGLISH QUESTIONS

General quotes

A clear vision is essential for the success of a project **(vision and imagination)**

Do not agree Partially agree Mostly agree Completely agree

It is very important to keep external factors into account during a project **(strategic perspective)**

Do not agree Partially agree Mostly agree Completely agree

Communication between project team members is essential for the success of a project **(engaging communication)**

Do not agree Partially agree Mostly agree Completely agree

All project team members should have autonomy during a project. **(Empowering)**

Do not agree Partially agree Mostly agree Completely agree

General PM

Usually I set the right priorities for future work **(vision and imagination)**

Do not agree Partially agree Mostly agree Completely agree

During a project it I keep the further consequences for my company in mind **(strategic perspective)**

Do not agree Partially agree Mostly agree Completely agree

I clearly communicate instructions to project team members **(Engaging communication)**

Do not agree Partially agree Mostly agree Completely agree

My communication style is inspirational **(Engaging communication)**

Do not agree Partially agree Mostly agree Completely agree

My communication style makes me approachable **(Engaging communication)**

Do not agree Partially agree Mostly agree Completely agree

I usually encourage others to produce innovative proposals **(empowering)**

Do not agree Partially agree Mostly agree Completely agree

In general I am aware of my own feelings **(Self-awareness)**

Do not agree Partially agree Mostly agree Completely agree

I am capable of managing my own emotions **(Self-awareness)**

Do not agree Partially agree Mostly agree Completely agree

I perform consistently in various situations under pressure **(emotional resilience)**

Do not agree Partially agree Mostly agree Completely agree

I handle personally challenging situations well **(emotional resilience)**

Do not agree Partially agree Mostly agree Completely agree

I provide rational for change **(Influence)**

Do not agree Partially agree Mostly agree Completely agree

I can persuade others to change their views **(Influence)**

Do not agree Partially agree Mostly agree Completely agree

Do you set a clear vision of the beginning of a project? **(vision and imagination)**

(Almost) Never Sometimes Regularly (Almost) Always

Do you develop innovative ideas during your work? **(vision and imagination)**

(Almost) Never Sometimes Regularly (Almost) Always

Do you usually balance short- and long-term considerations appropriately? **(strategic perspective)**

(Almost) Never Sometimes Regularly (Almost) Always

Does pressure influence your performance? **(emotional resilience)**

(Almost) Never Sometimes Regularly (Almost) Always

Do you retain focus on the course of action when you get criticized? **(Emotional resilience)**

Not at all Partially Considerably Completely

Project

The priorities I set during the project turned out to be correct **(vision and imagination)**

Do not agree Partially agree Mostly agree Completely agree

I have considered opportunities to be very important during the project **(strategic perspective)**

Do not agree Partially agree Mostly agree Completely agree

I have considered threats to be very important during the project **(strategic perspective)**

Do not agree Partially agree Mostly agree Completely agree

Members of the project team will probably contact me again to work on another project **(strategic perspective)**

Do not agree Partially agree Mostly agree Completely agree

The project team considers me to be a lively and enthusiastic communicator **(engaging communication)**

Do not agree Partially agree Mostly agree Completely agree

I encourages the project team to create an own vision **(empowering)**

Do not agree Partially agree Mostly agree Completely agree

During the project I encouraged the project team to have a critical faculty **(Empowering)**

Do not agree Partially agree Mostly agree Completely agree

During the project I was aware of the impact of my own feelings **(Self-awareness)**

Do not agree Partially agree Mostly agree Completely agree

My emotions did not influence the decision I took during the project **(Self-awareness)**

Do not agree Partially agree Mostly agree Completely agree

The project team trusted my decisions **(Influence)**

Do not agree Partially agree Mostly agree Completely agree

The project team followed my course of action **(Influence)**

Do not agree Partially agree Mostly agree Completely agree

Did the project team follow your vision during the project? **(vision and imagination)**

Not at all Partially Considerably Completely

Did you clearly communicate instructions to the project team members? **(engaging communication)**

Not at all Partially Considerably Completely

Did you give autonomy to the project team members? **(Empowering)**

Not at all Partially Considerably Completely

Did you encourage project team members to take on personally challenging tasks? **(Empowering)**

Not at all Partially Considerably Completely

Did you control the impact of your own emotions during the project? **(self-awareness)**

Not at all Partially Considerably Completely

I handled situations under pressure well during the project **(Emotional resilience)**

Not at all Partially Considerably Completely

Did you appropriately balance the needs of the project with the needs of the individuals involved? **(emotional resilience)**

Not at all Partially Considerably Completely

Do you gain trust through listening to project team members' perspectives?

Not at all Partially Considerably Completely

APPENDIX 5: BACK TRANSLATION QUESTIONNAIRE

Origineel Engels	Vertaling Nederlands	Terugvertaling Engels
Communication between project team members is essential for the success of a project	Communicatie tussen leden van het project is essentieel voor het succes van een project	Communication between project member is essential for the success of the project
A clear vision is essential for the success of a project	Een duidelijke visie is essentieel voor het succes van een project	A clear vision is essential for the success of the project
It is very important to keep external factors into account during a project	Het is erg belangrijk om rekening te houden met externe factoren tijdens een project	It is of great importance to include the external factors during the project
All project team members should have autonomy during a project	Alle project team leden dienen autonomie te hebben tijdens een project	All project team members need to be autonomous during the project
I clearly communicate instructions to project team members	Ik geef de instructies aan project team leden op een duidelijke manier	The instructions I give to the team member are concise
I perform consistently in various situations under pressure	Ik presteer consequent in verschillende situaties onder druk	X
I can persuade others to change their views	Ik kan anderen ervan overtuigen hun mening te veranderen	I have the ability to convince people to change their opinions
Usually I set the right priorities for future work	Ik stel doorgaans de juiste prioriteiten voor toekomstige werkzaamheden.	On a regular basis I'm able to set the right priorities for future tasks
I usually encourage others to produce innovative proposals	Doorgaans moedig ik anderen aan om innovatieve voorstellen te doen	I regularly encourage others to make innovative proposals
I am capable of managing my own emotions	Ik ben in staat mijn eigen emoties te managen	I'm able to manage my own emotions
My communication style makes me approachable	Mijn manier van communiceren maakt mij toegankelijk	The way how I communicate makes me approachable
During a project it I keep the further consequences for my company in mind	Ik hou de toekomstige consequenties voor mijn bedrijf in gedachten tijdens een project	During the project I take the future consequences for my organization into account
I provide rational for change	Ik stimuleer anderen om na te denken mogelijke veranderingen	I stimulate others to think about possible changes
My communication style is inspirational	Mijn manier van communiceren is inspirerend	The way I communicate is inspiring
I retain focus on the course of action when I get criticized	Als ik word bekritiseerd dan hou ik mijn focus op de handelingen die moeten worden gedaan	If I am being criticized I focus on the tasks at hand
I handle personally challenging situations well	Ik ga goed om met situaties die voor mij persoonlijk uitdagend zijn	I am good at coping with situations that are personally challenging
In general I am aware of my own feelings	Over het algemeen ben ik mij bewust van mijn eigen gevoelens	Generally I'm aware of my own feelings
Do you develop innovative ideas during your work	Ontwikkel je innovatieve ideeën tijdens je werk	Do you develop innovative ideas at your job
Do you usually balance short- and long-term considerations appropriately	Hou je doorgaans de korte- en lange termijn overwegingen in evenwicht?	Generally, do you balance short- and long term decisions?
Does your performance stay the same under pressure?	Blijven je prestaties gelijk onder druk?	Are your performances changing when under pressure?
Do you set a clear vision of the beginning of a project	Geef je een duidelijke visie aan het begin van een project?	Do you present a clear vision at the start of the project
I have considered opportunities to be very important during the project	Het toespelen op kansen was erg belangrijk tijdens het project	Exploiting chances was of great importance during the project
I have considered threats to be very important during the project	Het toespelen op risico's was erg belangrijk tijdens het project	Controlling the risks was of great importance during the project.
My emotions did not influence the decision I took during the project	Mijn emoties hebben de beslissingen die ik nam tijdens het project niet beïnvloed	My decisions were not influenced by my own emotions
The project team followed my course of action	Het project team volgde mijn handelwijze	The project team followed my working method
The project team considers me to be a lively and enthusiastic communicator	Het project team vindt mij een enthousiaste spreker	The project team sees me as an enthusiastic speech man
During the project I encouraged the project team to have a critical faculty	Tijdens het project heb ik het project team gestimuleerd om kritisch naar gegeven zaken te kijken	During the project I've stimulated the project team to criticize current affairs

