p²rapport

The match between project leader and project type

By

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Master thesis

p² ontwikkeling **UNIVERSITY OF TWENTE.**

The match between project leader and project type

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PREFACE

This report presents the final master thesis for the master Business Administration at the University of Twente. I could not have written this without the help of several people in my surroundings. I would like to thank Daniëlle Klaassen. She helped me to find the subject for this thesis and supervised me throughout the whole process. She was a big help, especially because of all her knowledge of the research field. I would also like to thank Roelof van der Weg who was a big help also. Moreover I would like to express my gratitude to Christiaan Katsma and Esther Klaster. Their ideas and feedback were very helpful to improve the quality of the research and the report. Without them I would not have been able to provide a report with this level of quality.

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And last, but certainly not least, my boyfriend. He made sure that the time I had left in the last two months was used for relaxing time. When I was not behind the computer, he made sure I would not think about the thesis too much.

Thanks to all of you I was able to write this master thesis. Thank you all!

MANAGEMENT SUMMARY

Projects are a popular way of working in business now-a-days, though many projects are unsuccessful. Knowing this, you start to wonder; what is going wrong, where are the problems? One of the ideas developed by P2ontwikkeling is that a match between project leader and project type is relevant. It is expected that when a project leader matches the project type, the project will be more successful than without the match. To study whether or not this idea is true, a research question is created: 'Is there a relevant match between project leader and project type and, based on that relationship, what project leader characteristics should be matched to what project type?' The research setting in which the question is studied includes the two project types fixed deliverable and experimental projects. The projects with a fixed deliverable have the requirement that the deliverable of the project is clear and fixed; only the road to go there can be determined by the project team. Experimental projects do not yet have a fixed deliverable. The team might have a deliverable in mind, but the project research and application studies will determine the final deliverable. The projects studied are still ongoing and found with the help of P2ontwikkeling.

The study started by looking at previous studies about the subject. It showed that four studies reviewed the subject in the last couple of years. All these studies showed that the project leader influences success and that the project leader characteristics leading to project success differ per project type. The next section shows the main results of the studies. McDonough III (1990) states that new technology projects are positively influenced by the bisociative problem solving style and the academic degree of the project leader. Minor modification projects are positively influenced by years in the present position and age. Dvir et al. (2006) conclude that high-tech projects need a high level of perceiving, a low level of openness to experiences, and a low level of rebellious dreamer. Derivative projects need a low level of perceiving, a high level of openness to experience, and a high level of rebellious dreamer. The study of Storm and Vuijk (2008) shows that fire projects are in need of diplomatic, self-aware, independent, and autonomous leaders and earth projects are in need of pragmatic, realistic, steady, and organizing project leaders. Müller and Turner (2007a) present that EQ (emotional competencies) is almost always contributing to project success, MQ (managerial competencies) sometimes, and IQ (intellectual competencies) almost never. More specifically, they state that from EQ conscientiousness and sensitivity are the main contributors to project success. For renewal projects in particular self-awareness is important.

In these four studies, no agreement is reached about which project leader characteristics are important and how to categorize projects. Therefore, the methodologies are reviewed and also other methods are investigated. With this information the final research model is created. This shows that the relation between project leader and project type is studied looking at the level of progress of the project. The type of project leader is determined with the help of the 16 personality factor (16PF) questionnaire. The type of project is controlled with the help of several attributes of the model of Crawford et al. (2005/2006) and a list of statements created by a practitioner involved in the study. The project's progress is established with the help of twelve critical success factors and the opinion about the progress of participants in the project.

The data is collected with the help of the 16PF questionnaire, questionnaires about the project type and progress, and interviews about progress and project leader characteristics. The analysis of the data is done with the help of SPSS. Several statistical tests are used to analyze the dataset. The main conclusions resulted from the t-tests of the 16PF and the project type. These conclusions are that for fixed deliverable projects a project leader needs a low level of reasoning (B) and dominance (E), a medium level of warmth (A), and a high level of rule-consciousness (G) and self-control. For experimental projects on the other hand, the project leader needs an extremely low level of warmth (A) and rule-consciousness (G), a low level of self-control, and a high level of reasoning (B) and dominance (E). T-tests between the 16PF and the level of progress show that the project leader characteristics necessary for a project to progress well are an extremely low level of tension (Q4), a low level of anxiety, a high level of reasoning (B) and emotional stability (C), and an extremely high level of openness to change (Q1).

Most of these necessary project leader characteristics seem logical, though some of them seem illogical. For experimental projects, the level of warmth (A) should be low. This means that a project leader should be reserved, impersonal, and distant. This does not seem logical for experimental projects. Here you would expect a project leader who is warm-hearted, caring, and attentive to others.

Also, the level of dominance (E) for fixed deliverable as well as experimental projects seems to be odd. The results show that for fixed deliverable projects a project leader should have a low level of dominance, meaning that the project leader is deferential, cooperative, and avoids conflict. For experimental projects the project leader should have a high level of dominance, meaning being dominant, forceful, and assertive. For this personality factor it could be expected that it would be the other way around.

Additionally, self-reliance (Q2) could be expected to be lower (more group-oriented) for experimental projects than for fixed deliverable. The results suggest it to be the other way around.

Moreover, the results suggest that for both project types reasoning (B) should be high to gain good progress. The results for fixed deliverable projects on the other hand show that project leaders should have a low level of reasoning (B) to gain good progress on their projects. This is in disagreement with each other.

It is possible that the illogicality of these results is caused by other project leader characteristics not investigated in this study. Expertise of the project leader for example may be more important for a good progress of the project than a specific level of one of the 16 personality factors.

The study provided an answer to the research question. This answer is that there is a relevant match between project leader and project type and that specific personality factors relate to the two project types. These personality factors are warmth (A), reasoning (B), dominance (E), rule-consciousness (G), abstractedness (M), self-reliance (Q2), and self-control. Furthermore, some personality factors relate to all good progress projects, these are: reasoning (B), emotional stability (C), openness to change (Q1), tension (Q4), and anxiety.

TABLE OF CONTENT

1 INTRODUCTION

Projects become more and more a standard way of working. Though, only a small percentage is successful. Two cited percentages are: 33% successful (Vuijk, 2005) and 28% successful (The Standish Group International, 2001). This leaves a person to wonder; why are projects used so often, while they are repeatedly unsuccessful; what is the reason that projects are not successful. In the last years the amount of studies related to these questions has increased. Though, it did not lead to an agreement about several statements. Therefore, research about the subject is still an important issue.

In the Netherlands, the company P2managers is specialized in process, program, and project management (p2managers.nl). P2ontwikkeling is a subsidiary of P2managers, and works on improving project management skills in organizations.

Because the issue of unsuccessful projects is in the field of interest of P2ontwikkeling, they started to develop some ideas about it. The idea that the project leader makes a large difference is one of the ideas requesting more research. Preliminary literature search showed that the relation between project leader and project type is studied. Despite disagreement in the research methods, all results show that the match between project leader and project type is relevant for a successful project. Though, not all methods used are strongly argued. Therefore the question remains; do the results stay the same when other instruments are used to determine project leader type and/or project type? And, what project leader characteristics should be matched to what project type? This study tries to answer both questions.

Two companies are involved in the organisation of this study, P2ontwikkeling and DaanBV. P2ontwikkeling is part of P2managers which provides professional managers specialized in process, program, and project management (p2managers.nl). DaanBV is owned by Daniëlle Klaassen (daanbv.com). She can be hired by companies for project management, process management, interim management, change management, coaching, and training.

The report contains several sections. This chapter will present the preliminary research model and the research setting. After that, the available literature about the subject is presented. This literature provides a final research model for the study which is displayed in chapter 3. This chapter also includes the methods used to study the research question. Chapter 4 describes the results that came from the dataset which is followed by a chapter discussing the results. This discussion leads to the conclusions. In the end the limitations and issues for further research will be discussed in chapter 7.

1.1 Preliminary research model

To study the research question a research model is created. First a preliminary research model is made. With the help of literature a more specific, final research model will be created. This final research model is presented in chapter 3.

To study the match between project leader and project type a research question is created. This question is: 'Is there a relevant match between project leader and project type and, based on that relationship, what project leader characteristics should be matched to what project type?'

The preliminary research model shows the match between project leader and project type in relation to project's progress (Figure 1.1). The literature review will help find the instruments to categorize within the elements project leader, project type, and project's progress. The selection of these instruments will lead to the final research model.
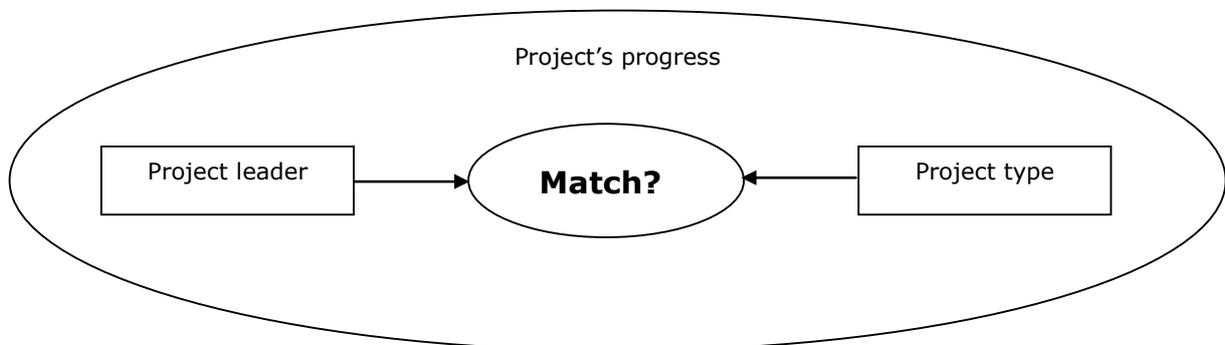
Figure 1.1: Preliminary research model

1.2 Research setting

To be able to study the match between project leader and project type it is necessary to have projects to study. Because of time limitations, the choice is made to use two basic project types which can be seen as two extremes. These two basic types are projects with a fixed or well known deliverable and experimental projects. These extremes result from the axis sensing vs. intuition in the model described in paragraph 2.5.3 and displayed in Figure 2.5. The projects with a fixed deliverable have the requirement that the deliverable of the project is clear and fixed; only the road to go there can be determined by the project team. Experimental projects do not yet have a fixed deliverable. The team might have a deliverable in mind, but the project research and application studies will determine the final deliverable.

To find projects within these two extremes, the company P2ontwikkeling helped. They provided contacts with project leaders throughout the Netherlands. In total members of five projects with a fixed deliverable and five experimental projects were willing to participate in the research. As the reviewed projects are still ongoing, the projects' progress is measured instead of projects' success.

2 LITERATURE REVIEW

This chapter reviews the literature written about the match between project leader and project type. To learn from, methodologies of four previous studies about the relation between project leader and project type are reviewed. Following, some other methodologies are discussed. This leads to conclusions about the instruments used in this study.

2.1 Literature search

The literature search started in the search applications Scopus, Web of Science, and scholar.google.nl. To gain general information about the relationship in this study, the search words 'project' and 'project leader/manager' were combined. More specific information was found by using search words like 'project type indicators' and 'people project'. The scope was also narrowed down by searching in specific journals. Especially the *International Journal of Project Management* was used. The articles retrieved from this search were all assessed on title and abstract. 30 articles related to the current study were selected. Next, these articles were ordered in the themes project leader, project type, project success, project leader to project type, project leader to project success, and project leader to project success intermediated by project type. Per theme, the articles were scanned and the most promising read in detail. Relevant backward references from the articles were retrieved. In total 26 articles were found.

Next to these articles, relevant books, conference papers, and theses were included.

2.2 Recent studies

In the last couple of years four studies were conducted about the match between project leader and project type in relation to the success of the project. Table 2.1 provides a basic summary of the articles and Appendix A shows a more extensive summary described in the next sections.

Authors	Year	Country	Main result
McDonough III	1990	United Kingdom	Project success is affected by the project leader and this relation is mediated by type of project.
Dvir et al.	2006	Israel	Projects are more successful when managed by managers whose personality matches the projects' profile.
Storm and Vuijk	2008	Netherlands	Competencies successful in one project type do not have to be successful in another type. The PrDA-model shows which competencies are successful for four different project types.
Müller and Turner	2007a	Worldwide	The project manager's leadership style influences project success and different leadership styles are appropriate for different project types.

Table 2.1: Four articles about the match between project leader and project type

2.2.1 McDonough III (1990)

2.2.1.1 Research setting

McDonough III (1990) performed research with the help of 41 project leaders of NPD (New Product Development) projects in 13 British firms. The project leader was characterized by its cognitive style (problem solving style), career orientation, and background characteristics. The type of project was determined by asking the project leader, who could choose applications engineering, a clever combination of mature technologies, applying state-of-the-art technology, a minor extension of the state-of-the-art technology, a major extension of the state-of-the-art technology, or development or application of new technology. Project success was measured by asking the R&D manager about the schedule, budget, cost, and innovativeness of the project.

2.2.1.2 Results

The results showed that the project leader's characteristics influence project success, which relation is mediated by the type of project. In particular, new technology projects were positively influenced by the bisociative problem solving style and the academic degree, and negatively influenced by the associative problem solving style. Applications projects were negatively influenced by years in the company and age. Minor modification projects were positively

Type of project	New technology	Applications	Minor modification
Problem solving style	Bisociative (+) Associative (-)		
Career orientation			Local (-)
Education	Academic degree (+)		
Experience		Years with the company (-) Age (-)	Years in present position (+) Age (+)

Table 2.2: Summary results study McDonough III (after McDonough III, 1990)

influenced by years in the present position and age, and negatively influenced by a local career orientation (see Table 2.2).

2.2.1.3 Relevance

This research provides relevant information for the current study, because it shows that the instrument, used to determine project leader type, has little items significantly related to the project types. Therefore it is not useful to use the same instruments for the current study.

2.2.2 Dvir et al. (2006)

After the research of McDonough III (1990) the relation between the three variables, project leader, project type, and project success, was not studied for a long period.

Researchers were establishing the best ways to determine the project leader's characteristics, the project type, and/or project success factors/criteria. It took more then 15 years before the variables were combined again.

Dvir et al. (2006) were the first ones studying the combination again.

2.2.2.1 Research setting

Previous to this study, two instruments were developed; an instrument to assess project success (Dvir et al., 1993) and a project typing instrument. Project success was measured based on the four items meeting design goals, benefit to the end-user, benefit to the developing organization, and benefit to the community and national infrastructure. Project categories were
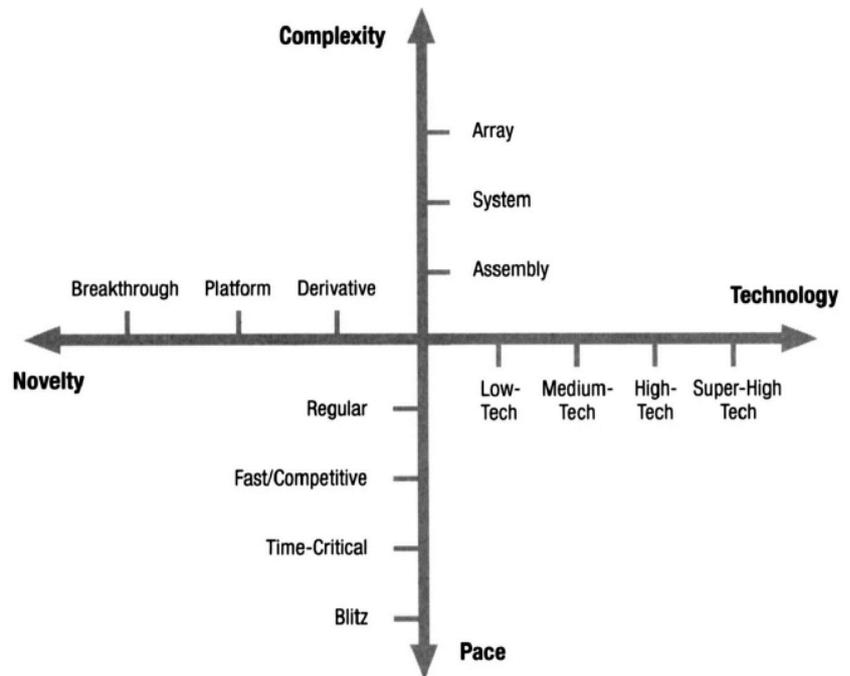
Figure 2.1: NCTP framework (Dvir et al., 2006, p. 38)

determined with the help of the NCTP (novelty, complexity, technical uncertainty, pace) framework (see Figure 2.1) (Shenhar and Dvir, 2007).

In the study the project leader was typed with help of assumed logical types for the four project categorization axes (Dvir et al., 2006). These types were chosen from different existing instruments. Novelty was linked to openness to experience (one of the big five). Complexity was linked to Jung's (1990, in Dvir et al., 2006) inventor type and Holland's (1997, in Dvir et al., 2006) investigative and enterprising types. Uncertainty was linked with risk-taking tendency (Dvir et al., 2006). Pace was linked to type A behaviour pattern, which is a person who feels time is limited (Friedman and Rosenman, 1974 and Rosenman, 1993 in Dvir et al., 2006). Furthermore two overall measures were used; personality traits that were found relevant for successful managers (e.g. commitment, and involvement) and the attachment style of the project leader.

The data was gathered in Israel.

2.2.2.2 Results

The results of this study show that to be successful different projects should be managed with different project leader characteristics. Table 2.3 shows the specific relationships found by Dvir et al. (2006). For high-tech projects it helps to be highly perceiving (one of the characteristics of an inventor), not being open for experiences, and not being a rebellious dreamer (not defined by Dvir et al., 2006). For derivative projects it is the other way around and platform projects are in between these two extremes.

Related to the success factors, type A characteristics negatively influence the efficiency in high-tech projects. Entrepreneurial characteristics on the other hand have a positive influence on the creation of new opportunities in platform projects. In derivative projects both the investigative personality and the anxious-ambivalent attachment style negatively influence the customer satisfaction (see Table 2.3).

Type of project	High-tech	Platform	Derivative
Perceiving	High	In between	Low
Openness to experiences	Low	In between	High
Rebellious dreamer	Low	In between	High
Success factors			
Efficiency	Type A (-)		
Customer satisfaction			Investigative (-) Anxious-ambivalent (-)
Creating new opportunities		Entrepreneur (+)	

Table 2.3: Significant relationships study Dvir et al. (2006)

2.2.2.3 Relevance

The reason not to redo the study of Dvir et al. (2006) in another setting is the reliability of the project leader typing instrument. The instrument used is created out of different available instruments. The items selected from these instruments are assumed to be logical characteristics for the project categorization dimensions. This has a large effect on the reliability of the study results.

2.2.3 Storm and Vuijk (2008)

Evatisyan and Vuijk (2006, in Storm and Vuijk, 2008) performed a study which shows that the project leader has an influence on project success and that successful project leader types differ per project type.

2.2.3.1 Research setting

For this study, the data was gathered in the Netherlands. The project leader's competencies are determined with help of the RDA-model. The project types are the four types from the project categorization model the goals-and-methods matrix (Turner and Cochrane, 1993). These project types are air, fire, water, and earth projects. Success is

defined as the extent to which the actual result is the same as the planned result as perceived by the sponsor (Vuijk, 2005).