I encourages the project team to create an own vision	Ik heb het project team gestimuleerd om een eigen visie te ontwikkelen voor het project.	I stimulated the project team to develop its own vision
Members of the project team will probably contact me again to work on another project	Waarschijnlijk zullen leden van het project team mij nogmaals benaderen om samen te werken aan een project	The members of the project team will probably approach me to work on future projects
During the project I was aware of the impact of my own feelings	Ik was mij bewust van mijn eigen gevoelens tijdens het project	I was aware of my emotions during the projects
The project team trusted my decisions	Het project team had vertrouwen in mijn beslissingen	The team had confidence in my decisions
The priorities I set during the project turned out to be correct	Ik bleek de juiste prioriteiten te hebben gesteld tijdens het project	My priorities proved to be correct during the project
I handled situations under pressure well during the project	Ben je goed omgegaan met situaties onder druk tijdens het project	Have you adequately dealt with situations when you were under pressure during the project
Did the project team follow your vision during the project?	Heeft het project team jouw visie gevolgd tijdens het project	Did the project team follow you vision during the project
Did you control the impact of your own emotions during the project?	Heb je controle gehouden op de impact die je eigen emoties kunnen hebben op het project?	Did you control the impact of your emotions during the project
Did you encourage project team members to take on personally challenging tasks?	Heb je leden van het project team gestimuleerd om taken uit te voeren die voor hen persoonlijk uitdagend waren	Did you stimulate team members to do tasks that were personally challenging
Did you appropriately balance the needs of the project with the needs of the individuals involved?	Heb je de belangen van het project en de belangen van de betrokken met elkaar in evenwicht gehouden?	Did you keep a balance between the project's interests and the stakeholders' interests.
Did you give autonomy to the project team members?	Heb je de leden van het project team autonomie gegeven tijdens het project?	Did you give the members of the project team autonomy.
Do you gain trust through listening to project team members' perspectives?	Heb je vertrouwen geschept door naar de standpunten van de project team leden te luisteren	Was trust built due to listening to the opinions of the project team members?
Did you clearly communicate instructions to the project team members?	Heb je duidelijk instructies gecommuniceerd naar de project team leden	Did you give clear instructions to the project team members?

APPENDIX 6: FINAL VERSION QUESTIONNAIRE

Vragenlijst Projectmanagers zelfbeoordeling

Opening

Beste deelnemer,

Deze enquête is onderdeel van het afstudeeronderzoek van Sarah Heemskerk, master studente 'Management in the Built Environment' aan de TU Delft. Met behulp van deze enquête worden zeven competenties van de deelnemende projectmanagers gemeten. Als u uw naam en e-mailadres achter laat kan ik u de resultaten toesturen.

De enquête bestaat uit twee onderdelen: algemene management vragen en vragen over een specifiek project. Het maken van de enquête zal maximaal 15 minuten in beslag nemen.

Om een duidelijk beeld van uw competentie profiel te krijgen, zou ik graag een andere vragenlijst door iemand uit uw werkomgeving laten beantwoorden. Op deze manier kunt u een vergelijking maken tussen uw eigen beoordeling en die van een collega. Mochten wij nog geen contact hebben gehad over deze persoon en wilt u toch graag iemand anders uw competenties laten beoordelen? Dan kunt u aan het eind van de enquête zijn/haar contact-gegevens achter laten.

Uw antwoorden zullen vertrouwelijk worden behandeld. Dat houdt onder andere in dat we de individuele antwoorden niet met anderen bespreken. De antwoorden die worden gegeven door de persoon uit uw omgeving zullen op een geaggregeerd niveau worden teruggekoppeld in een rapportage aan u. Uw gegevens zijn alleen toegankelijk voor de onderzoeker zelf. Uw naam- en contactgegevens zullen niet langer dan noodzakelijk bewaard worden en uiterlijk bij afloop van het onderzoek vernietigd worden. De resultaten van het onderzoek zullen worden gebruikt in publicaties. Er zal zorg voor worden gedragen dat dit volledig zonder nadere identificatie van de deelnemers aan dit onderzoek gebeurt. Deelname aan dit onderzoek is vrijwillig. U kunt op ieder moment het onderzoek stop zetten en uw toestemming alsnog intrekken. Als u vragen heeft over dit onderzoek, kunt u contact met mij opnemen via sarah_heemskerk@hotmail.com

De enquête zal nu beginnen met vragen over uw algemene gegevens, waarna de competentie vragen zullen starten. Alvast bedankt voor uw medewerking.

X Wilt u onderstaande persoonlijke informatie invullen? Alle informatie zal anoniem in rapporten worden verwerkt. Uw naam wordt alleen door mij gezien, zodat ik u de resultaten op kan sturen.

A1 Naam:

A2 E-mail adres:

A3 Geslacht:

Man

Vrouw

A4 Leeftijd:

25-35 jaar

36-45 jaar

46-55 jaar

56 jaar en ouder

A5 Opleidingsniveau:

Middelbare School

MBO

HBO

WO

A6 Hoe lang werkt u als projectmanager?

0-10 jaar

11-20 jaar
21-30 jaar
30+ jaar

A7 Met welke contractvorm heeft u de afgelopen 5 jaar voornamelijk gewerkt? (meerdere antwoorden mogelijk)

Traditioneel (gescheiden contracten met architect en aannemer)

DB (Design & Build)

DBF (Design, Build & Finance)

DBFM (Design, Build, Finance & Maintain)

DBFMO (Design, Build, Finance, Maintain & Operate)

A7.1 Kunt u hieronder in percentages weergeven hoe vaak u de bepaalde contractvormen hebt gebruikt?

_____ Traditioneel

_____ DB

_____ DBF

_____ DBFM

_____ DBFMO

A8 Met welk type vastgoed werkt u voornamelijk?

Maatschappelijk

Commercieel

A9 Met welke contractvorm verwacht u in de komende 5 jaar vooral te gaan werken? (meerdere antwoorden mogelijk)

Traditioneel (gescheiden contracten met architect en aannemer)

DB (Design & Build)

DBF (Design, Build & Finance)

DBFM (Design, Build, Finance & Maintain)

DBFMO (Design, Build, Finance, Maintain & Operate)

A10 Op basis waarvan worden projectmanagers binnen uw bedrijf aan een bepaald project toegewezen? (meerdere antwoorden mogelijk)

Beschikbaarheid

Ervaring in het algemeen

Ervaring in het type vastgoed

Ervaring met een contractvorm

De leiderschapsstijl van de projectmanagers

Persoonlijke voorkeuren van projectmanagers

Het leertraject van de projectmanagers

X Dit is de start van deel I. De komende vragen/stellingen gaan over projectmanagement en u als projectmanager in het algemeen. Zou u zo realistisch mogelijk antwoord willen geven op de vragen?

Q1.1 Communicatie tussen leden van het projectteam is essentieel voor het succes van een project.

Helemaal mee eens

Enigszins mee eens

Enigszins mee oneens

Helemaal niet mee eens

Q1.2 Een duidelijke visie is essentieel voor het succes van een project.

Helemaal mee eens

Enigszins mee eens

Enigszins mee oneens

Helemaal niet mee eens

Q1.3 Het is erg belangrijk om rekening te houden met externe factoren tijdens een project.

Helemaal mee eens

Enigszins mee eens

Enigszins mee oneens
Helemaal niet mee eens

Q1.4 Alle projectteam leden dienen autonomie te hebben tijdens een project.
Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q1.5 Ik geef de instructies aan projectteam leden op een duidelijke manier.
Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q1.6 Ik presteer consequent in verschillende situaties onder druk.
Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q1.7 Ik kan anderen ervan overtuigen hun mening te veranderen.
Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q1.8 Ik stel doorgaans de juiste prioriteiten voor toekomstige werkzaamheden.
Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q1.9 Doorgaans moedig ik anderen aan om innovatieve voorstellen te doen.
Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q1.10 Ik ben in staat mijn eigen emoties te managen.
Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q1.11 Mijn manier van communiceren maakt mij toegankelijk.
Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q1.12 Ik houd de toekomstige consequenties voor mijn bedrijf in gedachten tijdens een project.
Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q1.13 Ik stimuleer verandering door de noodzaak te onderbouwen.
Helemaal mee eens
Enigszins mee eens

Enigszins mee oneens
Helemaal niet mee eens

Q1.14 Mijn manier van communiceren is inspirerend.
Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q1.15 Als ik word bekritiseerd dan houd ik mijn focus op de handelingen die moeten worden gedaan.
Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q1.16 Ik ga goed om met situaties die voor mij persoonlijk uitdagend zijn.
Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q1.17 Over het algemeen ben ik mij bewust van mijn eigen gevoelens.
Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q1.18 Ontwikkel je innovatieve ideeën tijdens je werk?
Altijd
Vaak
Zelden
Nooit

Q1.19 Houdt u doorgaans de korte- en lange termijn overwegingen in evenwicht?
Altijd
Vaak
Zelden
Nooit

Q1.20 Blijven uw prestaties gelijk onder druk?
Altijd
Vaak
Zelden
Nooit

Q1.21 Geeft u een duidelijke visie aan het begin van een project?
Altijd
Vaak
Zelden
Nooit

X Dit is de start van deel 2. Dit deel bestaat uit project specifieke vragen. Wilt u tijdens het invullen van de komende vragen uw laatst afgeronde project in gedachten nemen?

B1 Welk type vastgoed was uw laatst afgeronde project?
Maatschappelijk
Commercieel

B2 Welke contractvorm is tijdens het project gebruikt?
Traditioneel (gescheiden contracten met architect en aannemer)

DB (Design & Build)
DBF (Design, Build & Finance)
DBFM (Design, Build, Finance & Maintain)
DBFMO (Design, Build, Finance, Maintain & Operate)

B3 Wat was het bouwbudget van het project?

< €500.000
€500.000 - €2.000.000
€2.000.000 - €10.000.000
€10.000.000 - €50.000.000
> €50.000.000

X Houd uw laatste afgeronde project in gedachten tijdens het beantwoorden van onderstaande stellingen.

Q2.1 Het toespelen op kansen was erg belangrijk tijdens het project.

Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q2.2 Het toespelen op risico's was erg belangrijk tijdens het project.

Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q2.3 Mijn emoties hebben de beslissingen die ik nam tijdens het project niet beïnvloed.

Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q2.4 Het projectteam volgde mijn plan van aanpak.

Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q2.5 Het projectteam vindt mij een enthousiaste spreker.

Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q2.6 Tijdens het project heb ik het projectteam gestimuleerd om een kritische blik te hebben.

Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

X Houd wederom uw laatste afgeronde project in gedachten tijdens het beantwoorden van onderstaande stellingen.

Q2.7 Ik heb het projectteam gestimuleerd om een eigen visie te ontwikkelen voor het project.

Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q2.8 Waarschijnlijk zullen leden van het projectteam mij nogmaals benaderen om samen te werken aan een project.

Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q2.9 Ik was mij bewust van mijn eigen gevoelens tijdens het project.

Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q2.10 Het projectteam had vertrouwen in mijn beslissingen.

Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q2.11 Ik bleek de juiste prioriteiten te hebben gesteld tijdens het project.

Helemaal mee eens
Enigszins mee eens
Enigszins mee oneens
Helemaal niet mee eens

Q2.12 Bent u goed omgegaan met situaties onder druk tijdens het project?

Helemaal niet
Gedeeltelijk
Grotendeels
Helemaal

Q2.13 Heeft het projectteam uw visie gevolgd tijdens het project?

Helemaal niet
Gedeeltelijk
Grotendeels
Helemaal

Q2.14 Heeft u controle gehouden op de impact die je eigen emoties kunnen hebben op het project?

Helemaal niet
Gedeeltelijk
Grotendeels
Helemaal

Q2.15 Heeft u leden van het projectteam gestimuleerd om taken uit te voeren die voor hen persoonlijk uitdagend waren?

Helemaal niet
Gedeeltelijk
Grotendeels
Helemaal

Q2.16 Heeft u de belangen van het project en de belangen van de betrokkenen met elkaar in evenwicht gehouden?

Helemaal niet
Gedeeltelijk
Grotendeels
Helemaal

Q2.17 Heeft u de leden van het projectteam autonomie gegeven tijdens het project?