2.2.3.2 Results

Figure 2.2 presents the results of this study. It shows that air projects need stimulating, creative, interested, and amiable project leaders. Fire project are in need of diplomatic, self-aware, independent, and autonomous leaders. Water projects need cooperative, cohesive, loyal, and dedicated project leaders. Earth project are in need of pragmatic, realistic, steady, and organizing project leaders.
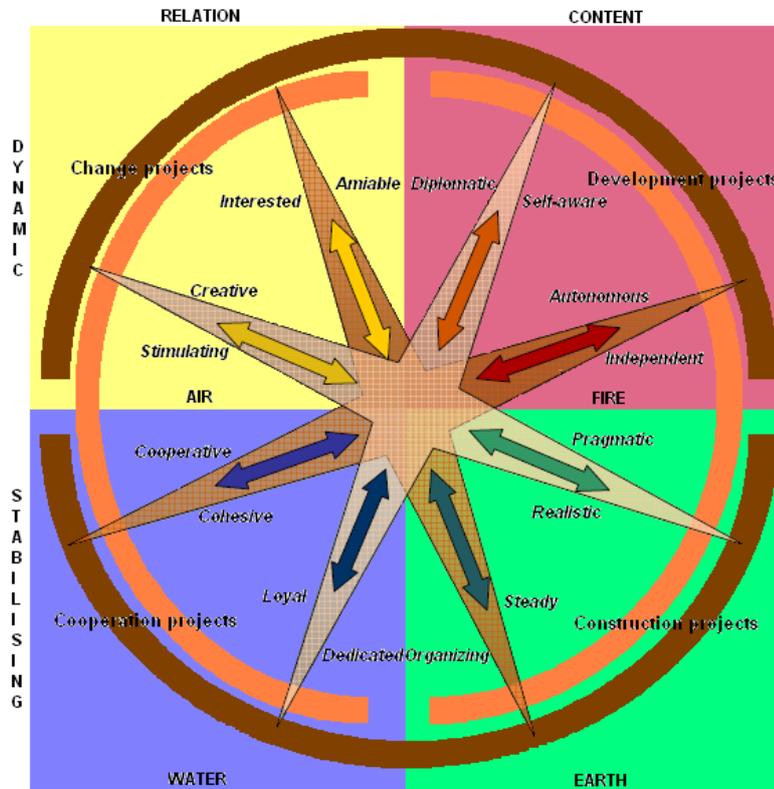
Figure 2.2: PrDA-model (After Storm and Vuijk, 2008, p. 35)

2.2.3.3 Relevance

Although this study looks like an interesting one to repeat, there are some arguments why it is chosen not to. The goals-and-methods matrix neglects a large amount of categorical issues for projects. It is believed that a more precise project categorization instrument will provide more viable results. Also, there is no strong base in literature for the RDA-model. Therefore, the choice is made not to redo this study in another setting.

2.2.4 Müller and Turner (2007a)

2.2.4.1 Research setting

The most recent study combining the three variables is from Müller and Turner (2007a). In their research the project leader is characterized by leadership competencies. These are emotional (EQ), managerial (MQ), and intellectual competencies (IQ). Projects are categorized by using six of the 14 attributes from Crawford et al. (2005/2006). The six

used attributes are application area, complexity, life-cycle stage, strategic importance, culture, and contract type (Müller and Turner, 2007a). The success criteria used were, meet project's overall performance (functionality, budget, and time), meet user requirements, meet project's purpose, client satisfaction with the project results, reoccurring business with the client, end-user satisfaction with the project's product or service, suppliers' satisfaction, project team's satisfaction, other stakeholders' satisfaction, meet the respondent's self-defined success factors, and sponsor satisfaction. A questionnaire was sent out to members of project management associations all over the world.

2.2.4.2 Results

The results show that project success is influenced by the project manager's leadership style and different project types need different leadership styles. As can be seen in Table 2.4 the study also shows that EQ is almost always contributing to success, MQ sometimes, and IQ almost never. More specifically, motivation, conscientiousness, sensitivity, and communication are the main contributors to success. This implies that EQ is most important for project managers. A major advantage of this study is that the results are worldwide applicable on different types of projects.

	All	Complexity			Importance			Contract			Phase					Culture	
		Lo	Me	Hi	Ma	Rp	Rn	FP	Rm	Al	F	D	Ex	CO	Cm	Hm	ExP
Emotional																	
Motivation						P									P	P	
Conscientiousness	P											P	P	P	P		
Sensitivity	P			P				P							P		
Influence									P								
Self-awareness							P										
Emotional resilience			P														
Intuitiveness																	
Managerial																	
Managing resources												P				P	
Communication	P		P				P	P	P		P	P	P	P			
Developing																	
Empowering																	
Achieving																	
Intellectual																	
Strategic perspective	N											N	N		N	N	
Vision																	
Critical thinking																	

Table 2.4: Summary significant results Müller and Turner (high performing projects only); index in Table 2.5 (after Müller and Turner, 2007a)

Müller and Turner (2007a) have exploited the advantage of using different project types. Though, it is not chosen to duplicate this study. The reason is that the leadership competency EQ seems to be most relevant for a successful project. This means that this part is most interesting to study.

P	Positive relation
N	Negative relation
Lo	Low
Me	Medium
Hi	High
Ma	Mandatory
Rp	Repositioning
Rn	Renewal
FP	Fixed price
Rm	Remeasurement
Al	Alliance
F	Feasibility
D	Design
Ex	Execution
CO	Close-out
Cm	Commissioning
Hm	Host
Exp	Expatriate

Table 2.5: Index Table 2.4

2.3 Methodology analysis

The four studies all show different ways of studying the issue. Though, each method has its weaknesses. Therefore it is chosen to learn from the studies and choose a different research model. This paragraph shows a detailed analysis of the similarities and differences of the methods. This leads to a conclusion of which method is best. Appendix B shows tables comparing the project leader typing and project categorization instruments. These tables are summarized in Table 2.6 and Table 2.7.

2.3.1 Project leader type

McDonough III (1990)	Dvir et al. (2006)	Storm and Vuijk (2008)	Müller and Turner (2007a)
Cognitive style	Openness to experience	Dynamic vs. Stable	
Career orientation	Personality traits		
Demographic characteristics			
	Inventor		
	Investigative and enterprising		
	Risk-taking tendency		
	Type A behavior pattern		
	Attachment styles		
		Relation oriented	Emotional competencies (EQ)
		Content oriented	Managerial competencies (MQ)
			Intellectual competencies (IQ)

Table 2.6: Summary project leader typing instruments (The same row in the table shows that the issues have the same characteristics)

Looking at the project leader typing instruments, little overlap can be found. Seven of the eleven attributes are not used in one of the other instruments. This is mainly caused by the different sources of project leader typing instruments. Dvir et al. (2006) used assumed logical project leader types for the different project categories. Müller and Turner (2007a) on the other hand used a leadership competencies approach.

Alternatively McDonough III (1990) was focused on the project leader's cognitive (problem solving) style. Storm and Vuijk (2008) used an instrument concentrating on mapping the behaviour and values of a person (Bijlage: Uitleg werking RDA-model).

The diversification is not the only problem for the instruments. Looking at the results of the studies, little significant relations were found. In the study of McDonough III (1990) only a few project leader characteristics were significant. For Müller and Turner (2007a) and Dvir et al. (2006) this was little different. Storm and Vuijk (2008) did find more relevant project leader characteristics, but the RDA-model lacks a base in research.

A main lesson learned though comes from Müller and Turner (2007a). They discovered that EQ has the largest influence on project success. EQ exists of a list of personality factors meaning that EQ is de personality of the project leader. For this reason it is chosen to make a selection of personality typing instruments. This choice will be discussed in paragraph 2.4.

2.3.2 Project categorization

McDonough III (1990)	Dvir et al. (2006)	Storm and Vuijk (2008)	Müller and Turner (2007a)
	Novelty	Product Breakdown Structure (PBS) = goal definition	Strategic importance
	Complexity		Complexity
Classifications within this category	Technical uncertainty		Strategic importance
	Pace		
		Work Breakdown Structure (WBS) = methods definition	Life cycle
			Application area
			Culture
			Contract type

Table 2.7: Summary project categorization instruments

In the instruments to categorize projects more overlap can be found than for the project leader typing instruments. Though, a remarkable difference is the level of detail in the instruments. McDonough III (1990) used a categorization system within the uncertainty attribute of Dvir et al. (2006). The other three use a categorization system with attributes and categories, which makes the result more generalizable. McDonough's III (1990) instrument is therefore not useful. Storm and Vuijk (2008) use a categorization instrument resulting in four project types, neglecting lots of the categorical issues. This instrument is therefore not useful either.

Dvir et al. (2006) and Müller and Turner (2007a) use more or less similar instruments. The instrument of Müller and Turner (2007a) comprehends three of the four attributes used by Dvir et al. (2006). When taking a look at the instrument used by Müller and Turner (2007a) more explicitly, it is seen that this instrument can be extended, also with

an attribute like the pace attribute (Crawford et al., 2005/2006). The instrument used by Müller and Turner (2007a) seems to be the most complete and should therefore be considered in the instrument selection. Though, the search for best instrument should be expanded to more. These are considered in paragraph 2.5.

2.3.3 Project success

In three of the four articles reviewed, the match between project leader and project type in relation to the success of the project is studied. To assess the success of the project, success criteria are used. These criteria can only be measured after finalizing a project. In the current research it is chosen to review unfinished projects. Therefore looking at success criteria is not useful. Paragraph 2.6 discusses how project's progress is analyzed.

2.3.4 Research model

The analysis of the four studies does not provide one clear research model. It is concluded that none of the project leader typing instruments can be used. Therefore this subject will be studied further in paragraph 2.4. One project categorization instrument seemed relevant. This one will be included in a more extensive study in paragraph 2.5. Paragraph 2.6 will provide an instrument to analyze project's progress. The conclusions of these three paragraphs lead to the final research model.

2.4 Project leader type

In paragraph 2.3.1 it is concluded that none of the project leader typing instruments used by the four studies discussed in paragraph 2.2 is sufficient for the current research. The analysis has shown though, that EQ is the most relevant competency of the project leader (Müller and Turner, 2007a). EQ is seen as the personality of a person and therefore this paragraph will focus on personality typing instruments.

An extensive list of personality typing instruments is available in the literature. The instruments discussed here are a few of the most used in research. Although some main instruments are described, this list is not comprehensive. There are much more available.

2.4.1 Personality typing instruments

The best known and most trusted instrument is the MBTI (Myers-Briggs Type Indicator) (Capraro and Capraro, 2002) created by Katharine Briggs and Isabel Myers (Van der Linden, 2005, myersbriggs.org). This instrument uses four categories to determine the behavioural type of a person. These categories are composed out of two opposing items, which creates a 4x4 matrix with 16 behavioural types. The four categories are:

Extroversion (E) vs. Introversion (I): This category describes the source of energy and type of attitude. An extrovert person gets its energy from the outside world and is

focussed on the environment. An introvert person gets its energy internally and is more focussed on own ideas and reflection.

Sensing (S) vs. iNtuition (N): The second category is about how the person gathers information. A sensing person gathers tangible and concrete information which can be sensed by the five senses. A person relying on intuition is more interested in abstract and theoretical information. A broader perspective is used than only tangible information.

Thinking (T) vs. Feeling (F): This third category shows how decision making takes place. Thinking deals with rational choices based on a cause and effect reasoning. Feeling is about making decisions based on the emotional value.

Judging (J) vs. Perception (P): The fourth category reveals how a person acts. A judging person prefers to follow a plan. A perceiving person acts without planning and lets it depend on the development of situations.

Another instrument is the 16 personality factor (16PF) questionnaire. This questionnaire is developed after years of research by Cattell (1947, 1948, 1956). The combination of the 16 factors presents an in-depth assessment of the person evaluated (Cattell and Mead, 2008). To gain a more global overview of a person, the global scales were developed. These global scales are an adaptation of the Big five instrument (see below). Table 2.8 shows the 16 personality factors, the global scales, and its descriptors.

Descriptors of low range	Primary scales	Descriptors of high range
Reserved, impersonal, distant	Warmth (A)	Warm-hearted, caring, attentive to others
Concrete, lower mental capacity	Reasoning (B)	Abstract, bright, fast-learner
Reactive, affected by feelings	Emotional stability (C)	Emotionally stable, adaptive, mature
Deferential, cooperative, avoids conflict	Dominance (E)	Dominant, forceful, assertive
Serious, restrained, careful	Liveliness (F)	Enthusiastic, animated, spontaneous
Expedient, nonconforming	Rule-consciousness (G)	Rule-conscious, dutiful
Shy, timid, threat-sensitive	Social boldness (H)	Socially bold, venturesome, thick-skinned
Tough, objective, unsentimental	Sensitivity (I)	Sensitive, aesthetic, tender-minded
Trusting, unsuspecting, accepting	Vigilance (L)	Vigilant, suspicious, sceptical, wary
Practical, grounded, down-to-earth	Abstractedness (M)	Abstracted, imaginative, idea-oriented
Forthright, genuine, artless	Privateness (N)	Private, discreet, non-disclosing
Self-assured, unworried, complacent	Apprehension (O)	Apprehensive, self-doubting, worried
Traditional, attached to familiar	Openness to change (Q1)	Open to change, experimenting
Group-oriented, affiliative	Self-reliance (Q2)	Self-reliant, solitary, individualistic
Tolerates disorder, unexacting, flexible	Perfectionism (Q3)	Perfectionistic, organized, self-disciplined
Relaxed, placid, patient	Tension (Q4)	Tense, high energy, driven
Global scales		
Introverted, socially inhibited	Extraversion	Extraverted, socially participating
Low anxiety, imperturbable	Anxiety neuroticism	High anxiety, perturbable
Receptive, open-minded, intuitive	Tough-mindedness	Tough-minded, resolute, unempathic
Accommodating, agreeable, selfless	Independence	Independent, persuasive, wilful
Unrestrained, follows urges	Self-control	Self-controlled, inhibits urges

Table 2.8: 16 PF scales and descriptors (after Cattell and Mead, 2008)

Recent studies have made use of the 16PF questionnaire. Though, other studies have only used a few of the factors with the addition of some other factors. These combinations result from debates about the accurateness of the 16 PF.

The Big five or the five factor model (Digman, 1990, Van der Linden, 2005, Aronson et al., 2006) has taken multiple forms over the years. Lots of authors have discussed the instrument and have given de five factors multiple names. Also, some authors have adapted the instrument. Eysenck (1991) for example has created the PEN system which leaves out one of the five factors and combines two other factors which creates a three factor model. A summary of the multiple forms the instrument has taken till 1990 is displayed in Appendix B.

Now-a-days the Big five are extroversion, agreeableness, conscientiousness, emotional stability, and openness to experience (Van der Linden, 2005, personalityresearch.org). These factors can be explained as:

Extroversion: The level to which a person feels at comfort with other people, is social, assertive and communicative.

Agreeableness: The level to which a person can be trusted by others, is willing and good natured.

Conscientiousness: The level to which a person is goal oriented, responsible, and vigorous.

Emotional stability: The level to which a person is calm and self-secured or tense, nervous, sad, and insecure.

Openness to experience: The level to which a person is willing to look at new ideas, has interests in different things, is creative, and artistic.

An instrument developed by Belbin in the 1970s is the Belbin team role theory (belbin.com). This theory suggests that a team needs team members with different roles to be able to function well; balance is the key. A team role is defined as: 'a tendency to behave, contribute and interrelate with others in a particular way' (belbin.com/rte.asp?id=8). The different team roles that were discovered by Belbin are:

Plant: A creative person who is always trying to solve problems in unconventional ways.

Monitor evaluator: A person who thinks before acting; he tries to help the team make thought-through, objective decisions.

Coordinator: A person who keeps the overview; he keeps the whole team going in the same direction and when necessary delegates team members to do a certain job.

Resource investigator: A person who is always trying to gather new information and makes sure the team's product does not get isolated.

Implementer: A person who makes sure a decision is executed; he makes the practical plan to carry out the task as efficiently as possible.

Completer finisher: A person who is most useful when finalizing a task; he tries to make everything perfect and is always searching for errors to get the best quality possible.

Team worker: A person who is always trying to create the best atmosphere; he tries to help team members where necessary, to help the team complete the task.

Shaper: A person who is always pushing the team to go forward; he is focused on the result, not on the process.

Specialist: A person with in-depth knowledge about the key subject.

This last team role became visible after the research was completed. The teams studied had to complete a task that needed no prior knowledge, but in the 'real world' a specialist appeared to be another essential team role.

An instrument focusing on the preferred work environment of people is the RIASEC instrument of Holland (1996). The name RIASEC represents the six attributes of the instrument; realistic, investigative, artistic, social, enterprising, and conventional. These types all have different occupational preferences and therefore need a different set of competencies. These occupational preferences and necessary competencies are:

Realistic: These persons prefer concrete practical activities for which they need manual and mechanical competencies.

Investigative: These persons prefer analytical or intellectual activities aimed at trouble-shooting and use of knowledge; this asks for analytical, technical, scientific, and verbal competencies.

Artistic: These persons prefer creative work or unstructured intellectual endeavors which requests innovative or creative ability and emotionally expressive interactions.

Social: These persons prefer working with and helping others for which they need interpersonal competencies and skills in mentoring, treating, healing, or teaching.

Enterprising: These persons prefer selling to, leading, manipulating others to attain goals; therefore they need persuasive and manipulative skills.

Conventional: These persons prefer working with things, numbers, or machines to meet predictable demands or standards; they are in need of clerical skills and skills in meeting precise performance standards.

2.4.2 Selected project leader personality typing instrument

To make a thought-through decision about which instrument to use in the current study, a comparison between the described instruments is made. The first difference that appears is the difference in detail. Where Belbin and RIASEC bundle personality factors

into types of persons, MBTI, 16PF and the Big five define each personality factor separately. This increases the level of detail.

It is chosen to use an instrument based on personality factors instead of bundles of factors. The possibility exists that a project leader should have for example some factors from an artistic person and some from a social person to be successful. When using an instrument bundling the factors it is not possible to see what factors are necessary and which are redundant. Making use of an instrument based on separate factors, it is possible to see these separate relations. This leaves the MBTI, 16PF and Big five for discussion.

The global scales resulting from the 16PF questionnaire together with the 16 personality factors are an adaption of the Big five. This implies that the Big five instrument is included in the 16PF questionnaire. For this reason, the separate Big five instrument is not chosen.

The most important difference between MBTI and 16PF is that the MBTI instrument compares in total eight personality factors, while the 16PF questionnaire compares 16 with an addition of five global scales. This shows that the 16PF questionnaire is much more detailed than MBTI. Analysis of Conn and Rieke (1994) showed that correlations exist between the 16PF and the global scales with the MBTI factors. This shows that the MBTI factors are included in the 16PF and global scales. Though, not all of the 16PF are included in the MBTI. For this reason it is chosen to use the 16PF questionnaire, including the global factors in the current study.

2.5   Project categorization

Two basic project types are selected for this study; fixed deliverable and experimental projects (see paragraph 1.2). Nevertheless, project categorization instruments will be used as a control system to determine the level of similarity of the projects within the two project types. Therefore this paragraph discusses project categorization. As the conclusion of paragraph 2.3.2 shows, next to the instrument used by Müller and Turner (2007a) more project categorization instruments should be discussed. Though, before the start of this discussion, the difference between categorization and classification should be clear.

2.5.1   Categorization vs. classification

The project management literature shows that researchers discuss the categorization of projects. One item, on which an agreement is reached, is that projects should be categorized, not classified (Archibald, 2004/2005, Crawford et al., 2005/2006). The

difference between classification and categorization is best explained by Jacob (1991, in Crawford et al., 2005, pp. 5-6):

"Classification entails a *one-for-one* slotting of objects, events, or properties, based upon the apperception of a core of necessary and sufficient characteristics, into *mutually exclusive classes* within the hierarchical structure imposed by an arbitrary and predetermined ordering of reality. Categorization, on the other hand, refers to the process of dividing the world of experience into groups – or categories – whose members bear some perceived relation of similarity to each other. In contrast to the process of classification, the process of categorization entails neither that membership within a category is determined by the apprehension of a set of definitive characteristics nor that inclusion within one category prohibits membership within another category."

As the statement of Jacob (1991, in Crawford et al., 2005, pp. 5-6) shows, categories are a higher level of project division. This does not say that the classifications used for different categories are always the same. Different classification systems can be used to classify projects within categories. Because projects are not clear, rigid objects, it is tough to classify them in exclusive classes. To overcome this problem, projects are categorized, which is a much more flexible process, including managerial judgment and perception (Crawford et al., 2005).

2.5.2 Categorization instruments

In the dialogue about project categorization, a lot of different instruments are discussed. These instruments are sometimes explicitly reviewed in a separate study, but often shortly discussed and applied in a study about project management. This section describes some additional categorization instruments to the one used by Müller and Turner (2007a). This last instrument is discussed in full, because Müller and Turner (2007a) did not use the complete instrument.