Helemaal niet
Gedeeltelijk

Grotendeels
Helemaal

Q2.18 Heeft u vertrouwen geschapen door naar de standpunten van de projectteam leden te luisteren?u
Helemaal niet
Gedeeltelijk
Grotendeels
Helemaal

Q2.19 Heeft u duidelijk instructies gecommuniceerd naar de projectteam leden?
Helemaal niet
Gedeeltelijk
Grotendeels
Helemaal

C1 Voor het onderzoek is het van belang om een vragenlijst door iemand uit uw omgeving te laten beantwoorden met betrekking tot uw competenties. Wilt u hieraan meewerken?Deze persoon zal algemene vragen over uw competenties beantwoorden, dus niet specifiek over een project.
Ja
Nee

C2 Zo ja, wie zou u kunnen beoordelen?

C3 Wat is zijn/haar e-mail adres?

Q70 In mijn afstudeerproject onderzoek ik of de leiderschapsstijl van projectmanagers in de praktijk verschilt bij verschillende contractvormen.
Denkt u dat er een verschil zal zijn in de leiderschapsstijlen van projectmanagers in een traditioneel project ten opzichte van een geïntegreerd project?Zou u een toelichting willen geven bij uw antwoord?

X Enorm bedankt voor uw medewerking aan deze enquête. De resultaten zult u zo snel mogelijk per mail ontvangen.

APPENDIX 7: QUESTIONNAIRE EXTERNAL REVIEWER

Vragenlijst externe beoordeling

X Beste,

Deze enquête is onderdeel van het afstudeeronderzoek van Sarah Heemskerk, master studente 'Management in the Built Environment' aan de TU Delft. Een projectmanager uit uw werkomgeving heeft mee gewerkt aan dit onderzoek door een vragenlijst over zijn/haar competenties in te vullen. Aan u het verzoek om dezelfde competenties van deze projectmanager te beoordelen.

De vragenlijst bestaat, naast enkele algemene vragen, uit 20 meerkeuze vragen. De score van deze vragenlijst zal worden vergeleken met de eigen beoordeling van de projectmanager. De antwoorden op de meerkeuze vragen zullen geaggregeerd aan de desbetreffende projectmanager worden toegezonden. Uw gegevens zijn alleen toegankelijk voor de onderzoeker zelf. Uw naam- en contactgegevens zullen niet langer dan noodzakelijk bewaard worden en uiterlijk bij afloop van het onderzoek vernietigd worden. De resultaten van het onderzoek zullen worden gebruikt in publicaties. Er zal zorg voor worden gedragen dat dit volledig zonder nadere identificatie van de deelnemers aan dit onderzoek gebeurt. Deelname aan dit onderzoek is vrijwillig. U kunt op ieder moment het onderzoek stop zetten en uw toestemming alsnog intrekken.

Als u vragen heeft over dit onderzoek, kunt u contact met mij opnemen via sarah_heemskerk@hotmail.com

Alvast bedankt voor uw medewerking.

A1 Uw naam:

A2 Uw e-mailadres:

A3 De naam van de projectmanager die u gaat beoordelen:

A4 Wat is uw positie ten opzichte van de projectmanager die u gaat beoordelen?

- ☐ Opdrachtgever
- ☐ Leidinggevende
- ☐ Collega
- ☐ Oud-collega
- ☐ Kennis

A5 Op een schaal van 1-10, hoe goed is uw relatie met de projectmanager?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10

A6 Op een schaal van 1-10, hoe vriendelijk vindt u de projectmanager?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10

A7 Op een schaal van 1-10, hoe goed kunt u samenwerken met de projectmanager?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10

Q1 De projectmanager bevordert de communicatie tussen leden van een projectteam.

- ☐ Helemaal mee eens
- ☐ Enigszins mee eens
- ☐ Enigszins mee oneens
- ☐ Helemaal niet mee eens

Q2 De projectmanager geeft een duidelijke visie aan het begin van een project.

- ☐ Helemaal mee eens
- ☐ Enigszins mee eens
- ☐ Enigszins mee oneens
- ☐ Helemaal niet mee eens

Q3 De projectmanager houdt rekening met externe factoren tijdens een project.

- ☐ Helemaal mee eens
- ☐ Enigszins mee eens
- ☐ Enigszins mee oneens
- ☐ Helemaal niet mee eens

Q4 De projectmanager geeft autonomie aan de leden van een projectteam.

- ☐ Helemaal mee eens
- ☐ Enigszins mee eens
- ☐ Enigszins mee oneens
- ☐ Helemaal niet mee eens

Q5 De projectmanager geeft instructies aan projectteam leden op een duidelijke manier.

- ☐ Helemaal mee eens
- ☐ Enigszins mee eens
- ☐ Enigszins mee oneens
- ☐ Helemaal niet mee eens

- Q6 De projectmanager presteert consequent in verschillende situaties onder druk.
- ☐ Helemaal mee eens
 - ☐ Enigszins mee eens
 - ☐ Enigszins mee oneens
 - ☐ Helemaal niet mee eens
- Q7 De projectmanager kan anderen ervan overtuigen hun mening te veranderen.
- ☐ Helemaal mee eens
 - ☐ Enigszins mee eens
 - ☐ Enigszins mee oneens
 - ☐ Helemaal niet mee eens
- Q8 De projectmanager stelt doorgaans de juiste prioriteiten voor toekomstige werkzaamheden.
- ☐ Helemaal mee eens
 - ☐ Enigszins mee eens
 - ☐ Enigszins mee oneens
 - ☐ Helemaal niet mee eens
- Q9 De projectmanager moedigt anderen aan om innovatieve voorstellen te doen.
- ☐ Helemaal mee eens
 - ☐ Enigszins mee eens
 - ☐ Enigszins mee oneens
 - ☐ Helemaal niet mee eens
- Q10 De projectmanager is in staat zijn/haar eigen emoties te managen.
- ☐ Helemaal mee eens
 - ☐ Enigszins mee eens
 - ☐ Enigszins mee oneens
 - ☐ Helemaal niet mee eens
- Q11 De manier van communiceren van de projectmanager maakt hem/haar toegankelijk.
- ☐ Helemaal mee eens
 - ☐ Enigszins mee eens
 - ☐ Enigszins mee oneens
 - ☐ Helemaal niet mee eens
- Q12 De projectmanager houdt de toekomstige consequenties voor het bedrijf in gedachte tijdens een project.
- ☐ Helemaal mee eens
 - ☐ Enigszins mee eens
 - ☐ Enigszins mee oneens
 - ☐ Helemaal niet mee eens
- Q13 De projectmanager stimuleert verandering door de noodzaak ervan te onderbouwen.
- ☐ Helemaal mee eens
 - ☐ Enigszins mee eens
 - ☐ Enigszins mee oneens
 - ☐ Helemaal niet mee eens
- Q14 De manier van communiceren van de projectmanager is inspirerend.
- ☐ Helemaal mee eens
 - ☐ Enigszins mee eens
 - ☐ Enigszins mee oneens
 - ☐ Helemaal niet mee eens

Q15 Als de projectmanager wordt bekritiseerd houdt hij/zij zijn/haar focus op de handelingen die moeten worden gedaan.

- ☐ Helemaal mee eens
- ☐ Enigszins mee eens
- ☐ Enigszins mee oneens
- ☐ Helemaal niet mee eens

Q16 De projectmanager gaat goed om met situaties die voor hem/haar persoonlijk uitdagend zijn.

- ☐ Helemaal mee eens
- ☐ Enigszins mee eens
- ☐ Enigszins mee oneens
- ☐ Helemaal niet mee eens

Q17 De projectmanager is zich bewust van zijn/haar eigen gevoelens.

- ☐ Helemaal mee eens
- ☐ Enigszins mee eens
- ☐ Enigszins mee oneens
- ☐ Helemaal niet mee eens

Q18 Ontwikkelt de projectmanager innovatieve ideeën tijdens zijn/haar werk?

- ☐ Altijd
- ☐ Vaak
- ☐ Zelden
- ☐ Nooit

Q19 Houdt de projectmanager doorgaans de korte- en langetermijn overwegingen in evenwicht?

- ☐ Altijd
- ☐ Vaak
- ☐ Zelden
- ☐ Nooit

Q20 Blijven de prestaties van de projectmanager gelijk onder druk?

- ☐ Altijd
- ☐ Vaak
- ☐ Zelden
- ☐ Nooit

BI Bedankt voor het invullen van de vragenlijst. In mijn afstudeerproject onderzoek ik of de leiderschapsstijl van projectmanagers in de praktijk verschilt bij verschillende contractvormen. Denkt u dat er een verschil zal zijn in de leiderschapsstijlen van projectmanagers in een traditioneel project ten opzichte van een geïntegreerd project? Zou u een toelichting willen geven bij uw antwoord?

X Dit is het einde van de vragenlijst. Nogmaals dank voor uw medewerking.

APPENDIX 8: INFORMED CONSENT LETTER

Beste heer/mevrouw,

Graag wil ik uw medewerking vragen voor het onderzoek dat is getiteld “Applied leadership styles of project managers working with various contract types”. Dit onderzoek maakt deel uit van mijn afstudeerproject, wat onder leiding van prof. dr. ir. J.W.F. Wamelink wordt uitgevoerd.

Voor het onderzoek wil ik:

- een vragenlijst bij u afnemen.
- een vragenlijst bij iemand uit uw werkomgeving afnemen.

Doel van het onderzoek is het verkrijgen van meer inzicht in de competenties van project managers in situaties met verschillende contract types. Naar aanleiding van het competentie onderzoek kunnen er verschillende leiderschap stijlen bij de project managers worden geconstateerd.

Alle informatie zal strikt vertrouwelijk worden behandeld. Uw gegevens zijn alleen toegankelijk voor de onderzoeker zelf. Uw naam- en contactgegevens zullen niet langer dan noodzakelijk bewaard worden en uiterlijk bij afloop van het onderzoek vernietigd worden. De resultaten van het onderzoek zullen worden gebruikt in publicaties. Er zal zorg voor worden gedragen dat dit volledig zonder nadere identificatie van de deelnemers aan dit onderzoek gebeurt.

Deelname aan dit onderzoek is vrijwillig. U kunt op ieder moment het onderzoek stop zetten en uw toestemming alsnog intrekken.

Als u vragen heeft over dit onderzoek, kunt u contact op nemen met mij, Sarah Heemskerk (telefoon 06 20778413, email sarah_heemskerk@hotmail.com <mailto:c.j.vanoel@tudelft.nl>).

Als u mee wilt doen aan dit onderzoek, zou u dan de onderstaande verklaring willen invullen en ondertekenen.

In te vullen door de deelnemer

Ik verklaar op een voor mij duidelijke wijze te zijn ingelicht over de aard, methode, doel en belasting van het onderzoek.

Mijn vragen zijn naar tevredenheid beantwoord.

Ik behoud me daarbij het recht voor om op elk moment zonder opgaaf van redenen mijn deelname aan dit onderzoek te beëindigen.

Ik heb dit formulier gelezen of het formulier is mij voorgelezen en ik stem in met deelname aan het onderzoek.

- ☐ **Graag ontvang ik aan het eind van het onderzoek een korte samenvatting van de resultaten van het onderzoek. Om deze reden verleen ik toestemming om mijn naam- en adresgegevens tot het eind van het onderzoek te bewaren.**

Plaats:

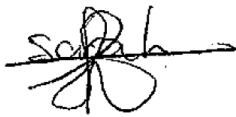
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(Volledige naam, in blokletters)

(Handtekening deelnemer)