Surely both in theory and in practice more different instruments are used, so this list is not exhaustive.
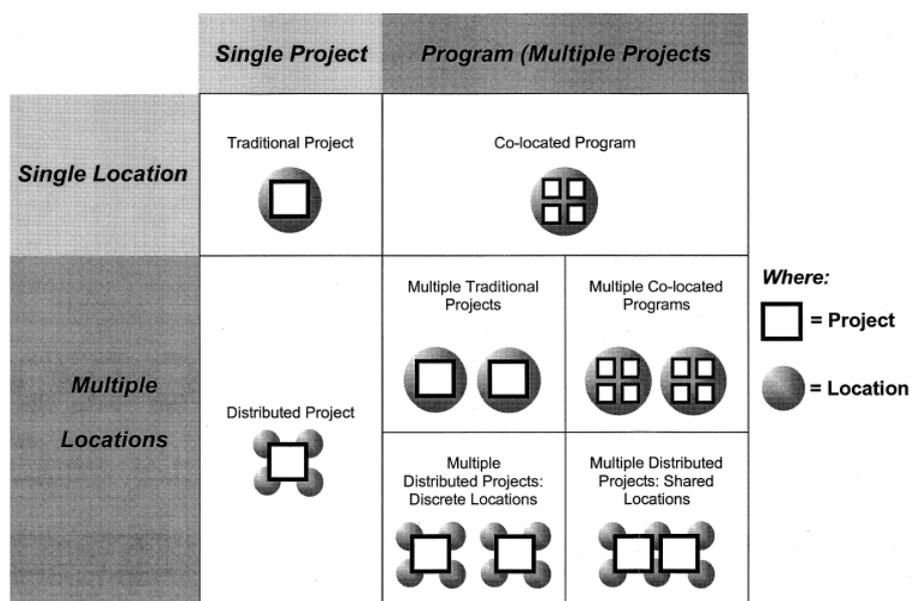
Figure 2.3: Project categorization instrument (Evaristo and Fenema, van, 1999, p. 277)

Meredith and Mantel Jr. (1989) describe in their book a categorization based on the reasons to start a project. This categorization leads to five categories; sacred cow, operating necessity, competitive necessity, product line extension, and comparative benefit model. Other categorizations suggested by Youker (1999, in Archibald, 2004) are geographical location, industrial sector (affirmed by Lock, 1996), stage of project life cycle, and product of the project (affirmed by McDonough III, 1990). These items are seen in different combinations in different instruments. The instrument of Evaristo and van Fenema (1999) for example includes the geographical location item in combination with the amount of projects on these locations (Figure 2.3). This instrument opposes single location and multiple locations to single project and multiple projects (program). In the quadrant multiple locations vs. multiple projects, four project types can be found. In total this results in seven project types. An important issue is that this instrument can be described as focused on program management (managing multiple projects at the same time). In the literature program management is usually separated from project management because the two differ too much (Buuren, van et al., 2010).

Müller and Turner (2007a) use six of the 14 attributes of the instrument of Crawford et al. (2005/2006). The complete instrument is discussed here. Crawford et al. (2005/2006) took the step suggested by many; they combined available categorization instruments and empirical evidence into an instrument containing 14 attributes to categorize projects. These attributes are displayed in Figure 2.4. All attributes can be split up in different combinations of detailed categories. Project timing for example can be divided by means of project duration (e.g. months/years) or pace of the project (e.g. regular, fast competitive, blitz-critical).
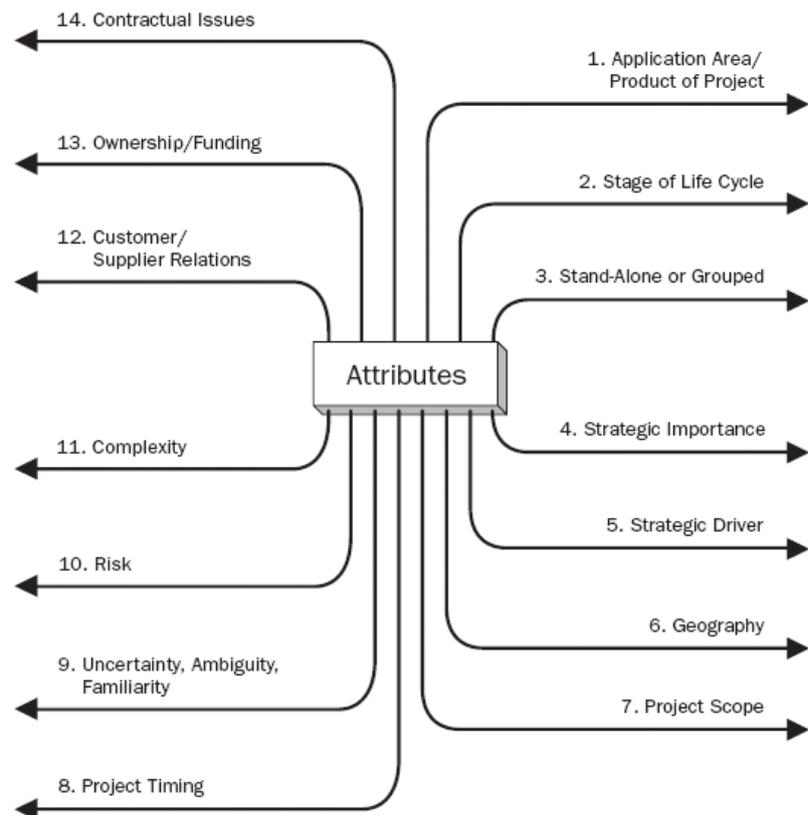
Figure 2.4: 14 attributes (Crawford et al., 2006, p. 49)

It is suggested that the attributes used to categorize projects should be chosen with the purpose of categorizing in mind. Some organizational purposes for categorization suggested are strategic alignment, capability specialization and promoting a project approach. Research shows that the number of attributes used in categorization instruments is most often five (Crawford et al., 2006). This suggests that at least five attributes should be chosen to have a satisfying categorization method.

2.5.3 Selected project categorization instrument

Earlier analysis, in paragraph 2.3.2, showed that the instrument used by Müller and Turner (2007a) covered all attributes used in the other studies. Therefore the conclusion is drawn that this instrument is most specific. This instrument is compared to the ones discussed above. This comparison showed some more interesting differences and similarities. As can be seen in Appendix D, the only item not covered by Crawford et al. (2005/2006) is the culture item of Müller and Turner (2007a). Furthermore, several items seem to be less relevant than others, because they are only used by one instrument (yellow shaded). Erasing these items, Table 2.9 is created.

Müller & Turner	Crawford et al.	Evaristo & Fenema, van	Youker	Meredith & Mantel Jr.
Strategic importance	Strategic importance	-	-	Reason to start the project
Complexity	Complexity	-	-	-
Strategic importance	Uncertainty, ambiguity, familiarity	-	-	-
Life cycle	Stage of life cycle	-	Stage of project life cycle	-
Application Area	Application area/product of project	-	Industrial sector	-
			Product of the project	
Contract type	Contractual issues	-	-	-
-	Stand alone or grouped	Single project or program	-	-
-	Geography	Location	Geographical location	-

Table 2.9: Comparison main project categorization items

Looking at this table, the instrument of Crawford et al. (2005/2006) is the best. This was also the result of the earlier analysis. The instrument of Crawford et al. (2005/2006) contains all categorization items of other instruments. Therefore it is chosen to use this instrument in the current study, more specifically, the items mentioned in Table 2.9.

Before starting to compare the instruments, the attributes of Crawford et al. (2005/2006) were grouped in covering subjects (see Appendix D). Comparing this grouping with the chosen attributes, each group is represented by at least one attribute. This increases the reliability of the instrument.

To be able to determine the categorization of the attributes, another comparison is made (see Appendix D). In this table, the elements of the categorization items are compared. Many different divisions are present. The comparison leads to the choice of categorization items presented in Table 2.10.

Attributes	Categories				
Strategic importance	Business strategic	Business critical	Mandatory		
Complexity	High	Medium	Low		
Uncertainty, ambiguity, familiarity	Low-tech	Medium-tech	High-tech	Super-high tech	
Stage of life cycle	Feasibility	Design	Execution	Close-out	Commission
Application area	Engineering and construction	Information and telecommunications	Services	Industrial processes	
Contractual issues	Fixed price	Remeasurement	Alliance		
Stand alone or grouped	Small project	Large project	Program	Portfolio	
Geography	City or region	National	Europe	International	

Table 2.10: Project categorization instrument

Comparing this project categorization instrument to the research setting, it does not correspond. The goal of the categorization instrument is to check the level of similarity of the projects in the two main types, fixed deliverable and experimental. Therefore the main interest is in the attributes and categories where the differences within project type will be. The attributes and categories resulting from the literature study do not cover the main possible differences between these projects.

The instrument of Crawford et al. (2005/2006) includes more attributes than presented in Table 2.10, including the main possible differences. Therefore this model is used to select the attributes and categories representing the possible differences within project type. Table 2.11 presents the chosen attributes and categories per project type.

Attributes fixed goal	Categories					
Application area	District development	Repositioning	Replacement	Other		
Project timing	Project planning	Process planning	Global planning	No planning		
Stand alone or grouped	Stand alone	Grouped on the same location	Grouped on more locations			
Stage of life cycle	Feasibility	Design	Preparation	Implementation	Finalization	Hand over
Ownership/ funding	Community	Inhabitants	Participants	Public authorities	Contractor	Other
Contractual issues	Fixed price	Cost price	Alliance	Other		
Attributes experimental	**Categories**					
Geography	One location	Netherlands	Europe	International		
Project timing	Project planning	Process planning	Global planning	No planning		
Stand alone or grouped	Stand alone	Grouped on the same location	Grouped on more locations			
Stage of life cycle	Research	Feasibility	Development	Design	Other	
Ownership/ funding	No decisions	Project team	Internal	External	Internal and external	Other
Contractual issues	No budget	Budget of expenses	Budget of expenses and hours	Other		

Table 2.11: Project categorization instrument

To be even more sure about the similarity of the projects per project type, another instrument is used in addition to the instrument of Crawford et al. (2005/2006). This instrument is developed by a practitioner involved in the study to study the perception of project types in the project team. The basis of this instrument is the MBTI personality typing instrument. Two sets of personality factors are transformed into project categories (see Figure 2.5). These sets are sensing vs. intuition and thinking vs. feeling. These resulted in the four project categories stable, dynamic, content oriented and people oriented. To determine which project category is applicable, a list with statements is created (see Appendix F). Each set of statements should get a total of five points. After a calculation, each project category receives a certain amount of points. The higher the number, the more the project belongs to that specific category.
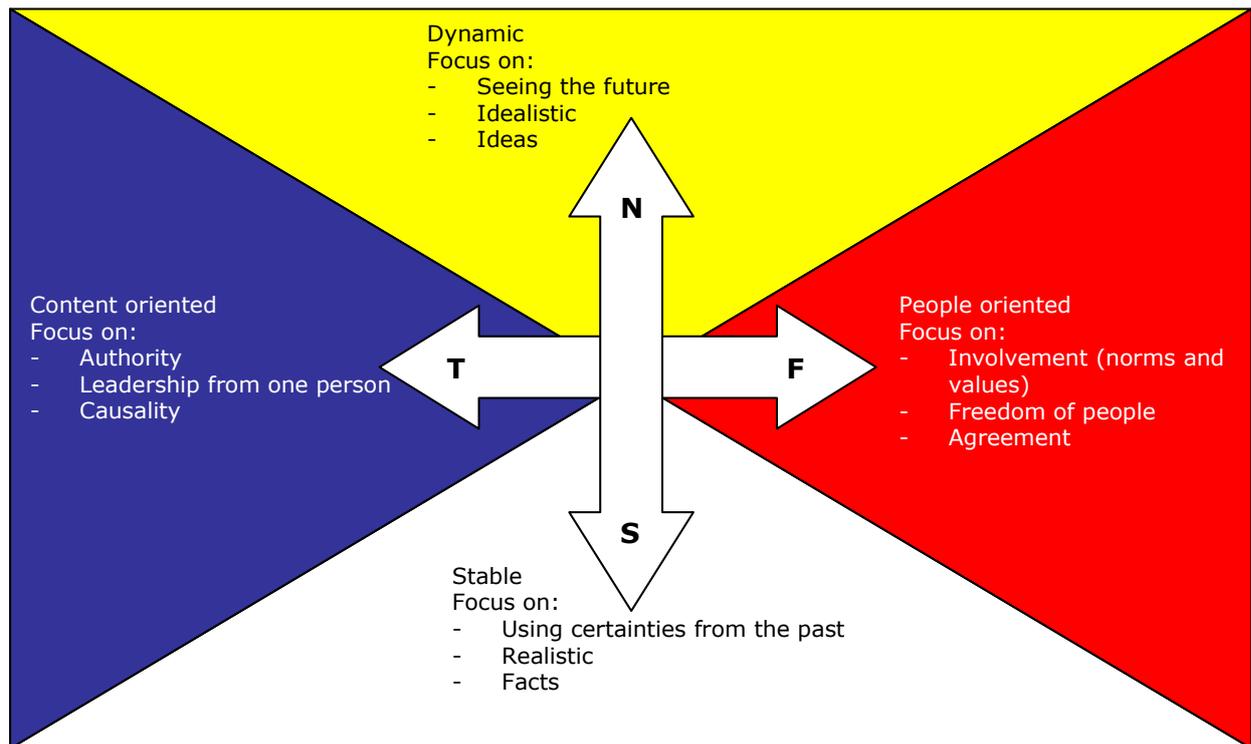
Figure 2.5: Creation of the four project attributes from the MBTI
(N = intuition, S = sensing, T = thinking, F = feeling)

2.6 Project's progress

As stated in paragraph 2.3.3 the projects reviewed in this research are still ongoing. This makes it impossible to make an objective analysis of several success criteria. This paragraph describes what will be used to analyze the project's progress in the current research. Because not one opinion is objective enough to be the truth, the issue of peer reviewing is discussed first. This method can be used to increase objectivity of a statement. After that, success factors will be discussed.

2.6.1 Peer reviewing

Peer reviewing is created to evaluate performance, or the quality of work. This evaluation is done by other people than the writer, working in the same field with the intention of sustaining or increasing the quality (businessdictionary.com, linfo.org). In social science the method involves all methods were human judgment is used for evaluation (Goedegebuure et al., 1990). These judgments can be more and less objective. There are no strict rules about who should be peers and who should not. Sometimes peers are seen as persons with the same reputation as the person being reviewed, but sometimes the method is used more broadly. Though, it is important that peers are independent of each other and of the person whose work is being reviewed (linfo.org).

The method of peer reviewing has some advantages and disadvantages. The main advantages are a high content validity and a high flexibility. The content validity is high,

because this method is the only way to assess quality directly. The flexibility is high, because the method can be applied in many settings. The main disadvantage is the subjectivity. Only opinions of peers are reviewed. This level of subjectivity can be decreased by using a large range of peers. This is the basis of the method; "it is based on the concept that a larger and more diverse group of people will usually find more weaknesses and errors in a work or performance and will be able to make a more impartial evaluation of it than will just the person or group responsible for creating the work or performance" (linfo.org). Some other disadvantages of the method are the influence of background information of the peers on the opinions (Goedegebuure et al., 1990), the slow speed of the process (although, internet increases the speed), original works will hardly appear, and fraud is sometimes hard to detect (linfo.org).

In the current study, peer review will be used to asses project's progress. This implies that peers should be related to the project. To overcome the weakness of subjectivity, as much as possible peers will be reviewed. The disadvantage of a slow process is not applicable here, because the people do not have to read a work. Also original works and fraud disadvantages will not appear in this context. It is possible though, that the background characteristics of the peers will have an influence on the results of the reviews. It is tried to decrease this by asking peers in as well as around the project team. This involves team members, the project leader, the client, and project leader's supervisor.

2.6.2 Success factors vs. success criteria

As already stated, success criteria cannot be used to analyse project success in this case. What can be used though are success factors. To be clear about the definition of success factors, success criteria will also be explained.

Project success factors can be described as independent variables, while project success criteria are dependent variables (Müller and Turner, 2007b). This means that success factors are parts of the project which can be modified to increase the chance of success (Lim and Mohammed, 1999, Crawford, 2000, Müller and Turner, 2007b). Success criteria on the other hand are created to measure the success of a project. This means that success criteria can only be judged when a project is finalized; some of them even only after a few years. This is called summative evaluation. Evaluation in the current research on the other hand is formative. This is evaluation on decisions made during the course of action (Swanborn, 1987). This form of evaluation asks for the evaluation of success factors instead of success criteria.

To make a selection of which factors to use, the next paragraph discusses lists available in the literature. The number of lists is not exhaustive, but it gives a picture of the main success factors.

2.6.3 Success factors

The literature about project management has not yet reached an agreement about which are the success factors influencing project success. Different lists are available in the literature. An important list of project success factors developed during the 1980s is the list of Pinto and Slevin (1988, in Turner and Müller, 2005). They created a list of ten success factors (see Table 2.12). Later in the same year Pinto and Prescott (1988) proposed that 'personnel' is no success factor.

Success factor	Description
1. Project mission	Clearly defined goals and direction
2. Top management support	Resources, authority and power for implementation
3. Schedule and plans	Detailed specification of implementation
4. Client consultation	Communication with and consultation of all stakeholders
5. Personnel	Recruitment, selection and training of competent personnel
6. Technical tasks	Ability of the required technology and expertise
7. Client acceptance	Selling of the final product to the end users
8. Monitoring and feedback	Timely and comprehensive control
9. Communication	Provision of timely data to key players
10. Troubleshooting	Ability to handle unexpected problems

Table 2.12: Pinto and Slevin's success factors (1988, after Turner and Müller, 2005)

In the years following Pinto and Prescott (1988) research on success factors was slow. This is the reason why the table of Belassi and Tukel (1996), summarizing seven lists, does not entail information from that period (see Table 2.13).

Martin (1976)	Locke (1984)	Cleland and King (1983)	Sayles and Chandler (1971)	Baker et al. (1983)	Pinto and Slevin (1989)	Morris and Hough (1987)
Define goals	Make projects commitments known	Project summary	Project manager's competence	Clear goals	Top management support	Project objectives
Select project organizational philosophy	Project authority from the top	Operational concept	Scheduling	Goal commitment of project team	Client consultation	Technical uncertainty innovation
General management support	Appoint competent project manager	Top management support	Control systems and responsibilities	On-site project manager	Personnel recruitment	Politics
Organize and delegate authority	Set up communications and procedures	Financial support	Monitoring and feedback	Adequate funding to completion	Technical tasks	Community involvement
Select project team	Set up control mechanisms	Logistic requirements	Continuing involvement in the project	Adequate project team capability	Client acceptance	Schedule duration urgency
Allocate sufficient resources	Progress meetings	Facility support		Accurate initial cost estimates	Monitoring and feedback	Financial contract legal problems
Provide for control and information mechanisms		Market Intelligence		Minimum start-up difficulties	Communication	Implement problems
Require planning and review		Project schedule		Planning and control techniques	Trouble-shooting	
		Executive development and training		Task (vs. social) orientation	Characteristics of the project team leader	
		Manpower and organization		Absence of bureaucracy	Power and politics	
		Acquisition			Environmental events	
		Information and communication channels			Urgency	
		Project review				

Table 2.13: Seven author's success factors (after Belassi and Tukel, 1996)

In a study from Clarke (1999) four success factors were used which were found to be relevant for change projects. These success factors are:

- Communication throughout the project
- Clear objectives and scope
- Breaking the project into `bite sized chunks'
- Using project plans as working documents

The Standish Group International (2001) on the other hand identified ten success factors for projects. These are called the 'CHAOS ten'. This list (see Table 2.14) is ordered on importance for project success. The first is most important and the last least.

Chaos ten
Executive support
User involvement
Experienced project manager
Clear business objectives
Minimized scope
Standard software infrastructure
Firm basic requirements
Formal methodology
Reliable estimates
Other

Table 2.14: CHAOS ten (after The Standish Group International, 2001)

A research by White and Fortune (2002) also resulted in a list of success factors. This list was a product from a survey research of 236 project managers in multiple industries, working on multiple types of projects. For that reason this list is very useful to generalize. Table 2.15 shows the success factors found in this study.

For a research Westerveld (2003) summarized four studies resulting in success factors. This information is summarized in Table 2.16. In this table the factors are combined in different areas. This shows that some agreement on factors is present in the different lists of success factors.

Success factors
Clear goals/objectives
Realistic schedule
Support from senior management
Adequate funds/resources
End user commitment
Clear communication channels
Effective leadership/conflict resolution
Effective monitoring and feedback
Flexible approach to change
Taking account of past experience
Recognizing complexity
Taking account of external influences
Effective team building/motivation
Effective management of risk
Training provision
Contextual awareness
Provision of planning and control systems
Appreciating the effect of human error
Considering multiple views of project
Having access to innovative/talented people
Other factor(s)
Having relevant past experience
Support from stakeholder(s)/champion(s)
Having a clear project boundary

Table 2.15: Success factors (after White and Fortune, 2002)

Result area	Morris and Hough (1987)	Mumns and Bjeirmi (1996)	Belassi and Tukel (1996)	Pinto and Slevin (1989)
Leadership and team	Human factors	Human parties	Use of managerial skills	Personnel recruitment Trouble shooting
Policy and strategy	Project definition		Control and monitoring	
Stakeholder management	Politics and social factors	Relations with the client Politics		Client consultation Communication Power and politics
Resources	Finance		Use of technology Preliminary estimates	
Contracting	Legal agreements	Legal agreements Contracting		
Project management	Scheduling, design	Project administration Efficiency	Scheduling	Technical tasks Monitoring and feedback
Success criteria		Profit		Client acceptance
External factors	Schedule urgency Schedule duration	Objectives	Factors related to project manager Project team members Factors related to project Factors related to organization Availability of resources External environment	Top management support Characteristics of project manager Environment events Urgency

Table 2.16: Research on critical success factors (after Westerveld, 2003)

Another list of success factors is provided by Melosevic and Patanakul (2005). They created this list with the help of a literature study. This list of success factors entails:

- Project management process
- Project organization
- Information management system
- Project management tools
- Project management metrics
- Project culture
- Project leadership

Their research suggests that the standardization of these elements will help assuring project success.

2.6.4 Selected success factors

To analyze the progress of the project success factors will be used, but which should be used. A comparison between the success factor lists showed that many of the lists were in content the same. Though, some of the factors were only used in one, two, or three lists. This showed that these factors are not as relevant as other factors and therefore they were left out of consideration. Two of the lists covered almost all of the factors mentioned by more than three instruments. These lists were the one from White and Fortune (2002) and the combination of the two lists of Pinto and Slevin (1988/1989). Because these lists clearly cover the most relevant success factors described in the literature, these were compared to each other (see Appendix G). This comparison led to too many success factors to question team members. Therefore it was chosen to make a selection from this list. This selection was made with the help of Table 2.13 from Belassi and Tukel (1996) in combination with the Chaos ten (Table 2.14). The factors that were present in at least three of these lists were selected as main critical success factors. Effective teambuilding/motivation was added, because, next to the other ones selected, in the comparison this factor was indentified the most. These main factors were used for the questionnaires and are presented in Table 2.17.

Critical success factors
Project mission (Clear goals and objectives)
Top management support
Power and politics
Schedule and plans
Provision of planning and control systems (planning is made and controlled)
Client consultation
Personnel recruitment
Technical tasks
Monitoring and feedback
Communication
Characteristics of the project team leader
Effective team building/motivation

Table 2.17: Final list of critical success factors

3 RESEARCH

Paragraph 1.2 discusses the preliminary research model. After the literature study in chapter 2, a final research model is created. This research model and the methodology to study it are discussed in this chapter.

3.1 Final research model

The final research model can be found in Figure 3.1. The research question is: 'Is there a relevant match between project leader and project type and, based on that relationship, what project leader characteristics should be matched to what project type?' This question is split up in the three elements project leader, match, and project type. The progress of the project is an overall measurement inserted to know whether or not the project leader is doing a good job.

The literature study shows that it is best to use the 16PF personality test to determine project leader type. To study the similarities or differences between the fixed deliverable and experimental projects, specific attributes of the model of Crawford et al. (2005/2006) are used with the addition of an overall measurement. To determine the progress of the project twelve critical success factors are used.

To gain extra qualitative information, one interview per project is conducted. This helps to evaluate details of the different projects.

The next section describes how all the information is gathered.

p²

Project's progress

- Project mission
- Top management support
- Power and politics
- Schedule and plans
- Planning and control systems
- Client consultation
- Personnel recruitment
- Technical tasks
- Monitoring and feedback
- Communication
- Characteristics of the project leader
- Effective teambuilding/motivation

| Project leader | → | **Match?** | ← | Project type |

16 personality factors:
- Warmth (A)
- Reasoning (B)
- Emotional stability (C)
- Dominance (E)
- Liveliness (F)
- Rule-consciousness (G)
- Social boldness (H)
- Sensitivity (I)
- Vigilance (L)
- Abstractedness (M)
- Privateness (N)
- Apprehension (O)
- Openness to change (Q1)
- Self-reliance (Q2)
- Perfectionism (Q3)
- Tension (Q4)

Global scales
- Extraversion
- Anxiety
- Tough-mindedness
- Independence
- Self-control

Attributes fixed deliverable
- Application area
- Project timing
- Stand alone or grouped
- Stage of life cycle
- Ownership/funding
- Contractual issues

Attributes experimental
- Geography
- Project timing
- Stand alone or grouped
- Stage of life cycle
- Ownership/funding
- Contractual issues

Overall
- Dynamic
- Stable
- People oriented
- Content oriented

Figure 3.1: Final research model

3.2 Methodology

As the literature review shows, little research has been conducted about the relationship between project leader and project type. Up until now, only four articles are published about this specific subject. This means that little is known and studied. Because of this

little knowledge, this study is explorative. In this explorative research, both quantitative and qualitative data are collected.

To gather data, a search for projects was started. Time limitations have led to the choice of two basic project types that can be seen as two extremes. These two basic types are fixed deliverable and experimental projects. At first fixed deliverable projects were sought. This search started by sending an email to the employees of P2managers. With help of them, in total five fixed deliverable projects were found. As this first search was going on, the second search for experimental projects started by sending an email to specific employees of P2managers who were currently participating in an experimental project. Via them and via external participants in the study, also five experimental projects were found. A description of the projects can be found in Appendix H.

All these projects provided quantitative and qualitative data. The quantitative data was gathered with the help of the personality test and questionnaires. The project leader received the personality test (Appendix I) to fill out and a questionnaire (Appendix J & Appendix K) about the project type and progress. The project team members received a questionnaire (Appendix L & Appendix M) on the project type and the progress. The principal of the project or the superior of the project leader was asked to fill out a questionnaire (Appendix N) on the progress of the project.

The qualitative data were gathered by conducting an interview with one of the project team members about the progress of the project and the characteristics of the project leader. Table 3.1 provides an overview of the research structure.

The following subsections describe the methods used to analyze the data.

Who	Moment 1	Moment 2
Project leader	Questionnaire about project type	
	Questionnaire about progress of the project	
	Personality test	
Project team members	Questionnaire about project type	Interview about progress of the project and project leader characteristics
	Questionnaire about progress of the project	
Principal or superior	Questionnaire about progress of the project	

Table 3.1: Research structure in the population

3.2.1 Project leader type

The project leader was analyzed with the 16PF personality test. This test exists of 186 multiple choice questions and was retrieved via one of the study's supervisors. The analysis of the answers was done with the official 16PF questionnaire analysis method by hand and presents the results for the 16PF and the global scales. These global scales are a summary of the 16PF, but were also used in the analysis, because they may also show some relevant relations. To check for mistakes in the analysis of the 16PF test, a random

sample of the answer sheets was checked by the study's supervisor; no mistakes were found.

To verify the results of the 16PF test, the interviewees were questioned about six of the personality factors. These six were factor E (dominance), G (rule-consciousness), I (sensitivity), M (abstractedness), Q1 (openness to change), and Q3 (perfectionism). These personality factors were selected based on the expectation of biggest differences between the two basic project types. This expectation is based on the idea that the two basic project types can be seen as the extremes of the MBTI axis sensing vs. intuition (see paragraph 2.4.1). The personality factors E, G, I, M, Q1, and Q3 are related to this axis (Conn and Rieke, 1994).

The interviewees were asked which behaviour, belonging to each of the extremes of the factors, is shown by the project leader. The discrepancies between these answers and the result of the 16PF test were checked by counting the differences and relating the amount of differences to the progress of the project. The correlation showed that the amount of differences did not affect the progress. So, there is no relationship between the amount of differences in project leader characteristics and perceived project leader characteristics, and the progress of the project. This means that the discrepancies that are present in the project leaders' characteristics and the perceived characteristics are not relevant.

3.2.2 Project type

To check whether the selected projects within the specific types are the same, the questionnaires of the project leader and project team members included six questions about their interpretation of the project type (see Table 2.11). The subjects questioned are the attributes (Crawford et al., 2005/2006) for which main differences are possible.

Per project, the answers to the questions were summarized to one general answer. This was done by looking at the frequencies of the answers given. The answer that was given most frequent was selected as the summarizing answer.

Furthermore the project leader and team members had to fill in the list in Appendix F. This is the list about the project type created with the MBTI axis as basis (see paragraph 2.5.3). The answers given in this list were summarized by calculating the average number given to the extremes. These averages were used to determine the dynamic, stable, people oriented, and content oriented levels of the projects.

All these general answers were included in factor analyses for fixed deliverable as well as experimental projects (see Appendix O). These analyses showed that for both project types the attributes can be combined into two groups. These two groups of attributes illustrate for both types that there is a relation between the answers given. Therefore it

was concluded that within the main project types, fixed deliverable and experimental, the projects are the same.

3.2.3 Project's progress

To determine the progress of the project, opinions of different participants were investigated. These are the project leader, the project team members, and the principal of the project or the superior of the project leader. In the questionnaire they all had to fill in two questions about the project's progress. Furthermore, in the interview the project team member was questioned about the progress to gain background information.

The two questions, used to determine the level of progress, analyze the opinion of the person about the progress and include the twelve success factors selected in paragraph 2.6.4. Per project the mean of the opinions about the project's progress was calculated (with a maximum of four points). The twelve factors were analyzed with factor analysis in SPSS. The test was not ideal with a Cronbach's alfa of 0.583, though, it was decided to use the results, because this was the best way available to determine the progress level. The results of the factor analysis revealed two groups of success factors related to each other. The first group contained six factors and the second group three factors. These groups received points by counting the present factors not having a negative effect on the project's progress.

The level of progress was determined by summing up the mean of the opinions and the points of the groups per project. In total a maximum of 13 points could be awarded. The higher a project scored, the better the progress of the project. With a score of 5.67, project four did not progress very well.

A remarkable issue is a large discrepancy between people's opinion and the presence of success factors for the projects seven and nine. With the help of information from the interviews and qualitative answers in the questionnaire it was decided that project seven was doing well and project nine was not (for extra information see Appendix P).

The results of determining the level of progress show that two projects are not doing well; project four and nine. Project four is a fixed deliverable project and project nine an experimental project.

3.2.4 Data analysis

The data collected consisted of information about the project leader's personality, the project type, and the project's progress. To be able to answer the research question this data had to be analyzed. This analysis was divided in several sub analyses which all together answer the main research question. This paragraph explains how the data was analyzed. In chapter 4 the results of the analyses will be discussed.

3.2.4.1 Intermediating factor between project leader and progress

First of all it was checked whether the project type is an intermediating factor for the relation of project leader's personality and project's progress. A partial correlation analysis was performed to determine the relation between two variables, while controlling for another variable (www.statsdirect.com). This means that, when the correlation coefficient between project leader's personality and project's progress is lower than the coefficient when controlling for project type, project type has an intermediating, positive effect on the relationship. This would prove that the personality of the project leader should differ per project type.

3.2.4.2 Relevant relationships

Some relationships are of interest for this study. These are:

- Project leader's personality (16PF) in relation to project type
- Project leader's personality (16PF) in relation to project's progress
- Project type in relation to project's progress

The relation between the 16PF (including global scales) and the project type was first explored with the help of histograms. For each histogram was checked whether it could be expected that the personality factor for fixed deliverable project should be the same, higher, or lower compared to experimental projects. These expectations helped to formulate alternative hypotheses for the t-tests that were conducted afterwards. In the t-test only the good progress projects were analysed, so project four and nine were left out.

In the analysis of this relation, special attention was given to the personality factors E (dominance), G (rule-consciousness), I (sensitivity), M (abstractedness), Q1 (openness to change), and Q3 (perfectionism), because these were expected to differ most (see 3.2.1).

The relation between 16PF (including global scales) and project's progress was addressed in the same way as the previous relation. First, the given answers were explored with the help of histograms. The expected outcomes were used to formulate alternative hypotheses for the t-tests conducted. The two items tested against each other are each of the 16PF and the progress, with the groups good and not good.

Also the last relation between project type and project's progress was tackled with a t-test. This time the t-test was conducted between the two basic project types and the level of progress (point 1 to 13).

3.2.4.3 The project leader's personality within the project categories

Another issue of interest seems to be whether or not the 16PF (including global scales) relates to specific characteristics of the project types fixed deliverable and experimental. This issue was analyzed with a one-way anova test. This test investigates the same as the t-test, only it can study more than two groups. Because the possibilities of answers to be given in the questionnaire were mostly more than two, this test was a useful tool for this analysis. The one-way anova was conducted for the fixed deliverable and experimental projects separate.

3.2.4.4 Differences in opinion

One of the possibilities is that the difference in opinion about the project type characteristics influences the level of progress. To study this, the amount of differences in opinion of project type characteristics between the project leader and the separate team members was counted. This number was correlated to the progress (point 1 to 13) of the project.

A second possibility is that the personality of the project leader influences the level of discrepancy between the opinion of the principal or superior and the others about the project's progress. After counting the differences in the dataset, there were so little differences that no test was conducted.

3.2.4.5 Dynamic and people oriented / stable and content oriented

Looking at the data, it seemed that dynamic projects were often also people oriented projects and stable projects were often also content oriented. To study this relation the correlation coefficient was calculated. In this case correlations were proper to use, because all four factors could be placed on a scale from 1 to 100. This scale is large enough to study the correlation to determine the relationships.

3.2.4.6 Interviews

When all results were analyzed, the transcripts of the interviews were read and interesting statements were selected. The focus to find these statements was on similarities and differences between interviews, similarities and differences with the results from the dataset, and specific remarks about the characteristics of the project leader. The statements were compared and analyzed.

4 RESULTS

The results of the tests are described in the next paragraphs. The results also show some interesting relations with the global scales of the 16PF questionnaire. These scales do not have a letter and are therefore mentioned by their name.

4.1 Intermediating factor between project leader an progress

The partial correlation between the 16PF and progress (scale 1-2), controlling for project type, revealed that for most of the 16PF the project type intermediates the relationship positively. For some of the 16PF the project type did not intermediate at all. These factors are F (liveliness), H (social boldness), N (privateness), and independence. The personality factors for which project type intermediates positively and are closest to statistical significance are C (emotional stability), Q1 (openness to change), Q4 (tension), and anxiety. These last four factors are also the ones for which the variance explained is the largest. 33.64% of the variance in progress is explained by emotional stability in combination with the project type. 31.70% of the variance in progress is explained by openness to change combined with project type. 30.25% of the variance in progress is explained by tension in combination with project type. 25.20% of the variance in progress is explained by anxiety combined with project type.

These results are summarized in Figure 4.1 and Table 4.1.
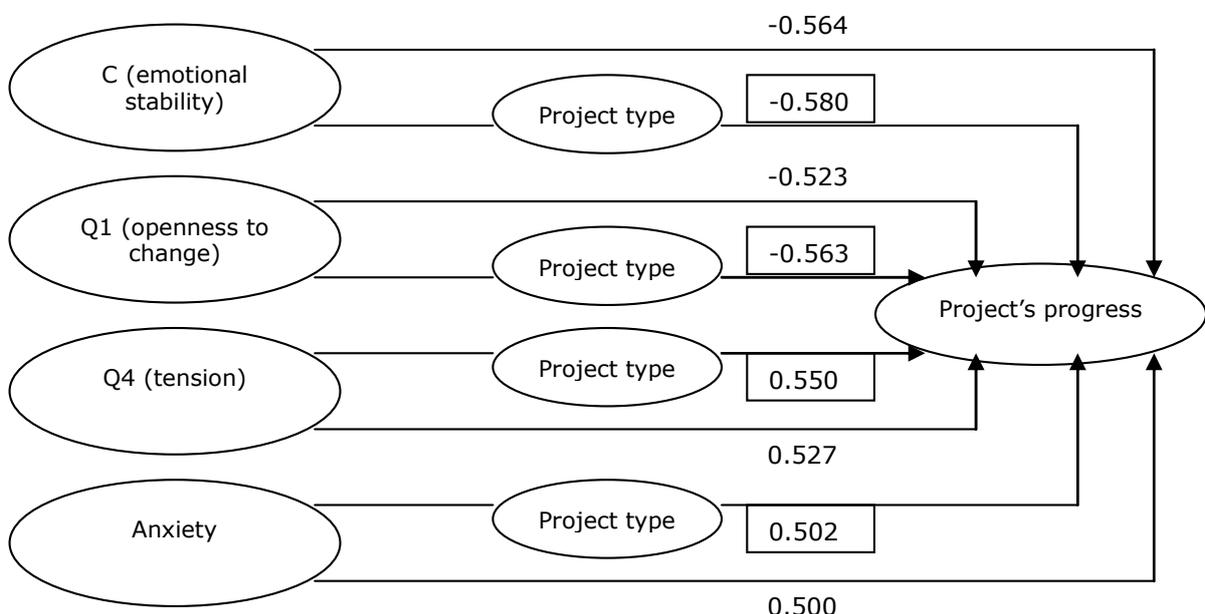
Figure 4.1: Closest to statistically significant results of partial correlation ($\alpha = 0.2$, n = 10)

16PF	Correlation with progress (scale 1-2)	Partial correlation with progress (scale 1-2)	R^2 of the partial correlation	p-value
C	-0.564	-0.580*	0.3364	0.101
Q1	-0.523	-0.563*	0.3170	0.115
Q4	0.527	0.550*	0.3025	0.125
Anxiety	0.500	0.502*	0.2520	0.169

*: $p < 0.2$

Table 4.1: Closest to significance results partial correlation (n = 10)

4.2 Relevant relationships

Three relationships were investigated in this dataset (see Figure 4.2). These are the relations:

1. Project leader's personality (16PF) in relation to project type
2. Project leader's personality (16PF) in relation to project's progress
3. Project type in relation to project's progress
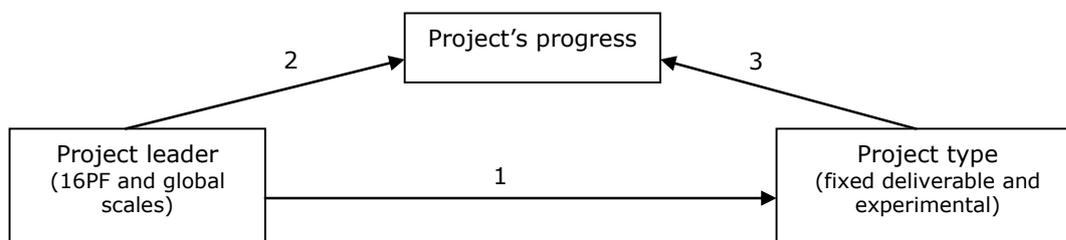
Figure 4.2: Relationships studied

4.2.1 Project leader's personality (16PF) in relation to project type

The first relation that was investigated is the relation between the 16PF and the project type. Several relationships showed to be almost significant at α = 0.1 (α = 0.1 shows that there is a 10% chance that a conclusion drawn is wrong). These were the 16PF A (warmth), B (reasoning), E (dominance), G (rule-consciousness), and self-control. A (warmth) is statistically significant at the level of α = 0.05. Two of the 16PF are not significantly related to the project type, but showed in the histogram a remarkable difference (see Appendix Q). These 16PF are M (abstractedness) and Q2 (self-reliance). The test results are displayed in Table 4.2 and Figure 4.3.