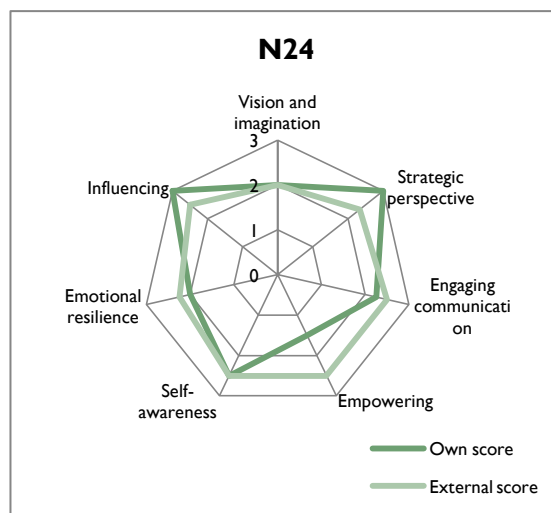
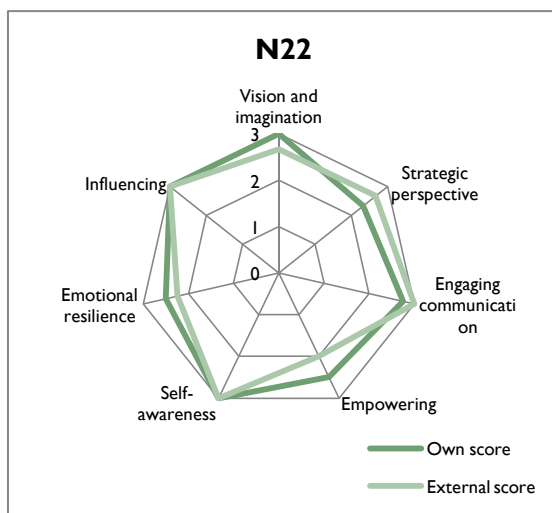
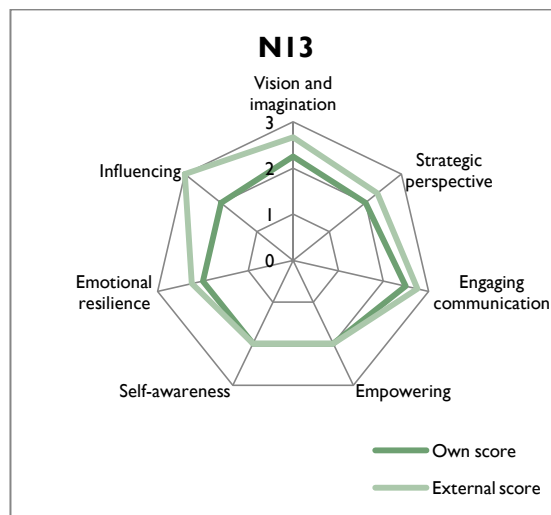
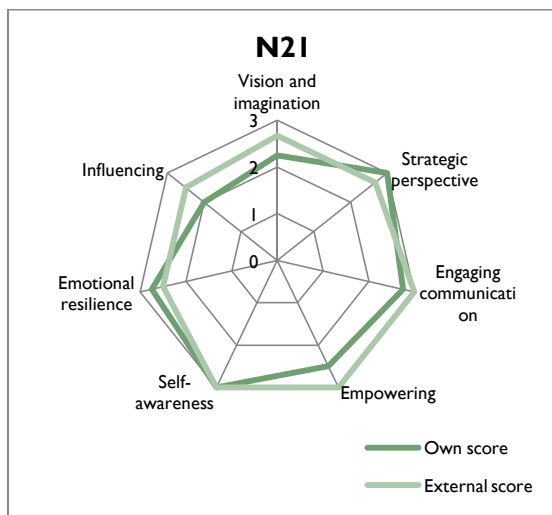
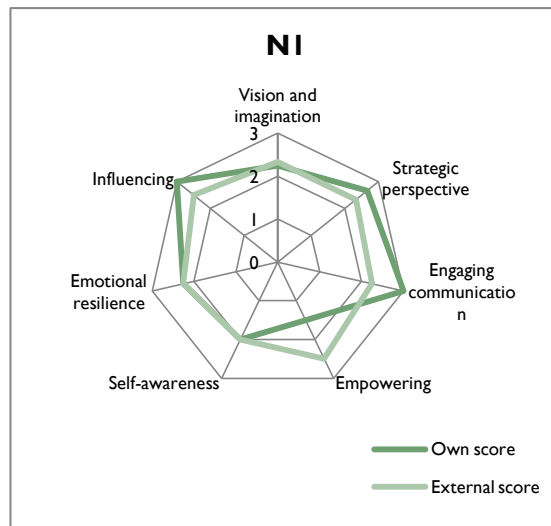
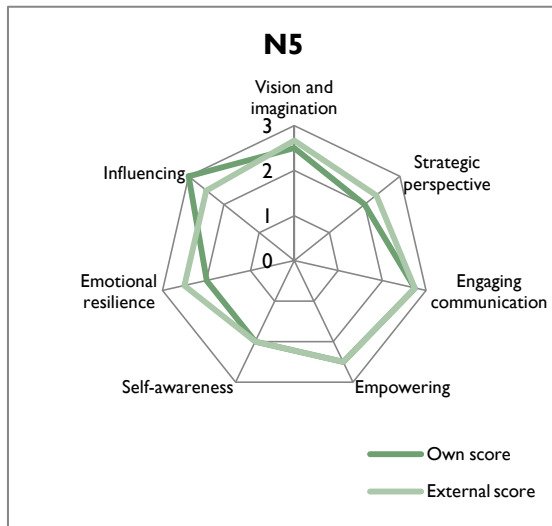
'Ik heb toelichting verstrekt op het onderzoek. Ik verklaar mij bereid nog opkomende vragen over het onderzoek naar vermogen te beantwoorden.'

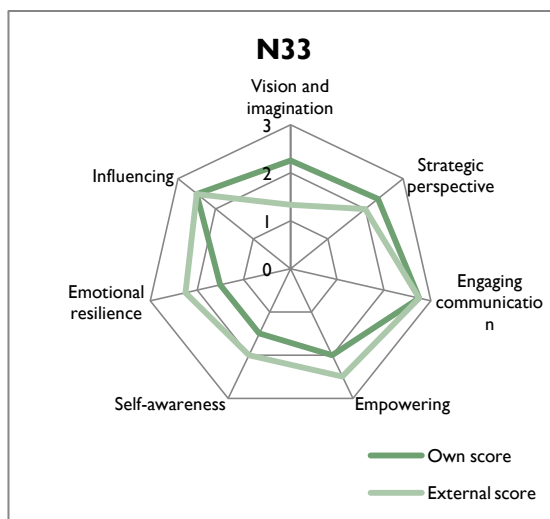
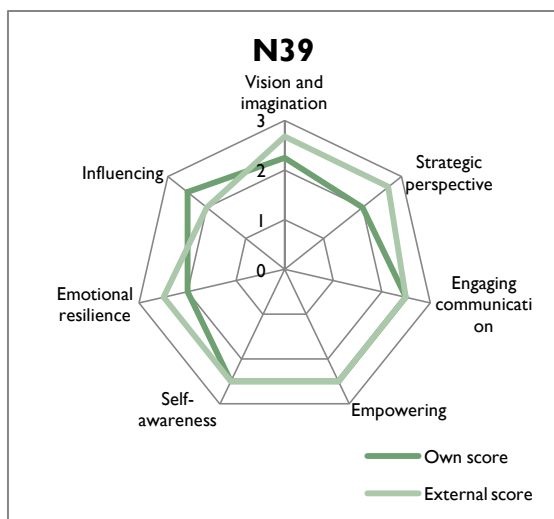
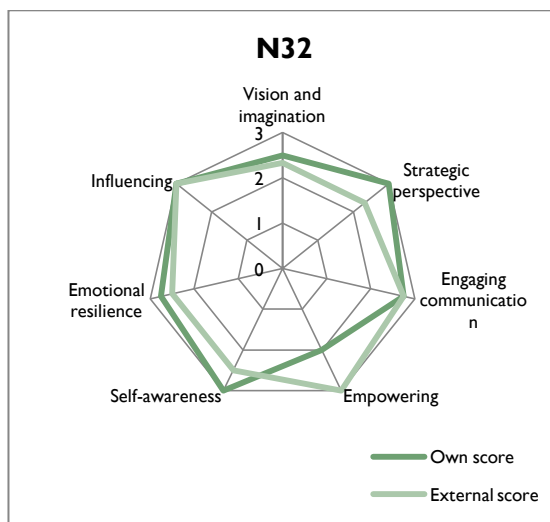
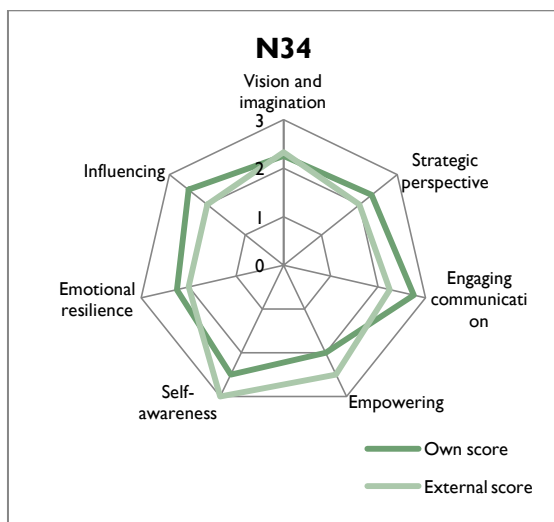
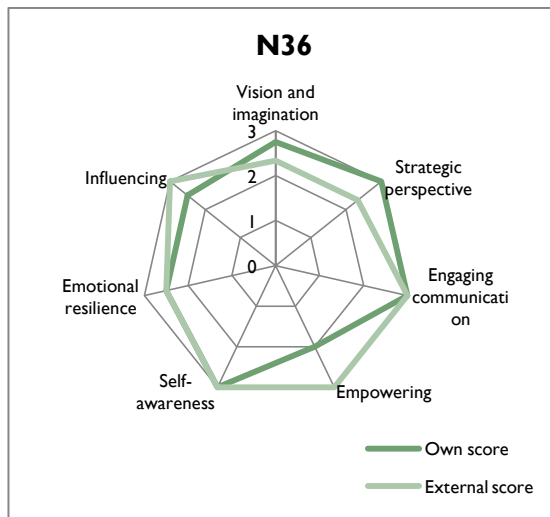
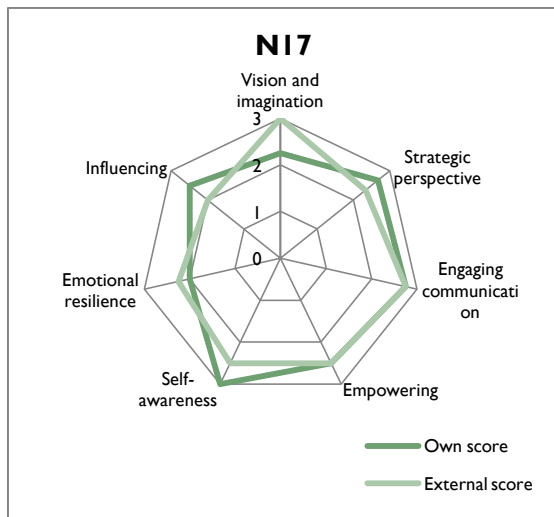
Sarah Heemskerk