16PF	Ha (F = fixed deliverable, E = experimental)	t-value	p-value	Conclusion (α = 0.1)
A	F>E	2.905	0.014	p< 0.05 → reject H0 *Fixed higher A than exp*
B	F<E	-1.732	0.067	p< 0.1 → reject H0 *Fixed lower B than exp*
E	F<E	-1.555	0.099	p< 0.1 → reject H0 *Fixed lower E than exp*
G	F>E	4.333	0.0025	p< 0.1 → reject H0 *Fixed higher G than exp*
Self-control	F>E	1.637	0.0925	p< 0.1 → reject H0 *Fixed higher self-control than exp*

Table 4.2: Results t-test 16PF in relation to project type ($n_F = 4$, $n_E = 4$)

These results show that from the expected differences in the personality factors only E (dominace) and G (rule-consciousness) are almost significantly related and M (abstractedness) shows a difference.
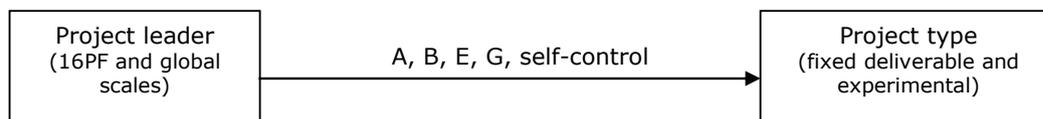
Figure 4.3: Results first relationship

4.2.2 Project leader's personality (16PF) in relation to project's progress

The second relation investigated, is the relation between the 16PF and the project's progress. Similar to the relation between 16PF and project type some personality factors showed to be significantly related to the progress. These factors are C (emotional stability), Q1 (openness to change), Q4 (tension), and anxiety. Most are significant at α = 0.05, only Q1 is almost significant with p = 0.0605. Looking at the histograms (see Appendix R) of this relation, another personality factor showed to be of interest. B (reasoning) shows a difference between good and poor progress. The results of this test are portrayed in Table 4.3 and Figure 4.4.

16PF	Ha (g=good progress, p=poor progress)	t-value	p-value	Conclusion (α = 0.1)
C	g>p	1.930	0.045	p<0.05 → reject H0 *The better the progress, the higher C*
Q1	g>p	1.737	0.0605	p<0.1 → reject H0 *The better the progress, the higher Q1*
Q4	g<p	-3.667	0.004	p<0.05 → reject H0 *The better the progress, the lower Q4*
Anxiety	g<p	-3.377	0.0055	p<0.05 → reject H0 *The better the progress, the lower anxiety*

Table 4.3: Results t-test 16PF in relation to progress ($n_g = 8$, $n_p = 2$)
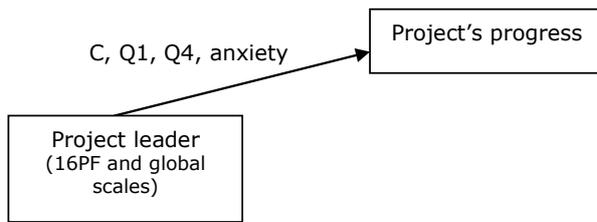
Figure 4.4: Results second relationship

4.2.3 Project type in relation to project's progress

The third relation investigated relationship, was the one between project type and project's progress. With a p-value of 0.476 (2-tailed) this relationship is not statistically significant. The result is displayed in Figure 4.5.
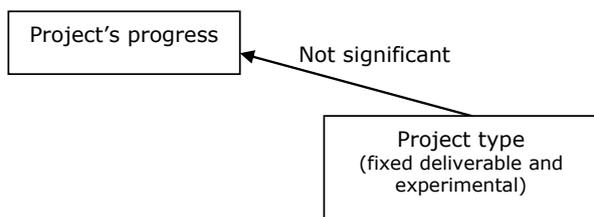
Figure 4.5: Results third relationship

4.2.4 Results relevant relationships

In the previous paragraphs the statistical significance of the relevant relationships was studied. Figure 4.6 displays the overview of the results from the previous paragraphs.
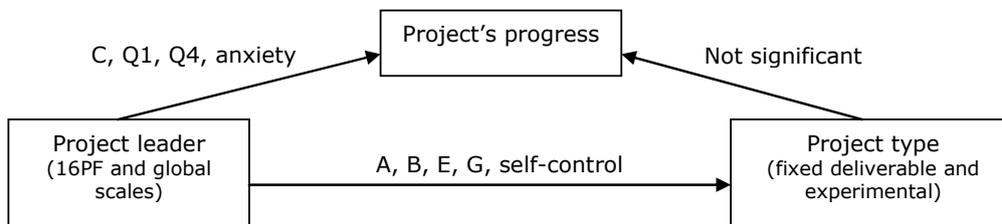
Figure 4.6: Results relationships studied

4.3 The project leader's personality (16PF) within the project types

The previous paragraph showed that several of the 16PF are significantly related to the project types. Though, do some of the 16PF also relate to some of the specific characteristics of the project types? This can be interesting due to the fact that, when different characteristics need different project leaders, it may help to select a project leader matching the most important characteristic.

For the fixed deliverable projects, two of the characteristics related to some of the 16PF. These are the phase of the project (specifically phase 1 feasibility) and who participates in making the decisions (specifically participants). The phase is found to relate to G (rule-consciousness), I (sensitivity), and self-control. Whether or not participants can join in

decision making is related to H (social boldness), O (apprehension), Q3 (perfectionism), and extraversion. The results of the test are displayed in Table 4.4.

Project type element	16PF	F	p-value	Conclusion (α = 0.1)
Phase1 (feasibility)	G	9.000	0.095	$p<0.1 \rightarrow$ reject H_0
	I	49.000	0.020	$p<0.05 \rightarrow$ reject H_0
	Self-control	9.995	0.087	$p<0.1 \rightarrow$ reject H_0
Decision 3 (participants)	H	12.250	0.073	$p<0.1 \rightarrow$ reject H_0
	O	12.000	0.074	$p<0.1 \rightarrow$ reject H_0
	Q3	12.250	0.073	$p<0.1 \rightarrow$ reject H_0
	Extraversion	9.308	0.093	$p<0.1 \rightarrow$ reject H_0

Table 4.4: Results one-way anova test fixed deliverable projects (n = 4)

Because the characteristics dynamic, stable, people oriented, and content oriented could not be divided into groups (these were placed on a scale from 1 to 100), these were tested with the correlation. This showed that for dynamic vs. stable E (dominance), I (sensitivity), and self-control were related. For people vs. content oriented, B (reasoning) and independence were related. Table 4.5 shows the (almost) significant relationships (α = 0.05 and α = 0.1).

		Dynamic	People oriented	Stable	Content oriented
Reasoning (B)	Pearson Correlation	0.607	0.918*	-0.607	-0.918*
	Sig. (2-tailed)	0.393	0.082	0.393	0.082
Dominance (E)	Pearson Correlation	-0.990**	-0.375	0.990**	0.375
	Sig. (2-tailed)	0.010	0.625	0.010	0.625
Sensitivity (I)	Pearson Correlation	0.982**	0.227	-0.982**	-0.227
	Sig. (2-tailed)	0.018	0.773	0.018	0.773
Independence	Pearson Correlation	-0.115	-0.974*	0.115	0.974*
	Sig. (2-tailed)	0.885	0.026	0.885	0.026
Self-control	Pearson Correlation	-0.961**	-0.015	0.961**	0.015
	Sig. (2-tailed)	0.039	0.985	0.039	0.985

*: significant with α = 0.1
**: significant with α = 0.05
Table 4.5: Results correlations fixed deliverable projects (n = 4)

For the experimental projects the picture looked completely different. Here five characteristics were related to one or more of the 16PF. More specific, these were the characteristics location, planning, grouping, phase (specifically research, development, and other), and decision making (specifically the project team, internal parties within own organisation and external parties that finance). Location related to M (abstractness) and Q1 (openness to change). Planning linked to E (dominance), F (liveliness), extraversion, and independence. Grouping was found to be related to N (privateness), Q2 (self-reliance), anxiety, and self-control. Phase linked to E (dominance), F (liveliness), M (abstractedness), N (privateness), Q1 (openness to change), Q2 (self-reliance), extraversion, anxiety, independence, and self-control. The results of the test are displayed in Table 4.6.

Project type element	16 PF	F	p-value	Conclusion ($a = 0.1$)
Location	M	16.000	0.057	$p < 0.1 \rightarrow$ reject H_0
	Q1	25.000	0.038	$p < 0.05 \rightarrow$ reject H_0
Planning	E	25.000	0.038	$p < 0.05 \rightarrow$ reject H_0
	F	81.000	0.012	$p < 0.05 \rightarrow$ reject H_0
	Extraversion	17.778	0.052	$p < 0.1 \rightarrow$ reject H_0
	Independence	23.511	0.040	$p < 0.05 \rightarrow$ reject H_0
Grouping	N	16.000	0.057	$p < 0.1 \rightarrow$ reject H_0
	Q2	42.250	0.023	$p < 005 \rightarrow$ reject H_0
	Anxiety	11.223	0.079	$p < 0.1 \rightarrow$ reject H_0
	Self-control	13.000	0.069	$p < 0.1 \rightarrow$ reject H_0
Research	E	25.000	0.038	$p < 0.05 \rightarrow$ reject H_0
	F	81.000	0.012	$p < 0.05 \rightarrow$ reject H_0
	Extraversion	17.778	0.052	$p < 0.1 \rightarrow$ reject H_0
	Independence	23.511	0.040	$p < 0.05 \rightarrow$ reject H_0
Development	N	16.000	0.057	$p < 0.1 \rightarrow$ reject H_0
	Q2	42.250	0.023	$p < 0.05 \rightarrow$ reject H_0
	Anxiety	11.223	0.079	$p < 0.1 \rightarrow$ reject H_0
	Self-control	13.000	0.069	$p < 0.1 \rightarrow$ reject H_0
Other	M	16.000	0.057	$p < 0.1 \rightarrow$ reject H_0
	Q1	25.000	0.038	$p < 0.05 \rightarrow$ reject H_0
The project team	N	16.000	0.057	$p < 0.1 \rightarrow$ reject H_0
	Q2	42.250	0.023	$p < 0.05 \rightarrow$ reject H_0
	Anxiety	11.223	0.079	$p < 0.1 \rightarrow$ reject H_0
	Self-control	13.000	0.069	$p < 0.1 \rightarrow$ reject H_0
Internal parties within own organisation	C	12.250	0.073	$p < 0.1 \rightarrow$ reject H_0
External parties that finance	I	49.000	0.020	$p < 0.05 \rightarrow$ reject H_0
	H	18.000	0.051	$p < 0.1 \rightarrow$ reject H_0
	L	18.000	0.051	$p < 0.1 \rightarrow$ reject H_0
	Tough-mindedness	9.386	0.092	$p < 0.1 \rightarrow$ reject H_0

Table 4.6: Results one-way anova test experimental projects (n = 4)

Also for the experimental projects the relationships with the characteristics dynamic, stable, people oriented, and content oriented were studied by calculating the correlation coefficient. These correlations showed that for experimental projects dynamic vs. stable is related to Q4 (tension) and people vs. content oriented is related to I (sensitivity), M (abstractedness), Q1 (openness to change), and tough-mindedness. The results of the test are displayed in Table 4.7 ($a = 0.1$).

		Dynamic	People oriented	Stable	Content oriented
Sensitivity (I)	Pearson Correlation	-0.605	-0.931*	0.605	0.931*
	Sig. (2-tailed)	0.395	0.069	0.395	0.069
Abstractedness (M)	Pearson Correlation	0.834	0.985**	-0.834	-0.985**
	Sig. (2-tailed)	0.166	0.015	0.166	0.015
Openness to change (Q1)	Pearson Correlation	-0.961**	-0.961**	0.961**	0.961**
	Sig. (2-tailed)	0.039	0.039	0.039	0.039
Tension (Q4)	Pearson Correlation	0.986**	0.756	-0.986**	-0.756
	Sig. (2-tailed)	0.014	0.244	0.014	0.244
Tough-mindedness	Pearson Correlation	0.760	0.986**	-0.760	-0.986**
	Sig. (2-tailed)	0.240	0.014	0.240	0.014

*: significant with α = 0.1
**: significant with α = 0.05
Table 4.7: Results correlations experimental projects (n = 4)

4.4 Differences in opinion

The possibility that the difference in opinion about the project type characteristics influences the level of progress was studied. The results showed that there are some differences in opinions, but the amount of differences does not relate to the progress of the project.

4.5 Dynamic and people oriented / stable and content oriented

In the data set it looked like dynamic projects were often people oriented projects and stable projects were often content oriented projects. Studying the relationships showed that with a p-value of 0.054 these relations are nearly significant with α = 0.05 (see Table 4.8). This means on the one hand that the more dynamic a project is, the more people oriented it is, and on the other hand that a more stable a project a more content oriented project is.

		People oriented	Content oriented
Dynamic	Correlation	0.623	-0.623
	Sig. (2-tailed)	0.054	0.054
Stable	Correlation	-0.623	0.623
	Sig. (2-tailed)	0.054	0.054

Table 4.8: Result correlation dynamic vs. people oriented and stable vs. content oriented (n = 10)

4.6 Interviews

After reading the transcripts of the interviews carefully and selecting interesting statements, some interesting results appeared.

The project members of projects two and four mentioned some things about the characteristics of the project leader. The team member of project two mentioned that the strength of the project leader was in his ability to switch in level of discipline. The team member of project four mentioned that a project leader needs to be flexible in the search

for alternative solutions, should not be very sensitive, and should be able to think abstract. These statements are compared to the results of the study in paragraph 5.2.

A question about the influence of the project leader on the success of the project showed some disagreement. Many project team members thought that the project leader has a large influence on the success, but some think that is not the case. The team member of project nine, for example, stated: 'I think that when a project leader has different characteristics, the project will go in another direction, though this does not have to be wrong'. On the other hand, the team member of project one stated: 'When a project leader does not function well, this has a large negative effect on the project's success'. This revealed that there is disagreement in how team members think about the influence of the leader on the project.

Furthermore, the background information gathered about the success factors revealed some similarities in answers. The team members of projects one, four, eight, nine, and ten agree that a good team composition exists when a team consists of people with different experiences and specialism. Team members of project four, eight, and nine agree about the idea that, when little adaptation to the planning is necessary, the feeling about the project's progress is more positive. The team members of project one, two, four, five, seven, eight, nine, and ten state that monitoring and feedback does not happen in official ways, but when necessary, feedback is given and accepted. Although this does not directly relate to the research question of this study, these are interesting similarities. In further research this information can be used in increase the reliability of the success factors by being more precise in questioning what is present.

In paragraph 5.2 the results of the interviews relevant for the research question are analyzed. These results are the remarks about important characteristics of project leaders and the little agreement about whether or not the project leader influences project success.

5 DISCUSSION OF THE RESULTS

The results that are presented in chapter 4 are analyzed in this chapter. This analysis will lead to some conclusions, which are discussed in chapter 6.

5.1 Discussion of the results from the dataset

The results of the dataset (as presented in paragraph 4.2.3) showed that the type of project does not influence the level of progress. As described in paragraph 4.4, the amount of differences in opinion between team members and project leader was observed. However, this amount of differences did not influence the project's progress. Though, project type was found to intermediate the relation between project leader's personality and project's progress in a positive way. For the personality factors C (emotional stability), Q1 (openness to change), Q4 (tension), and anxiety the relationship was intermediated most closely to significant ($\alpha = 0.2$). These results imply that different project leader characteristics are necessary for different types of projects to have a good progress.

5.1.1 Project leader's personality (16PF) in relation to project type

The results indicated that fixed deliverable projects need different project leader characteristics than experimental projects. The specific differences were analyzed and showed that the personality factors A (warmth), B (reasoning), E (dominance), G (rule-consciousness), and self-control are (almost) statistically significant different for fixed deliverable and experimental projects. The personality factors M (abstractedness) and Q2 (self-reliance) are not significantly different, but did show a difference in histograms. More specific, for fixed deliverable projects to progress well, project leaders need a medium level of A (warmth), a low level of B (reasoning), E (dominance), M (abstractedness) and self-reliance, and a high level of G (rule-consciousness) and self-control. For experimental projects to progress well, project leaders need an extreme low level of A (warmth) and G (rule-consciousness), a low level of Q2 (self-reliance) and self-control, and a high level of B (reasoning), E (dominance) and M (abstractedness). Table 5.1 presents the precise results and the meaning of the levels.

For each factor a level of presence is defined for the project to progress well. An extreme level means that these characteristics should be very obviously present in the project's leader. A low or high level means that the characteristics belonging to that level should be present in a more subtle way compared to extreme levels. A medium level indicates that characteristics of both low and high level should be present for good progress of the project.

Significant relationships (α = 0.1)		
Fixed deliverable	**16PF**	**Experimental**
Medium: A little reserved, impersonal, distant and a little warm-hearted, caring, attentive to others	A: Warmth	*Low (extreme)*: Reserved, impersonal, distant
Low: Concrete, lower mental capacity	B: Reasoning	*High*: Abstract, bright, fast-learner
Low: Deferential, cooperative, avoids conflict	E: Dominance	*High*: Dominant, forceful, assertive
High: Rule-conscious, dutiful	G: Rule-consciousness	*Low (extreme)*: Expedient, nonconforming
High: Self-controlled, inhibits urges	Self-control	*Low*: Unrestrained, follows urges
Extra differences from histograms		
Fixed deliverable	**16PF**	**Experimental**
Low (extreme): Practical, grounded, down-to-earth	M: Abstractedness	*High*: Abstracted, imaginative, idea-oriented
Low (extreme): Group-oriented, affiliative	Q2: Self-reliance	*Low*: Group-oriented, affiliative

Table 5.1: 16PF in relation to project type ($n_F = 4$, $n_E = 4$)

5.1.2 Project leader's personality (16PF) in relation to project's progress

Next to these personality factors being different for the two project types, there were also personality factors found that are related to the project's progress of both project types. Being at a certain level, these personality factors influence the progress of any project. To get a good progress, project leaders should have an extremely low level of tension, a low level of anxiety, a high level of emotional stability and reasoning, and an extremely high level of openness to change. Table 5.2 displays what level of the personality factor relates to a good progress and what level relates to poor progress.

Significant relationships (α = 0.1)		
Good progress	**16PF**	**Poor progress**
High: Emotionally stable, adaptive, mature	C: Emotional stability	*Low:* Reactive, affected by feelings
High (extreme): Open to change, experimenting	Q1: Openness to change	*Low (extreme):* Traditional, attached to familiar
Low (extreme): Relaxed, placid, patient	Q4: Tension	*Low:* Relaxed, placid, patient
Low: Low anxiety, imperturbable	Anxiety	*High:* High anxiety, perturbable
Extra differences from histograms		
Good progress	**16PF**	**Poor progress**
High: Abstract, bright, fast-learner	B: Reasoning	*Low:* Concrete, lower mental capacity

Table 5.2: 16PF in relation to progress ($n_g = 8$, $n_p = 2$)

5.1.3 Project leader's personality (16PF) within the project types

Taking a look at the characteristics of the two project types in relation to the 16PF showed some other results. For fixed deliverable projects also personality factors G (rule-consciousness) and self-control were related to the phase of the project; specifically the feasibility phase (see Table 5.3). This indicates that only for the projects not being in the

feasibility phase it seems to be true that fixed deliverable projects need a high level of G (rule-consciousness) and self-control.

Furthermore, personality factor E (dominance) should be low for fixed deliverable projects to progress good. Though, the analysis of the 16PF in relation to the characteristics of the project type showed that this is only the case for dynamic fixed deliverable projects. In addition, the analysis showed that factor B (reasoning) should be low for fixed deliverable projects. Though, the analysis of the project type's characteristics showed that this is only true for content oriented fixed deliverable projects.

These results suggest that the project leader characteristics do not only depend on project type, but also on the specific characteristics of the project, like the phase. The (almost) statistically significant relationships between the project characteristics of fixed deliverable projects and the 16PF are presented in Table 5.3.

Significant relations ($\alpha = 0.1$)		
Phase is feasibility	**16PF**	**Phase is not feasibility**
Low: Expedient, nonconforming	G: Rule-consciousness	*High*: Rule-conscious, dutiful
High: Sensitive, aesthetic, tender-minded	I: Sensitivity	*Low (extreme):* Tough, objective, unsentimental
Low: Unrestrained, follows urges	Self-control	*High*: Self-controlled, inhibits urges
Participants are included in the decision making process	**16PF**	**Participants are not included in the decision making process**
High: Socially bold, venturesome, thick-skinned	H: Social boldness	*Low*: Shy, timid, threat-sensitive
Low (extreme): Self-assured, unworried, complacent	O: Apprehension	*High*: Apprehensive, self-doubting, worried
Low: Tolerates disorder, unexacting, flexible	Q3: Perfectionism	*High:* Perfectionistic, organized, self-disciplined
High (extreme): Extraverted, socially participating	Extraversion	*Low*: Introverted, socially inhibited
Dynamic	**16PF**	**Stable**
Low: Deferential, cooperative, avoids conflict	E: Dominance	*High*: Dominant, forceful, assertive
High: Sensitive, aesthetic, tender-minded	I: Sensitivity	*Low:* Tough, objective, unsentimental
Low: Unrestrained, follows urges	Self-control	*High*: Self-controlled, inhibits urges
People oriented	**16PF**	**Content oriented**
High: Abstract, bright, fast-learner	B: Reasoning	*Low:* Concrete, lower mental capacity
High: Independent, persuasive, wilful	Independence	*High (extreme):* Independent, persuasive, wilful

Table 5.3: Conclusions 16PF in relation to the characteristics of fixed deliverable projects (n = 4)

For the experimental projects, the picture looks different. The overall analysis showed that the personality factor E (dominance) should be high for experimental projects. Analyzing more specifically though, it showed that this is only true when the planning of the project is made like a process planning (step by step) and the project is in the research phase. For personality factor M (abstractedness) the overall analysis stated that the factor should be high in experimental projects. This seems to be true for

experimental projects which are located on multiple locations in the Netherlands, are in the phase research, feasibility, development, or design, and which are people oriented. The factor Q2 (self-reliance) should be low according to the overall analysis. Though, for some characteristics it is best for the project leader to score extremely low on Q2 (self-reliance). These characteristics are grouping with projects on other locations, phase development, and that the project team is not included in the decision making process. The personality factor self-control should also be low according to the overall analysis, which is also proven by the more detailed analysis. In this case as well, some characteristics relate to an extremely low level of self-control. These are the same as for Q2 (self-reliance); grouping with projects on other locations, phase development, and the project team is not included in the decision making process. The overview of the results of the detailed analysis of experimental projects can be found in Table 5.4.

Significant relations (α = 0.1)		
One location	**16PF**	**Multiple locations in the Netherlands**
Low: Practical, grounded, down-to-earth	M: Abstractedness	*High:* Abstracted, imaginative, idea-oriented
Low (extreme): Traditional, attached to familiar	Q1: Openness to change	*Low:* Traditional, attached to familiar
Process planning	**16PF**	**Global planning**
High: Dominant, forceful, assertive	E: Dominance	*Low:* Deferential, cooperative, avoids conflict
High: Enthusiastic, animated, spontaneous	F: Liveliness	*Low:* Serious, restrained, careful
High: Extraverted, socially participating	Extraversion	*Low*: Introverted, socially inhibited
High: Independent, persuasive, wilful	Independence	*Low:* Accommodating, agreeable, selfless
Stand alone	**16PF**	**Grouped with other locations**
Low: Forthright, genuine, artless	N: Privateness	*Low (extreme):* Forthright, genuine, artless
Low: Group-oriented, affiliative	Q2: Self-reliance	*Low (extreme):* Group-oriented, affiliative
Low (extreme): Low anxiety, imperturbable	Anxiety	*Low:* Low anxiety, imperturbable
Low (not extreme): Unrestrained, follows urges	Self-control	*Low (extreme)*: Unrestrained, follows urges
Phase is research	**16PF**	**Phase is not research**
High: Dominant, forceful, assertive	E: Dominance	*High (extreme):* Dominant, forceful, assertive
Low: Serious, restrained, careful	F: Liveliness	*High (extreme):* Enthusiastic, animated, spontaneous
Low: Introverted, socially inhibited	Extraversion	*High*: Extraverted, socially participating
Low: Accommodating, agreeable, selfless	Independence	*High (extreme):* Independent, persuasive, wilful
Phase is development	**16PF**	**Phase is not development**
Low (extreme): Forthright, genuine, artless	N: Privateness	*Low:* Forthright, genuine, artless
Low (extreme): Group-oriented, affiliative	Q2: Self-reliance	*Low:* Group-oriented, affiliative
Low: Low anxiety, imperturbable	Anxiety	*Low (extreme)* Low anxiety, imperturbable
Low: Unrestrained, follows urges	Self-control	*Low*: Unrestrained, follows urges
Phase is other	**16PF**	**Phase is not other**
Low: Practical, grounded, down-to-earth	M: Abstractedness	*High:* Abstracted, imaginative, idea-oriented
High: Open to change, experimenting	Q1: Openness to change	*Low:* Traditional, attached to familiar
The project team is included in the decision making process	**16PF**	**The project team is not included in the decision making process**
Low: Forthright, genuine, artless	N: Privateness	*Low (extreme):* Forthright, genuine, artless
Low: Group-oriented, affiliative	Q2: Self-reliance	*Low (extreme):* Group-oriented, affiliative
Low (extreme): Low anxiety, imperturbable	Anxiety	*Low:* Low anxiety, imperturbable
Low: Unrestrained, follows urges	Self-control	*Low (extreme)*: Unrestrained, follows urges
Internal parties within own organisation are included in the decision making process	**16 PF**	**Internal parties within own organisation are not included in the decision making process**
High: Emotionally stable, adaptive, mature	C: Emotional stability	*Low:* Reactive, affected by feelings
External parties that finance are included in the decision making process	**16PF**	**External parties that finance are not included in the decision making process**
High (extreme): Socially bold, venturesome, thick-skinned	H: Social boldness	*Low:* Shy, timid, threat-sensitive
Low (extreme): Tough, objective, unsentimental	I: Sensitivity	*Low:* Sensitive, aesthetic, tender-minded
Low: Trusting, unsuspecting, accepting	L: Vigilance	*Low (extreme):* Trusting, unsuspecting, accepting
High: Tough-minded, resolute, unempathic	Tough-mindedness	*Low:* Receptive, open-minded, intuitive
Dynamic	**16PF**	**Stable**
Low: Relaxed, placid, patient	Q4: Tension	*Low (extreme):* Relaxed, placid, patient
People oriented	**16PF**	**Content oriented**
Low (extreme): Tough, objective, unsentimental	I: Sensitivity	*High:* Sensitive, aesthetic, tender-minded
High: Abstracted, imaginative, idea-oriented	M: Abstractedness	*Low:* Practical, grounded, down-to-earth
Low: Traditional, attached to familiar	Q1: Openness to change	*High:* Open to change, experimenting
High: Tough-minded, resolute, unempathic	Tough-mindedness	*Low:* Receptive, open-minded, intuitive

Table 5.4: Conclusions 16PF in relation to the characteristics of experimental projects (n = 4)

5.2 Analysis of the interviews

The interviews delivered a number of interesting results. The two results of main interest for this study are the two remarks about important characteristics of project leaders and the little agreement about whether or not the project leader influences project success.

The first remark was made by team member of project two, who stated that the strength of the project leader was in his ability to switch in level of discipline. This indicates that the team member thinks a project leader should be able to switch between low and high levels of Q3 (perfectionism). The results of the dataset did not state anything about this, but did state that there is no significant relation between Q3 (perfectionism) and project type or project's progress. This discrepancy between statement and dataset results is interesting, due to the fact that the perception is not consistent with the results. The statement could indicate that there is a relation between Q3 (perfectionism) and progress, although it needs further analysis.

This discrepancy between statement and dataset results is interesting, due to the fact that the perception is not consistent with the results. The statement could indicate that there is a relation between Q3 and progress, although it needs further analysis.

The second remark, by team member four, stated that a project leader needs to be flexible in the search for alternative solutions, should not be very sensitive, and should be able to think abstract. This shows that the team member thinks a project leader should have a high level of Q1 (openness to change), a low level of I (sensitivity), and a high level of B (reasoning). The high levels of Q1 (openness to change) and B (reasoning) were also found to be almost significant in the analysis of the 16PF in relation to level of progress. For a project to progress well, high levels of Q1 (openness to change) and B (reasoning) are necessary. These results support the statement of the interview. A low level of I (sensitivity) was found to be almost significantly important for only some of the specific characteristics of the project types. For fixed deliverable projects these are not being in the phase feasibility and being stable. For experimental projects these were external parties that finance are not included in the decision making process and being content oriented.

The second remark, that a project leader needs to be flexible in the search for alternative solutions, should not be very sensitive, and should be able to think abstract, shows that the team member thinks that a project leader should have a high level of Q1 (openness to change), a low level of I (sensitivity), and a high level of B (reasoning). The high level of Q1 (openness to change) and B (reasoning) also result from the analysis of the 16PF vs. level of progress. For a project to go well, a high level of Q1 (openness to change)

and B (reasoning) is necessary. These results support the statement form the interview. A low level of I (sensitivity) is only found significantly important for some of the specific characteristics of the project types.

The disagreement between team members about the influence of the project leader on project success is not supported by the results of the dataset analysis. The dataset showed that some project leader characteristics do influence project's progress and that this relation is strengthened when taken the project type into account. Based on these results, the conclusion can be drawn that the project team members who did think the project leader does not have an important influence on project success are incorrect.

The information from the interviews not always corresponds with the results from the quantitative dataset. A lack of knowledge in the field of the project team members may cause these discrepancies. Little experience and knowledge may lead to another perception of the aspects reviewed than the results of the qualitative dataset do.

6 CONCLUSION

The analyses of the results from the dataset lead to several conclusions. These conclusions are presented in this chapter.

6.1 Conclusions about the expected differences in project leader type

As explained in paragraph 3.2.1 the largest differences between project leaders are expected in the personality factors E (dominance), G (rule-consciousness), I (sensitivity), M (abstractedness), Q1 (openness to change), and Q3 (perfectionism). Looking at these factors in the overall analysis between the factors and the two project types, only E (dominance) and G (rule-consciousness) are almost statistically significant different in the two project types. The other factors did not show a significant difference (see Table 6.1) and therefore seem irrelevant. This means that the expectations are not all met. That implies that the assumption that the project types fixed deliverable and experimental can be seen as the extremes of the MBTI axis sensing vs. intuition is wrong or that the dataset is not adequate enough to prove the expectations.

Expected differences overall ($\alpha = 0.1$)		
Fixed deliverable	**16PF**	**Experimental**
Low: Deferential, cooperative, avoids conflict	E: Dominance	*High*: Dominant, forceful, assertive
High: Rule-conscious, dutiful	G: Rule-consciousness	*Low (extreme)*: Expedient, nonconforming
No significant difference	I: Sensitivity	No significant difference
No significant difference	M: Abstractedness	No significant difference
No significant difference	Q1: Openness to change	No significant difference
No significant difference	Q3: Perfectionism	No significant difference

Table 6.1: Results of the expected differences ($n_F = 4$, $n_E = 4$)

6.2 Conclusions from the interviews

The statements resulting from the interviews showed that there is some overlap between the team members' perception of important characteristics of the project leader and the quantitative results from the study. Though, people do not agree about whether or not the project leader affects the project success, while the results suggest he does. This reveals that the opinions of the people involved in projects are (in some cases) incorrect about several things. It is possible that this is because of a lack of knowledge and experience in the field.

6.3 Answer to the research question

After analyzing the results from the study, the main research question can be answered. The question was: 'Is there a relevant match between project leader and project type and, based on that relationship, what project leader characteristics should be matched to what project type?'

First of all, the analysis of the results showed that project type intermediates the relation between project leader characteristics and project's progress. This means that different project leader characteristics are necessary for different project types to progress well. Therefore, a good match between project leader and project type is relevant for the project's progress.

Furthermore, the conclusions of the dataset showed that for any project to progress well, it is helpful to have a project leader who scores extremely high on Q1 (openness to change), high on C (emotional stability) and B (reasoning), low on anxiety, and extremely low on Q4 (tension). In addition, A (warmth), B (reasoning), E (dominance), G (rule-consciousness), M (abstractedness), Q2 (self-reliance), and self-control relate to both fixed deliverable and experimental projects. Some of the relationships with these factors are supported by the projects which are not going well. For fixed deliverable projects the project leader should have a low level of E (dominance). This is supported by project four: this fixed deliverable project had poor progress and the corresponding project leader has a high level of E (dominance). For experimental projects the project leader should have an extremely low level of A (warmth). This is supported by project nine (the experimental project with poor progress) in which the project leader has a high level of A (warmth). Furthermore, G (rule-consciousness) should be extremely low in experimental projects. Because project leader nine presents a high level of G (rule-consciousness), this result is supported. The same goes for self-control, which should be low in experimental projects. Project leader nine presents a high score on this factor and is leading a poorly progressing project.

The results for both types of projects are visualized in Figure 6.1 and Figure 6.2. These figures present the necessary project leader characteristics to gain a good progress in the project. Appendix S displays a summary of all the results.

Project leader characteristics	→	Fixed deliverable projects	→	Good progress projects
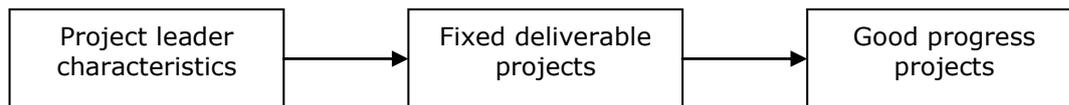
Specific for project type:
- Medium warmth (A)
- Low reasoning (B)
- Low dominance (E)
- High rule-consciousness (G)
- Extreme low abstractedness (M)
- Extreme low self-reliance (Q2)
- High self-control

Overall
- High reasoning (B)
- High emotional stability (C)
- Extreme high openness to change (Q1)
- Extreme low tension (Q4)
- Low anxiety

Figure 6.1: Visualized results fixed deliverable projects

Project leader characteristics	→	Experimental projects	→	Good progress projects
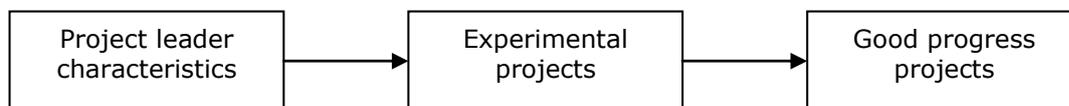
Specific for project type:
- Extreme low warmth (A)
- High reasoning (B)
- High dominance (E)
- Extreme low rule-consciousness (G)
- High abstractedness (M)
- Low self-reliance (Q2)
- Low self-control

Overall
- High reasoning (B)
- High emotional stability (C)
- Extreme high openness to change (Q1)
- Extreme low tension (Q4)
- Low anxiety

Figure 6.2: Visualized results experimental projects

So, the answer to the main question is that there is a relevant match between project leader and project type and that specific personality factors relate to the two project types. These personality factors are A (warmth), B (reasoning), E (dominance), G (rule-consciousness), M (abstractedness), Q2 (self-reliance), and self-control. Furthermore, some levels of personality factors relate to good progress projects, these are: an extremely high level of Q1 (openness to change), a high level of B (reasoning) and C (emotional stability) a low level of anxiety, and an extremely low level of Q4 (tension).

Most of the personality factors related to the project type seem logical, though some seem to be illogical. For experimental projects, the level of A (warmth) should be low. This means that a project leader should be reserved, impersonal, and distant for the project to progress well. In experimental projects it is necessary for project team members to feel free to explore their ideas. When creating an atmosphere where team

members feel free to explore, the project leader characteristics warm-hearted, caring, and attentive to others are helpful. Therefore, it was expected that a project leader for experimental projects should have a high level of A (warmth).

Also, the level of E (dominance) for fixed deliverable as well as experimental projects seems to be odd. The results showed that, for fixed deliverable projects, a project leader should have a low level of E (dominance). Therefore, the project leader should be deferential, cooperative, and avoiding conflicts. For experimental projects the project leader should have a high level of E (dominance), which means being dominant, forceful, and assertive. The characteristics deferential, cooperative, and avoiding conflicts imply that a project leader gives team members space to explore ideas. The characteristics dominant, forceful, and assertive imply that a project leader is less willing to give space to explore ideas. Because fixed deliverable projects by definition do not need much exploring space and experimental project do, for this personality factor it was expected that the results would be the other way around.

In all projects it is important for a team to work together. Though, in experimental projects this is even more important, because it is harder to explore alone than to finalize one set task alone (which is more often the case in fixed deliverable projects). For this reason, it could be expected that Q2 (self-reliance) should be lower (more group-oriented) for experimental projects compared to fixed deliverable. However, the results suggested it to be the other way around.

Moreover, the results suggested that for both project types B (reasoning) should be high to gain good progress. The results for fixed deliverable projects on the other hand show that project leaders should have a low level of B (reasoning) to gain good progress on their projects. This is in disagreement with each other. A possible explanation for this is that it depends on specific characteristics of the project type what level of B (reasoning) is best. It is possible for example that for fixed projects in the phase feasibility a low level of B (reasoning) is necessary, while for fixed projects in the phase implementation a high level of B (reasoning) in necessary for a good progress.

For all the above described illogically results, it is possible that there are other project leader characteristics that are more important for a good progress but that were not investigated in this study. One of those characteristics could be expertise. It is possible that a high level of expertise of the leader overrules other important characteristics.

6.4 Literature vs. results

The four studies performed in the previous years, on the match between project leader and project type, did show some results. This paragraph reviews whether the results of the current study agree or disagree with the literature. Appendix T shows which

personality factors are seen as which of the 16PF. A summary of the results is displayed in Table 6.2 and Table 6.3.

McDonough III (1990) states that new technology projects are positively influenced by the bisociative problem solving style and the academic degree of the project leader. Minor modification projects are positively influenced by the number of years in the present position and age. The bisociative problem solving style is described as more innovative and creative. This can be seen as a high level of Q1 (openness to change). The results of the current study showed no significant evidence that a high level of Q1 (openness to change) works positively for experimental projects. Though, the results did show weak evidence in that direction (p = 0.234). The years in the present position and the age were not investigated in the current study; therefore nothing can be stated about this.

Dvir et al. (2006) conclude that high-tech projects need a high level of perceiving, a low level of openness to experiences, and a low level of rebellious dreamer. Derivative projects need a low level of perceiving, a high level of openness to experience, and a high level of rebellious dreamer.

Perceiving is explained as 'being flexible rather than planned, disliking deadlines, and preferring unpredicted events' (Dvir et al., 2006, p.39). This factor can therefore be seen as a low level of Q3 (perfectionism). Looking at the results from the current study, the direction seems to be the other way around, although there is no significant proof found. With a p-value of 0.207 the results showed that fixed deliverable projects need a high level of Q3 (perfectionism) and experimental projects a low level of Q3 (perfectionism).

Openness to experience is explained as having 'broad interests, being imaginative, curious, creative, adventurous, original, and artistic' (Dvir et al., 2006, p.28). This can be seen as being M (abstractedness). The results of the current study showed that no significant relation was found between M (abstractedness) and project type. Though, with a p-value of 0.199, the results indicated that the direction of the relation between M (abstractedness) and project type is the other way around: fixed deliverable projects need a high level of M (abstractedness) and experimental projects need a low level of M (abstractedness) for good progress.

Dvir et al. (2006, p.43) state that a rebellious dreamer has a 'tendency to dream, is optimistic, has a rebellion against authority, and likes risk-taking'. This looks a lot like a low level of G (rule-consciousness). The results of the current study showed a significant relation between the project types and personality factor G (rule-consciousness). However, this relationship is the other way around as suggested in the literature. With a p-value of 0.0025 the results showed that fixed deliverable projects need a low level of

G (rule-consciousness) and experimental projects need a high level of G (rule-consciousness).