A handwritten signature in black ink, appearing to read 'Sarah', with a long horizontal stroke extending to the right.

(Handtekening student/onderzoeker)

APPENDIX 9: SELF-ASSESSMENT VS. EXTERNAL REVIEW





APPENDIX 10: ANSWERS TO OPEN QUESTION

N1: Denk het niet. Hoewel het bij verschillende contractvormen over verschillende onderdelen gaat, zal iemands manier van leidinggeven daardoor niet veranderen.

N2: Ja, bij een traditioneel project hebben wij de leiding, coördinatie e.d. en bij geïntegreerde contractvormen zijn wij meer toetsend, bewaking van het proces en stellen van vragen. Beide trajecten vraagt om een andere benadering en competenties van de projectmanager

N3: In het traditionele proces heeft de projectmanager veel verantwoordelijkheid. In een geïntegreerd bouwproces is veel verantwoordelijkheid weggelegd bij de Opdrachtnemer/aannemer. De project (of contractmanager in deze) heeft dan een duidelijk andere rol. Deze rol is meer gericht op controle van de werkzaamheden van de Opdrachtnemer middels het toetsen en accepteren van diverse deelproducten en wijzigingen in het project goed af te spreken. Dit is dus meer een toetsende/controleerende rol in plaats van de leidende rol. De contract of projectmanager bij een geïntegreerd proces blijft natuurlijk wel verantwoordelijk voor het aansturen van zijn eigen team van adviseurs en auditor. .

N4: De rollen en verhoudingen verschillen per soort contract. Dit vraagt om een andere stijl van het begeleiden van het project

N5: Dat vermoed ik wel. Ik denk dat de meer 'geïntegreerde' contractvormen met meerdere aspecten een projectmanager vereisen die nog meer op hoofdlijnen stuurt en meer afhankelijk is van de autonomie van zijn projectteamleden.

N6: -

N7: Ja, daar zit verschil in. Regie (proactief) versus Controle (reactief)

N8: ja, ik vermoed van wel. aangezien de werkzaamheden erg verschillen. bij de traditioneel stuur je in het project bij geïntegreerde contracten stuur je op het project management zit aan de voorkant en daarna is het contractbewaking.

N9: Mijn beeld is dat dit wel deels van invloed is. Leiderschapsstijlen zijn natuurlijk niet direct afhankelijk van contractvorm. Mijn ervaring leert echter dat bepaalde contractvormen beter aansluiten bij je gangbare werkwijze dan andere.

N10: Ja. Traditioneel is zelf de regie houden op het projectteam (ontwerpteam) en later aannemer. Dat vergt een andere benadering dan bij een geïntegreerd contract, waarbij de projectmanager minder regie heeft en meer op afstand staat van het ontwikkelproces.

N11: Nee is deels afhankelijk van manier van contracteren, maar hangt nog veel meer af van het soort project, de opdrachtgever en de cultuur tussen de gebruikers onderling. Plus elke projectmanager heeft een eigen stijl afhankelijk van het karakter van de persoon. En verschillende karakters kunnen in beide contractvormen of soort project tot hun recht komen. Alles hangt af van de samenwerking dan.

N12: -

N13: Ja

N14: -

N15: -

N16: Ja, integraal vraagt meer van samenwerking en visie op lange termijn

N17: Ja. Bij geïntegreerde projecten zal de leiderschap anders moeten worden ingestoken. Je moet meer overlaten aan de markt en daarop sturen. Bij traditioneel stuur je op andere aspecten en vergt een andere manier van leiderschap

N18: Het kan zijn dat een ander contract een andere stijl vraagt, maar dit hoeft niet per definitie zou te zijn. De benodigde stijl wordt eerder bepaald door de 'soort' opdrachtgever, type klus/omgeving/risico's/complexiteit/etc, de fase waarin je binnenkomt en nog vele andere factoren.

N19: Bij een geïntegreerd project is samenwerking en vertrouwen belangrijker dan in een traditioneel project. Projectmanagers van zowel opdrachtgevers als opdrachtnemers-zijde moeten daartoe gezamenlijke condities scheppen voor samenwerking. Aspecten als missie en visie zijn daarom in dergelijke contracten belangrijker.

N20: Ik verwacht hier geen verschil in aangezien mijn stijl van aansturing op hoofdlijnen betreft.

N21: Bij geïntegreerde contracten/projecten maak je iets samen; de zachte kant zal hierbij in je leiderschapstijl belangrijk zijn. Het is niet van "hullie en zullie"; het is samen. Daarnaast is het belangrijk dat je de ON ook zijn werk moet laten doen en niet de ouderwetse toezichthouder "speelt" om innovaties mogelijk te maken. Het is aan ON om aan te tonen dat deze innovaties volstaan!

N22: Ja deels. Maar een goede projectleider zou het allemaal moeten kunnen. Wel zal de ene vorm beter "liggen" dan de andere

N23: Dat hoeft niet. Als beide projectvormen te maken hebben met het omgaan met mensen binnen contactuele afspraken. De wijze van leiderschapstijl heeft ook een relatie met je persoonlijke stijl, wellicht karakter. De ene manager is meer systemisch, de andere meer een peoples manager en team builder. Daarnaast kan je stijl beïnvloed worden door de situatie. Je gaat wat anders om met een team van opdrachtgevers dan met een team van bouwvakkers. Tenslotte zijn er veel partijen die geen contractuele relatie met je hebben: omwonenden, de pers, de politiek, de vergunningverleners, belangengroepen. Die benader je dus anders en de moeten anders gemanaged worden. Een manager managed vaak situationeel.