It is possible that these differences are caused by the fact that Dvir et al. (2006) did not use one project leader typing model. This may have led to incorrect assumptions about personality factors. In the current study, one personality typing model for the project leader is used, which is also funded in many studies. This increases the reliability of these results.

Müller and Turner (2007a) present that EQ (emotional competencies) is almost always contributing to project success, MQ (managerial competencies) in some cases, and IQ (intellectual competencies) almost never. More specifically, they state that, from EQ, conscientiousness and sensitivity are the main contributors to project success. For renewal project in particular self-awareness is important. The article does not describe the project leader characteristics. Though, they look like some of the 16PF. Conscientiousness can be seen as G (rule-consciousness). Looking at the results of factor G (rule-consciousness) in relation to project's progress, no significant relation was found. Though, the direction seems to differ from the conclusion of Müller and Turner (2007a). The results showed that, with a p-value of 0.197, projects need a high level of G (rule-consciousness) to progress well.

Sensitivity can be seen as I (sensitivity). Looking at this factor in the results, also no significant relation between I (sensitivity) and project's progress was found. Though, again, the direction seems to be the other way around. With a p-value of 0.318 the results show that I (sensitivity) should be high for projects to progress well.

Self-awareness can be seen as a low level of O (apprehension). The results showed very weak evidence for this relation. With a p-value of 0.549 the results of the current study agree with the literature that experimental projects need a low level of O (apprehension). The differences in results of the factors G (rule-consciousness) and I (sensitivity) can be a consequence of the more precise instrument used in the current study. Müller and Turner (2007a) studied EQ, MQ, and IQ and showed that EQ was most important. For this reason it was chosen for the current study to examine the project leader with an instrument focussing on the EQ (personality) of the project leader. This may have lead to other more reliable results within the EQ of Müller and Turner (2007a).

16PF (factor from literature)	Findings from the literature			Results in this study		
	All projects	Fixed deliverable	Experimental	All projects	Fixed deliverable	Experimental
G: Rule-consciousness (rebellious dreamer, conscientiousness)	*Low*: Expedient, nonconforming	*High*: Rule-conscious, dutiful	*Low*: Expedient, nonconforming	<u>Low</u> level of G (weak proof; p = 0.197)	<u>Low</u> level of G (strong proof; p = 0.0025)	<u>High</u> level of G (strong proof; p = 0.0025)
I: Sensitivity (sensitivity)	*Low*: Tough, objective, unsentimental			<u>High</u> level of I (weak proof; p = 0.318)		
M: Abstractedness (openness to experiences)		*Low*: Practical, grounded, down-to-earth	*High*: Abstracted, imaginative, idea-oriented		<u>High</u> level of M (weak proof; p = 0.199)	<u>Low</u> level of M (weak proof; p = 0.199)
O: Apprehension (self-awareness)			*Low*: Self-assured, unworried, complacent			<u>Low</u> level of O (weak proof; p = 0.549)
Q1: Openness to change (bisociative style)			*High*: Open to change, experimenting			<u>High</u> level of Q1 (weak proof; p = 0.234)
Q3: Perfectionism (perceiving)		*Low*: Tolerates disorder, unexacting, flexible	*High*: Perfectionistic, organized, self-disciplined		<u>High</u> level of Q3 (weak proof; p = 0.207)	<u>Low</u> level of Q3 (weak proof; p = 0.207)

Table 6.2: Literature vs. results

The study of Storm and Vuijk (2008) shows a more expansive picture. They name four project types, each containing four important project leader characteristics. Air projects need stimulating, creative, interested, and amiable project leaders. Fire project are in need of diplomatic, self-aware, independent, and autonomous leaders. Water projects need cooperative, cohesive, loyal, and dedicated project leaders. Earth project are in need of pragmatic, realistic, steady, and organizing project leaders. The project types are created from a quadrant of relation and content vs. dynamic and stable. The results of the current study also included information about these project characteristics. Therefore, the studied projects can be divided over the four project types (people oriented and dynamic, people oriented and stable, content oriented and dynamic, content oriented and stable). The project leader characteristics are only named and not explained by Storm and Vuijk (2008). Therefore, these characteristics are linked to the 16PF that seem to be comparable (see Appendix T).

There are some differences in the results from the literature and the results from the current study. The literature states that dynamic and people oriented projects need interested and amiable project leaders. This is seen as project leaders with a high level of A (warmth). The results of the current study, on the other hand, showed that these projects need a low level of A (warmth). Furthermore, the literature says that dynamic

and content oriented projects need diplomatic project leaders. This is seen as a high level of N (privateness). However, the results of the current study showed proof that these projects need a low level of N (privateness). The last difference is also in dynamic and content oriented projects. Literature states that project leaders of dynamic and content oriented projects should be independent. This can be seen as a high level of Q2 (self-reliance). In contradiction with this, the results of the current study displayed proof that this type of projects needs a low level of Q2 (self-reliance). All these results are displayed in Table 6.3.

It is possible that these differences occur, because the personality typing model used in the current study has a better basis in the research field than the one used by Storm and Vuijk (2008). The 16PF questionnaire is a strong model which is often reviewed for flaws. The RDA-model used by Storm and Vuijk (2008) is a model which is not reviewed very often and therefore the chance for flaws is larger. Because the 16PF test is more reliable, the results of the current study are more reliable as well.

An overview of how these issues relate to the results of the current study showed that there are similarities as well as differences (see Table 6.2 and Table 6.3). The similarities are found in the factors O (apprehension) and Q1 (openness to change) related to experimental projects. In relation to the dynamic/stable and people/content oriented projects, the similarities can be found in the factors E (dominance), I (sensitivity), M (abstractedness), O (apprehension), Q2 (self-reliance) (in relation to dynamic and people oriented), and independence.

In relation to fixed deliverable and experimental projects differences can be found in the factors M (abstractedness), Q3 (perfectionism), G (rule-consciousness), and I (sensitivity). In relation to dynamic/stable and people/content oriented the differences are in the factors A (warmth), N (privateness), and Q2 (self-reliance) (in relation to dynamic and content oriented).

There are about as many similarities as differences. This implies that another set of data collection instruments can lead to a different conclusion and a different set of important personality characteristics. Though, as is described above, the differences are expected to occur because the current study uses a more precise and more reliable project leader typing instrument. This indicates that the results of the current study are more reliable than the results of the other study. Though, further research needs to be performed on this research subject.

16PF (factor from literature)	Findings from the literature			Results in this study
	Dynamic and people oriented	Dynamic and content oriented	Stable and content oriented	
A: Warmth (interested, amiable)	*High*: Warm-hearted, caring, attentive to others			Strong proof that <u>dynamic</u> and <u>people</u> oriented projects need a <u>low</u> level of <u>A</u> (the three projects have score: 5, 4, 2).
E: Dominance (steady)			*High*: Dominant, forceful, assertive	Strong proof that <u>stable</u> and <u>content</u> oriented projects need a <u>high</u> level of <u>E</u> (the five projects have scores: 6, 6, 7, 8, 6).
I: Sensitivity (pragmatic)			*Low*: Tough, objective, unsentimental	Weak proof that <u>stable</u> and <u>content</u> oriented projects need a <u>low</u> level of <u>I</u> (the five projects have scores: 4, 4, 7, 7, 5).
M: Abstractednes s (creative, realistic)	*High*: Abstracted, imaginative, idea-oriented		*Low*: Practical, grounded, down-to-earth	Weak proof that <u>dynamic</u> and <u>people</u> oriented projects need a <u>high</u> level of <u>M</u> (the three projects have score: 5, 7, 7). Strong proof that <u>stable</u> and <u>content</u> oriented projects need a <u>low</u> level of <u>M</u> (the five projects have scores: 3, 3, 3, 4, 5).
N: Privateness (diplomatic)		*High*: Forthright, genuine, artless		Strong proof that <u>dynamic</u> and <u>content</u> oriented projects need a <u>low</u> level of N (the two projects have scores: 3, 4).
O: Apprehension (self-aware)		*Low*: Self-assured, unworried, complacent		Weak proof that <u>dynamic</u> and <u>content</u> oriented projects need a <u>low</u> level of <u>O</u> (the two projects have scores: 5, 5).
Q2: Self-reliance (stimulating, independence, cooperative, cohesive)	*Low*: Group-oriented, affiliative	*High*: Group-oriented, affiliative		Weak proof that <u>dynamic</u> and <u>people</u> oriented projects need a <u>low</u> level of Q2 (the three projects have score: 4, 1, 6). Strong proof that <u>dynamic</u> and <u>content</u> oriented projects need a <u>low</u> level of <u>Q2</u> (the two projects have scores: 2, 5).
Independence (autonomous)		*High*: Independent, persuasive, wilful		Weak proof that <u>dynamic</u> and <u>content</u> oriented projects need a <u>high</u> level of <u>independence</u> (the two projects have scores: 65, 48).

Table 6.3: Literature vs. results (Storm and Vuijk, 2008)

7 REFLECTION OF THE RESEACH PROCESS

The results of the study are now clear and can be used to match project leaders to projects. Though, the reliability of the results is tainted because of some methodological issues. This will be discussed in the first half of this chapter. The second half will discuss the suggestions for further research.

7.1 Reflection of research methodology

Although the methodology was set up as solid as possible, some important implications should be mentioned. The study was meant to be an explorative research. This implies that the focus was more on finding what is present in the field, than looking at specific issues of interest. This makes that the study was broadly oriented and therefore neglected some details which might have been important as well. Moreover, the sample was not ideal. It was only possible to find ten projects in which the members were willing to participate. Of these projects only one per project type was not progressing well. This makes statements about bad progress projects very weak (only based upon one or two projects). Statements about projects with a good progress are stronger though. Also related to the sample, is the analysis of the 16PF in relation to specific characteristics of project types. This analysis was performed and showed some results. However, these are not seen as main results, because such a small sample cannot provide reliable information about this detailed analysis. Though, the results indicate that further research can show interesting results.

Furthermore, it was assumed that when the project's progress was good, there was a match between project leader and project type. This statement is not yet proven to be true. Though, according to the literature, the characteristics of the project leader are a critical success factor and the results showed that the relation between project leader characteristics and progress is intermediated by project type. This suggests that when projects go well, the project leaders do have certain characteristics that differ per project type.

The data was gathered in one country only. For the current research setting this was enough. Though, this does only provide a picture for the Netherlands and cannot be globalized to other countries without studying whether or not there is a difference.

Also, the projects in the dataset were analyzed based on progress of the project. Though, if a project is doing well at this moment, this does not necessarily mean that it will end successfully. So many things can happen between now and the end of the project, which will lead to poor progress without any influence of the project leaders characteristics.

During the data analysis the dataset was kept as rich as possible. Though, for some analysis it was necessary to decrease the richness of the data. Project's progress for example needed to be good or not good for some analyses. It is possible that this neglected some important details.

Moreover, questionnaires and interviews do have some disadvantages. Some main disadvantages for questionnaires are: possible gaps between what people do or think and what they report, closed end questions can be restrictive, and it is easy to overlook, skip around and misunderstand questions (Nardi, 2006). On the other hand, some main advantages are that it is less costly and easier to reach a larger sample, it can guarantee anonymity, respondents can answer at own pace, and it gives the possibility to address multiple topics in one questionnaire (Nardi, 2006). These advantages are also the reasons why the questionnaire was the instrument of choice for this study.

Interviews also have some advantages and disadvantages. The main disadvantages are that it is limited to a smaller sample, it is time consuming, the interviewer can influence the respondent, and it is not ideal to collect sensitive information (Nardi, 2006). Main advantages of interviews are the option for standardized questions when using structured interviews, good to use for exploring or acquiring additional information, the respondent can clarify the meaning of answers given, and unanticipated answers can occur (Nardi, 2006). The interview method was used in this study because it of its good use for exploring and acquiring additional information.

7.2   Further research

Looking at the results of this study, some questions arise, which can be studied in the future. One of the most obvious questions may be the question about other project types. This study focused on the two types fixed deliverable and experimental projects, but there are so many more. Are there also relevant project leader characteristics for these and if so, which are these?

Furthermore, what if other methodologies are used? As was already seen when the results were linked to the literature, a lot of differences do appear. This implied that different methodologies show different outcomes. Which is true? How to find out? What overlap does occur and does is occur more often?

Another issue is that it is not sure whether the characteristics that are found to positively influence the progress of the project, do necessarily lead to project success. In this study the progress of the project was analyzed, but this does not per se lead to a successful end result. Literature suggests that the chance of success increases with good progress, but it is no guarantee. Especially because there are external factors not under control of

the project leader that influence success also. This raises the question whether or not the relationships found in the study lead to project success.

Moreover, as the results of the study showed, effective project leader characteristics seem to be related to specific project characteristics, like the phase of the project. In what amount does this influence the success of the project? Also considering other effects, might it be wise to switch type of project leader after a certain phase or when other groups get involved in the project?

Also the culture of the project leader and/or project team may be an issue. Is it important that the project leader has the same cultural background as the project team members? Do important characteristics differ per culture? Does a different company culture influence the important characteristics of the project leader?

The number of questions raised shows that there are still a lot of issues to be investigated in this field. Some are expected to stay open in the next few years, because they will need to have lots of research done beforehand. To be able to do more reliable research about the issue of the relationship between project leader and project type, it is necessary to have a good categorization system for project leaders as well as project types. Therefore, it is suggested that studies should first focus on this aspect of the research field. When proper instruments are available, the research field can be expanded to the (inter)relationships between the project leader and the project type. This way of working will increase the reliability level of the results and, therefore, the results will be more useful.

Until then, the results of the current study can provide insight in the relationships between project leaders characteristics and project progress.

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9 APPENDICES

Appendix A. Extensive summaries four articles

McDonough III, 1990

Further information	Research model	Context	Main results				Limitations
State-of-the-art: the technology which any competent engineer should be knowledgeable about	Hypothesis 1: type of work will moderate the relationship between a bisociative style and project performance (more effective in technology projects)	Questionnaires and interviews	*New technology projects*	*Minor modification projects*	*Application projects*	*General*	Performance data was gathered from one person only
	Hypothesis 2: type of work will moderate the relationship between an associative style and project performance (more effective in applications projects)	UK	Positive relationship between performance and bisociative style and level of education	Negative relation between local orientation and performance	Negative relation between performance and number of years with company and age	Performance is affected by the PL and this relation is mediated by type of project	
	Hypothesis 3: type of work will moderate the relationship between a cosmopolitan orientation and project performance (more effective in technological projects)	41 projects in 13 firms in a variety of technology industries					Performance measure is subjective
	Hypothesis 4: type of work will moderate the relationship between a local orientation and project performance (more effective in application projects)	NPD projects were used: projects that are undertaken for the purpose of developing a new product	Negative relationship between associative style and performance	Positive relation between performance and bisociative style, years in present position, and age			The cosmopolitan construct was left out
	Hypothesis 5: type of work will moderate the relationship between background characteristics and project performance						
	Hypothesis 5a: for applications projects, older less educated project leaders with longer tenure will be associated with higher performance	Projects were selected based on usuality and more and less effective projects were reviewed					Only projects in the design phase were reviewed
	Hypothesis 5b: for new technology projects, younger, more educated project leaders with shorter company and position tenure will be associated with higher performance						

Dvir et al., 2006

Research model	Context	Main results	Limitations
It is assumed that project managers are attracted to and more successful in managing projects that fit their personality and that this is manifested in the relationships among project profiles, project managers' personality characteristics, and project success	Self-reported questionnaire	There is a different relationship among different types of managers and different dimensions of managers and different dimensions of project success for different types of projects	Sample size did not cover the whole spectrum
Hypothesis 1: Projects managed by managers whose personality characteristics match their projects' profiles will be more successful than projects managed by managers whose personality characteristics do not match their projects' profiles	Israel	*Derivative, low-tech projects*: customer satisfaction is negatively correlated with investigative and anxious/ambivalent attachment. *Platform projects*: creating new opportunities is positively correlated with entrepreneur. *High-tech projects*: efficiency is negatively correlated with type A and openness to experiences.	Methodologies should be added; not only questionnaire
Hypothesis 2: Project managers will be attracted to and will be more successful managing projects that fit their personality characteristics	89 Israeli project managers leading 89 projects	*Project managers* tent to prefer to manage projects they like. Managers who are high in perceiving and intuition like high-tech compared to low-tech projects. Managers who rate high on rebellious dreamer and have an avoidant attachment style tend to avoid high-tech projects and prefer derivative and platform projects.	Personality measures are assumed
	Project leaders were approached by senior BSc students to fill in the questionnaire	Support for both hypotheses	

Müller and Turner, 2007a

Information	Research model	Method			Context	Main results	Limitations
Interview results suggest that intellectual competencies are less important than the other two	Combined impact of PL and project on success	*Semi-structured interviews* with persons responsible for assigning project leaders	*Web-based questionnaire:* Four sets of questions:	*Qualitative judgment of success criteria*	Worldwide	Hypotheses are supported	None comprehensive model, because it does not include all project categorization attributes, but when hypothesis is supported with these, the model is supported
					Questionnaire was send to members of PM associations	EQ is almost always contributing to success, MQ sometimes and IQ is occasionally negatively correlated to success	
	Whether the project manager's leadership style influences project success	Used to identify factors applied by managers to assign project leaders to projects and to test validity of research model	Project type: One or several type should be selected per attribute		400 project managers		
Achieving, managing resources and motivation are the most important	Whether different leadership styles are appropriate for different types of project	14 line managers were interviewed in 8 countries and several industries	Project success: the criteria judged on applicability to project on 5-point Likert scale. In addition importance was asked on the same scale		Most recent projects	See tables for specific information	
	Hypothesis 1: The project manager's competency, which includes his or her leadership style, is positively correlated to project success	Added some success criteria	Leadership: 189 questions with a 5-point Likert scale			The project manager's leadership style influences project success	
	Hypothesis 2: Different combinations of project leadership competency are correlated with success on different types of project		Demographic: the respondent's job function, education, nationality, age, gender and project management certification were asked			Different leadership styles are appropriate for different types of projects	

Storm and Vuijk, 2008

Research model	Method	Context	Main results
Not included in the article	128 questions about characteristics and 64 questions about values	The Netherlands	Project rol Diagrammatische aanpak (PrDA) model is created
			Competencies that are successful for one project do not have to be successful for the other project

Appendix B. Comparison project categorization & project leader typing models

Project categorization models

	Dvir et al.	Müller and Turner	McDonough III	Strom and Vuijk								
Attribute	Novelty	Strategic importance	-	Product breakdown structure = goal definition	**Category**	*Dvir et al.*	Breakthrough	Platform	Derivative			
						Müller and Turner	Renewal	Repositioning	Mandatory			
						Strom and Vuijk				Well defined	Ill defined	
Attribute	Complexity	Complexity	-	-	**Category**	*Dvir et al.*	Array	System	Assembly			
						Müller and Turner	High	Medium	Low			
Attribute	Uncertainty	Strategic importance	See classifications	-	**Category**	*Dvir et al.*	Low-tech		Medium-tech	High-tech	Super-high tech	
						Müller and Turner	Mandatory		Repositioning	Renewal		
						McDonough III	Applications engineering	A clever combination of mature technologies	Applying state-of-the-art technology	A minor extension of the state-of-the-art technology	A major extension of the state-of-the-art technology	Development or application of new technology
Attribute	Pace	-	-	-	**Category**	*Dvir et al.*	Regular	Fast	Critical			
Attribute	-	Life cycle	-	Work breakdown structure = methods definition	**Category**	*Müller and Turner*	Feasibility	Design	Execution	Close-out	Commissioning	
						Strom and Vuijk				Well defined	Ill defined	
Attribute	-	Application area	-	-	**Category**	*Müller and Turner*	Engineering and construction	Information systems	Organization and business			
Attribute	-	Culture	-	-	**Category**	*Müller and Turner*	Host	Expatriate				
Attribute	-	Contract type	-	-	**Category**	*Müller and Turner*	Fixed price	Remeasurement	Alliance			