N24: Jazeker! Dit vraagt een heel ander type managementstijl. Dit komt voornamelijk omdat de risico's veel meer zijn gealloceerd bij de opdrachtnemer. Het is denken in kansen, integraliteit zoeken tussen de verschillende disciplines die betrokken zijn bij de uitvoering van de DB(F)MO.

N25: geïntegreerd project behelst meerdere belangen en heeft meerdere stakeholders waardoor een politiektechnisch spel gaande is.

N26: Ja, bij een traditionele project is de harde kant van projectmanagement belangrijker en bij geïntegreerde projecten is het meer van belang om te managen op de zachte kanten.

N27: Jazeker. Bij geïntegreerde contacten is het belangrijk dat de projectmanagers buiten de kaders en over de schutting heen kunnen kijken. Daarbij moeten ze, naast de belangen van hun werkgever, ook de belangen van de opdrachtgever en zijn/haar medewerkers in het oog houden. Traditionele projectmanagers zijn veel gefocust op 1 taak en zijn minder of nauwelijks multidisciplinair.

N28: Jazeker! Er wordt bij een integraal project gevraagd om meer disciplines te managen (breder) en er zijn meer fasen bij betrokken (langer). Dat betekent dat er ook meer verschillende typen partijen en personen betrokken zijn en daarmee moeten verschillende bloedgroepen gemanaged worden. Daarvoor is een bredere blik nodig en begrip/empathie voor verschillende belangen, processen en mensen.

N29: Nee, Ik denk dat de leiderschapstijl hetzelfde blijft bij zowel een traditioneel als geïntegreerd project.

N30: ja, heeft te maken met het juridische aspect. verder is hoe de OG hierin zit van belang en hoe hij tot de keuze van het contract is gekomen. als laatste is niet iedereen 'geschikt' voor een GC project bij ON en OG.

N31: Ja, bij geïntegreerd neemt de complexiteit toe en zal de voorfase langer duren en meer inzet vragen, dus ook een ander type manager. De ene moet verbinden om het voor elkaar te krijgen, de andere moet duidelijk zijn om het gewenste resultaat te behalen.

N32: *Ja dat verschil is er, maar dat verschil ontstaat ook al bij een traditioneel traject. Het is rol afhankelijk en de wijze van communicatie is in een traditioneel proces zeer van belang hoe het proces verloopt. Het is niet of of, maar en en.*

N33: *Ja, integreren van contracten vraagt denk ik een visie die verder vooruit kijkt dan wanneer je keuzes kunt blijven maken gedurende het proces. Visie en inspirerend leiderschap hebben veel met elkaar te maken.*

N34: *jazeker. Een DBM tot een DBFMO traject vraagt om centrale project visie tm het einde van het project, het over je eigen grenzen heen kunnen kijken, cocreatie in het bidteam, gelijkrichten van de belangen binnen het bidteam en richting de opdrachtgever, focus op the best for project, benadering vanuit levensduurgedachte,*

N35: *Ik denk het wel, bij DBFMO wordt er bv meer op risico's gestuurd en dat vraagt een andere stijl en andere competenties*

N36: *Ja, idealiter zeker echter veel managers hebben nog een behoorlijke leercurve te doorlopen voordat zij de traditionele stijl van leidinggeven kunnen loslaten en meet vanuit LCC en lange termijn belang voor het project, de OG en ON gaan denken.*

N37: *Ja dat denk ik wel. In een geïntegreerd project komt samenwerken meer naar de voorgrond en dat vraagt een andere manier van sturing en leiding geven. Bij een traditioneel contract wordt sneller naar goed/ fout gekeken en is een starre houding soms meer gewenst.*

N38: -

N39: *Ja. Geïntegreerde projecten vragen een gemeenschappelijke benadering en hebben een looptijd van 25 jaar. De insteek is erop gericht om een langdurige werkbare samenwerking te hebben. De "botte bijl" benadering werkt dan meestal niet.*

N40: *zou wel moeten!!*

N41: *Ja, mogelijk, omdat bij een geïntegreerd project de verantwoordelijkheden en risico's anders belegd zijn en mogelijk andere aansturing behoeven jegens de opdrachtnemer(s).*

N42: -

N43: *Persoonlijk denk ik niet dat de stijl(en) verschillen, maar door de complexiteit van een geïntegreerd contract dienen de leiderschapsstijlen meer afwisselend en intenser gehanteerd te worden.*

N44: *Jazeker, sturen op een geïntegreerde contractvorm vergt een andere houding ten aanzien van de rollen en verantwoordelijkheden die partijen hebben. Dit vergt een andere sturing proces en inhoud. Bij traditioneel is een directieve stijl meer gangbaar, terwijl bij geïntegreerde projecten het managen op resultaten, rollen, verantwoordelijkheden en processen van belang zijn.*

N45: -

N46: *Ik denk dat de manager in een andere stijl moet werken. Bij DB moet er aan de voorkant meer worden geregeld en tijdens de samenwerking met de aannemer meer aan de uitvoeringspartner worden overgelaten*

N47: -

N48: *Dat is m.i. afhankelijk vanuit welke bril je kijkt. Ik ben exploitatiemanager en werk aan DBFMO-projecten maar ook aan projecten waarin alleen het beheer van gebouwen wordt uitbesteed. Ook bij dit laatste type projecten is sprake van een prestatiecontract net zoals bij DBFMO-projecten. Een prestatiecontract vraagt m.i. een bepaalde leiderschapsstijl waarbij je mensen meer autonomie en zelfsturendheid geeft. Kijk je bijvoorbeeld vanuit de aannemer en vergelijk je traditionele bestekswerken met DBFMO-projecten dan zal er zeker een andere leiderschapsstijl toegepast worden. Bij traditionele werken zal deze meer directief zijn dan bij integrale projecten.*

N49: *Ik denk het niet. Ik denk dat verschillende leiderschapsstijlen toegepast kunnen worden voor verschillende contractvormen. Hoewel in verschillende contractvormen wel andere competenties van teamleden worden verwacht, maar dat hoeft niet tot een andere leiderschapsstijl te leiden.*

N50: *Niet noodzakelijkerwijs. De verantwoordelijkheidsverdeling tussen OG en ON is anders, waardoor de sturing veranderd. De leiderschapsstijl wordt vooral beïnvloed door de mate waarin partijen aan hun verantwoordelijkheid invulling geven. En daarbij het gezamenlijke projectbelang behartigen.*

N51: *In denk van wel, aangezien bij een geïntegreerd contract meer creativiteit, innovatie en oplossend vermogen van de contractpartij wordt verwacht t.o.v. een traditioneel contract waarbij alles tot op detail wordt uitgewerkt en voorgeschreven.*

N52: -

N53: -

N54: *Bij een traditioneel project moet de projectmanager meer zijn stempel (kunnen) drukken op het project. Bij een geïntegreerd project moet hij meer (kunnen) loslaten*