	Storm & Vuijk	McDonough III			McDonough III (main categories)
Project	Earth	Applications engineering	A clever combination of mature technologies	Applying state-of-the-art technology	Applications projects
Project	Water	-	-	-	-
Project	Fire	A minor extension of the state-of-the-art technology	-	-	Minor modification projects
Project	Air	A major extension of the state-of-the-art technology	Development or application of new technology	-	New technology projects

Project leader typing models

	Dvir et al.	Müller and Turner	McDonough III	Strom and Vuijk								
Attribute	Openness to experience	-	Cognitive style	Dynamic vs. stable	**Category**	*Dvir et al.*	High	Low				
						McDonough III	Bisociative	Associative				
						Strom and Vuijk	Dynamic	Stable				
Attribute	Inventor	-	-	-	**Category**	*Dvir et al.*	Intuition	Perceiving	Extroversion			
Attribute	Investigative and enterprising	-	-	-	**Category**	*Dvir et al.*	Prefer working on scientific projects	Prefer leading a group toward reaching a goal				
Attribute	Risk-taking tendency	-	-	-	**Category**	*Dvir et al.*	Entrepreneurial	Investment	Managerial			
Attribute	Type A behaviour pattern	-	-	-	**Category**	*Dvir et al.*	High	Low				
Attribute	Personality traits	-	Career orientation	-	**Category**	*Dvir et al.*	Managerial	Entrepreneurial				
						McDonough III	Local orientation		Cosmopolitan orientation			
Attribute	Attachment styles	-	-	-	**Category**	*Dvir et al.*	Secure	Avoidant	Anxious/ ambivalent			
Attribute	-	Emotional competencies	-	Relation oriented	**Category**	*Müller and Turner*	Motivation	Conscientiousness	Sensitivity	Influence	Self-awareness	Emotional resilience	Intuitiveness
Attribute	-	Managerial competencies	-	Content oriented	**Category**	*Müller and Turner*	Managing resources	Engaging communication	Developing	Empowering	Achieving	
Attribute	-	Intellectual competencies	-	-	**Category**	*Müller and Turner*	Strategic perspective	Vision and imagination	Critical analysis	Judgement		
Attribute	-	-	Demographic characteristics	-	**Category**	*McDonough III*	Tenure with the company	Tenure in one's present position	Age	Educational background		

Appendix C. The five factor model from different authors till 1990

Author	Extraversion	Agreeableness	Conscientiousness	Emotional Stability	Openness
Bales	Dominant Iniative	Social-Emotional Orientation	Task Orientation		
Borgatta (1964)	Assertiveness	Likeability	Task interest	Emotionality	Intelligence
Buss and Plomin (1984)	Activity	Sociability	Impulsivity	Emotionality (r)	
Cattell (1957)	Exvia	Pathemia	Superego Strength	Anxiety	Intelligence
Comrey	Extraversion and Activity	Femininity	Orderliness and Social Conformity	Emotional Stability	Rebelliousness
Costa and McCrae (1985)	Extraversion	Agreeableness	Conscientiousness	Neuroticism (r)	Openness
Digman (1988)	Extraversion	Friendly compliance	Will to achieve	Neuroticism	Intellect
Eysenck (1970)	Extraversion	Psychoticism (r)		Neuroticism (r)	
Fiske (1949)	Social adaptability	Conformity	Will to achieve	Emotional Control	Inquiring Intellect
Gough	Extraversion	Consensuality	Control		Flexibility
Guilford (1975)	Social Activity	Paranoid Disposition (r)	Thinking Introversion	Emotional Stability	
Hogan (1986)	Ambition and Sociability	Likeability	Prudence	Adjustment	Intellectance
Jackson	Outgoing, Social Leadership	Self-Protective Orientation (r)	Work Orientation	Dependence (r)	Aesthetic / Intellectual
Lorr (1986)	Interpersonal involvement	Level of socialization	Self-control	Emotional stability	independent
Myers- Briggs	Extraversion vs. Introversion	Feeling vs. Thinking	Judging vs. Perception		Intuition vs. Sensing
Norman (1963)	Surgency	Agreeableness	Conscientiousness	Emotional	Culture
Peabody and Goldberg (1989)	Power	Love	Work	Affect	Intellect
Tellegen	Positive Emotionality		Constraint	Negative Emotionality	Absorption
Tupes and Christal (1961)	Surgency	Agreeableness	Dependability	Emotionality	Culture

Source: Digman, 1990, personalityresearch.org

Appendix D. Comparison project categorization attributes and categories

	Müller & Turner	Crawford et al.	Evaristo & Fenema, van	Youker	Meredith & Mantel Jr.
Attributes	Strategic importance	Strategic importance	-	-	Reason to start the project
Attributes	Complexity	Complexity	-	-	-
Attributes	Strategic importance	Uncertainty, ambiguity, familiarity	-	-	-
Attributes	-	Project timing	-	-	-
Attributes	Life cycle	Stage of life cycle	-	Stage of project life cycle	-
Attributes	Application Area	Application area/product of project	-	Industrial sector Product of the project	-
Attributes	Culture	-	-	-	-
Attributes	Contract type	Contractual issues	-	-	-
Attributes	-	Stand alone or grouped	Single project or program	-	-
Attributes	-	Strategic driver	-	-	-
Attributes	-	Geography	Location	Geographical location	-
Attributes	-	Project scope	-	-	-
Attributes	-	Risk	-	-	-
Attributes	-	Customer/supplier relations	-	-	-
Attributes	-	Ownership/funding	-	-	-

Comparison of project categorization attributes

Attributes	Categories										
Strategic importance	*Crawford et al.*	Business strategic	Business critical	Mandatory							
	Müller and Turner	Renewal	Repositioning	Mandatory							
	Meredith and Mantel Jr.		Product line extension	Competitive necessity	Operating necessity	Sacred cow	Comparative benefit model				
Complexity	*Crawford et al.*	High	Medium	Low							
	Müller and Turner	High	Medium	Low							
Uncertainty, ambiguity, familiarity	*Crawford et al.*	Low-tech	Medium-tech	High-tech	Super-high tech						
	Müller and Turner	Mandatory	Repositioning	Renewal							
Stage of life cycle	*Crawford et al.*	Initiation/ concept	Planning/ development	Implementation/ execution	Finalization/ commissioning/ hand over						
	Müller and Turner	Feasibility	Design	Execution	Close-out	commissioning					
Application area	*Crawford et al.*	Administrative	Construction	Computer software	Design	Maintenance	New product development	Equipment or system installation	Event or relocation	Research	Other
	Müller and Turner		Engineering and construction	Information systems		Organization and business					
	Youker		Construction of a building				Development of a new product				
Contractual issues	*Crawford et al.*	Fixed price	Target price	Flexible price	Alliance strategy	Partnering strategy	Hybrid strategy				
	Müller and Turner	Fixed price		Remeasurement	Alliance						
Stand alone or grouped	*Crawford et al.*	Large project	Small project	Program	Portfolio						
	Evaristo and van Fenema	Single project		Program							
Geography	*Crawford et al.*	One city or region	National	International							
	Evaristo and van Fenema				Single project, single site	Distributed project	Single program, single site	Many projects, many sites	Distributed program	Multiple distributed projects	Multiple distributed program

Comparison of project categorization categories

Appendix E. Grouping of Crawford et al.'s (2005/2006) attributes

Timing
- Stage of life cycle
- Project timing
Client
- Customer/supplier relations
- Ownership/funding
- Contractual issues
Product
- Application area/product of project
- Project scope
Characteristics
- Risk
- Uncertainty, ambiguity, familiarity
- Complexity
Location
- Geography
- Stand-alone or grouped
Strategy
- Strategic importance
- Strategic driver

Appendix F. List with statements to test project type

	Som van 5		
Voorbeeld: *Samenwerking is belangrijk*	*4*	*1*	*Het behalen van de planning is belangrijk*
We moeten ons houden aan het plan			Er is volop ruimte voor nieuwe ideeën en inzichten die opkomen tijdens de uitvoering
Het is belangrijk dat iedereen zich aan de regels houdt			Het is belangrijk dat iedereen het naar zijn zin heeft
We laten zien wat we bereikt hebben			We vinden het geweldig om naar de volgende mijlpaal onderweg te zijn
We vinden het wiel niet opnieuw uit			We ondervinden gaandeweg hoe we het moeten doen
Het is belangrijk om de realiteit onder ogen te zien			Het is geweldig om een mooie ambitie te hebben
Het is belangrijker dat het plan logisch in elkaar zit			Het is belangrijker dat het plan betrokkenen vertrouwen geeft
Iedereen weet wat zijn taak is			Iedereen weet wat zijn taak is en wat deze bijdraagt aan het geheel
Besluitvorming gebeurt op basis van duidelijke regels en feitelijke informatie			Besluitvorming gebeurt op basis van 'blauwe ogen' en buikgevoel
De plannen zijn realistisch			De plannen zijn stimulerend en uitdagend
In onze communicatie is het belangrijk dat we een consistent verhaal brengen			In onze communicatie richten we ons op de belangen van verschillende groepen betrokkenen
Het is belangrijk te weten waar we ons nu bevinden			Het is belangrijk te weten waar we naar toe willen
Als er conflictsituaties ontstaan, proberen we die met nieuwe regels het hoofd te bieden			Als er conflictsituaties ontstaan, luisteren we goed naar de belangen van de verschillende partijen
In een vergadering hebben we het meestal over de actuele stand van zaken			In een vergadering besteden we veel aandacht aan toekomstplannen
Het gaat om het waarmaken van resultaten			Het gaat om het volgen van je ambities
Problemen onderweg lossen we pragmatisch op			Problemen onderweg hinderen ons niet bij het realiseren van onze ideeën
We realiseren aan het eind iets voor toekomstige gebruikers			Gebruikers participeren in het project van begin tot eind
Zoiets lukt want we hebben het eerder gedaan			Zoiets lukt want het biedt nieuw perspectief
Vooraf leggen we onze eisen vast waaraan we moeten voldoen			Gaandeweg wordt duidelijk welke wensen en ideeën partijen hebben
We zullen grote risico's zorgvuldig vermijden			We zullen alle kansen die we tegenkomen benutten
De juiste expertise in het team is de basis voor succes			Een goede onderlinge verstandhouding tussen de teamleden is de basis voor succes

Appendix G. Comparison success factor lists

Pinto and Slevin (1988/1989)	White and Fortune (2002)
Project mission	Clear goals/objectives
	Having a clear project boundary
Top management support	Support from senior management
	Adequate funds/resources
Power and politics	
Schedule and plans	Realistic schedule
	Provision of planning and control systems
Client consultation	Support from stakeholder(s)/champion(s)
	Considering multiple views of project
Personnel recruitment	
	Having relevant past experience
	Effective team building/motivation
Technical tasks	Having access to innovative/talented people
	Taking account of past experience
	Training provision
Client acceptance	End user commitment
	Flexible approach to change
Monitoring and feedback	Effective monitoring and feedback
Communication	Clear communication channels
Trouble-shooting	Effective management of risk
Characteristics of the project team leader	Effective leadership/conflict resolution
Urgency	
Environmental events	Taking account of external influences
	Contextual awareness
	Recognizing complexity
	Appreciating the effect of human error

Appendix H. Short description of the projects

Project 1

Project 1 is a fixed deliverable project in a municipality in the Netherlands and the project team is working on it for several years already. The project is now in the design phase and a detailed planning is available for the whole time scale of the project. The project team works together with other project teams on other locations on the same deliverable. With a progress level of 11.17 the progress is good.

Project 2

Also project 2 is a fixed deliverable project in a municipality in the Netherlands which is ongoing for a few years already. The project is in the feasibility phase and the entire time path is planned in detail. Also here the project team works together with other project teams on other locations on the same deliverable. With a progress level of 11.25 this project is also progressing well.

Project 3

Project 3 is a fixed deliverable project in a municipality in the Netherlands started for about a year ago. The project is in the design phase and a global planning for the entire project is available. The details of the planning are determined at the start of a new step. Also this project team works together with other project teams on other locations on the same deliverable. With a progress level of 10.00 also this project is progressing well.

Project 4

Project 4 is another fixed deliverable project in a municipality in the Netherlands already ongoing for a few years. The project is in the design phase and also here a global planning for the entire project is available, but the details are determined at the start of a new step. The project team does not work together with other project teams. With a progress level of 5.67 this is a poor progressing project.

Project 5

Project 5 is the last fixed deliverable project in a municipality in the Netherlands and has been going on for a few years already. The project is in between the feasibility and design phase. There is no global planning, but a detailed planning for the next step is available. The project team works together with other project teams on other locations on the same deliverable. With a progress level of 10.00 the project is progress well.

Project 6

Project 6 is an experimental project working on an issue relevant for the Netherlands as a country. The project is in the developmental phase and a planning for the next step is available. The project team is working together with other project teams on different locations and the project activities are therefore spread over locations in the Netherlands. With a progress level of 11.33 this is a good progressing project.

Project 7

Project 7 is an experimental project working together with AIO's from a university in the Netherlands. The project is in the research phase and a global planning for the entire project is available. The project team does not work together with other project teams, but project activities do take place at several locations in the Netherlands. With a progress level of 9.00 the project is going well.

Project 8

Project 8 is an experimental project studying a recent situation in the Netherlands. The project is in the finalizing phase and a detailed planning is available for the next step. The project team works on its own and all project activities take place on one location in the Netherlands. With a progress level of 11.75 the project is progressing well.

Project 9

Project 9 is an experimental project in a research department in a company in the Netherlands. The project is in the research phase and a detailed planning for the next step is available. The project team does not work together with other project teams and all project activities take place on the same location in the Netherlands. The progress level of this project is 10.40, but because of a large discrepancy between this number and the opinion about the progress it is decided that this is a poor progress project (see Appendix P).

Project 10

Project 10 is the last experimental project and is a cooperation between a company in the Netherlands and some AIO's. The project is in the research phase and a global planning of the entire project is available. The project team work alone, but activities take place on multiple locations in the Netherlands. With a progress level of 9.86 the project is progressing well.

Appendix I. 16PF personality test for the project leader

Persoonlijkheidstest projectleider

In opdracht van p2 doe ik een onderzoek naar de relatie tussen persoonlijkheid van de projectleider en het projecttype enerzijds, en de kans op projectsucces anderzijds. Dit onderzoek voer ik uit bij lopende projecten. Het project waar u in betrokken bent, is één van de geselecteerde projecten. Daarom wil ik u verzoeken onderstaande vragenlijst in te vullen.
Het invullen van de vragenlijst duurt ongeveer 45 minuten. Alle antwoorden worden anoniem verwerkt.

1   Ik zal elke vraag zo eerlijk mogelijk beantwoorden.
    a. Ja
    b. Misschien
    c. Nee

2   Ik zou het liefst een huis hebben:
    a. In een gezellige woonwijk
    b. Tussenin
    c. Alleen in een diep bos

3   Ik bezit voldoende energie om mijn problemen het hoofd te bieden.
    a. Altijd
    b. Meestal
    c. Een enkele keer

4   Ik voel me wat zenuwachtig bij wilde dieren, zelfs als ze in een stevige kooi zitten.
    a. Ja
    b. Onzeker
    c. Nee

5   Ik onthoud me ervan mensen en hun ideeën te kritiseren.
    a. Ja
    b. Soms
    c. Nooit

6   Ik maak scherpe, sarcastische opmerkingen tegen mensen als ik vind dat ze dat verdienen.
    a. Vaak
    b. Soms
    c. Nooit

7   Ik houd meer van semi-klassieke muziek dan van populaire tunes.
    a. Ja, veel meer
    b. Onzeker
    c. Nee

8   Als ik twee buur jongetjes zou zien vechten, dan zou ik:
    a. Het hun zelf laten oplossen
    b. Onzeker
    c. Met hen gaan praten

9   Bij party's en feestjes:
    a. Treed ik altijd makkelijk op de voorgrond
    b. Tussenin
    c. Blijf ik liever wat op de achtergrond

10 Het lijkt mij interessanter om te zijn:
    a. Een bouwkundig ingenieur
    b. Geen voorkeur
    c. Auteur van toneelspelen

11	Ik blijf op straat liever staan om een kunstenaar te zien schilderen, dan om naar ruziënde mensen te luisteren.	a. Ja, beslist b. Onzeker c. Nee
12	Ik kan wel opschieten met verwaande mensen, zelfs als ze opscheppen of laten merken een hoge dunk van zichzelf te hebben.	a. Ja, over 't algemeen wel b. Tussenin c. Nee
13	Je kunt aan iemand gezicht zien of hij oneerlijk is.	a. Ja, bijna altijd b. Tussenin c. Nee
14	Het zou goed voor iedereen zijn, als de vakanties langer waren, en iedereen verplicht was ze op te nemen.	a. Ja b. Geen mening c. Nee
15	Ik zou liever gokken op een baan met de kans op hoge maar ongelijke verdiensten, dan een baan met een vast, gering salaris.	a. Ja b. Onzeker c. Nee
16	Praten over mijn gevoelens doe ik:	a. Alleen als dat nodig is b. Tussenin c. Makkelijk, wanneer ik daartoe de kans heb
17	Ik heb wel eens een onbestemd gevoel van gevaar of dreiging om redenen die ik niet begrijp.	a. Ja b. Zelden c. Nee
18	Als ik ten onrechte word bekritiseerd, voor iets wat ik niet heb gedaan:	a. Heb ik geen schuldgevoelens b. Tussenin c. Voel ik me toch een beetje schuldig
19	Met geld kun je bijna alles kopen:	a. Ja b. Tussenin c. Nee
20	Mijn beslissingen worden mij vooral ingegeven door:	a. Mijn hart b. Gevoel en verstand in gelijke mate c. Mijn hoofd
21	De meeste mensen zouden tevredener zijn, als ze meer leefden zoals hun vrienden en meer dezelfde dingen deden als anderen.	a. Ja b. Geen mening c. Nee
22	Als ik in een spiegel kijk, raak ik in de war over wat nu rechts of links is.	a. Ja, soms b. Weet niet c. Nee
23	Als ik praat houd ik ervan:	a. De dingen te zeggen zoals ze bij me opkomen b. Tussenin c. Eerst mijn gedachten behoorlijk te ordenen

24 Als iets me verschrikkelijk kwaad maakt merk ik dat ik toch weer vrij snel kalm word.

    a. Ja
    b. Tussenin
    c. Nee

25 Bij dezelfde werktijden en betaling, zou ik het interessanter vinden te zijn:

    a. Timmerman of kok
    b. Geen voorkeur
    c. Ober of serveersters in een goed restaurant

26 Ik ben gevraagd voor:

    a. Slechts een paar bezigheden
    b. Verschillende
    c. Vele bezigheden

27 'Schep' staat to 'spitten' als 'mes' tot:

    a. Scherp
    b. Snijden
    c. Punt

28 Ik kan soms niet in slaap komen omdat ik mijn gedachten niet stil kan zetten.

    a. Soms
    b. Zelden
    c. Nooit

29 In mijn privé leven bereik ik de doelen die ik me stel.

    a. Vrijwel altijd
    b. Soms
    c. Bijna nooit

30 Een verouderde wet moet vervangen worden:

    a. Slechts na zorgvuldige discussie
    b. Tussenin
    c. Zo gauw mogelijk

31 Ik voel me niet op mijn gemak als ik aan een project werk, dat snelle acties vereist die anderen treffen.

    a. Waar
    b. Onzeker
    c. Onwaar

32 De meeste mensen die ik ken, beschouwen me als een amusante spreker.

    a. Ja
    b. Onzeker
    c. Nee

33 Als ik onverzorgde, 'sjofele' mensen zie:

    a. Accepteer ik dat gewoon
    b. Tussenin
    c. Stoort met dat, het roept afkeer op

34 Ik raak wat in verlegenheid als ik plotseling in een groep het middelpunt van de belangstelling word.

    a. Ja
    b. Tussenin
    c. Nee

35 Ik vind het altijd fijn om me bij een grote groep te voegen, bijvoorbeeld een party, een receptie of een vergadering.

    a. Ja
    b. Tussenin
    c. Nee

36 Op school verkoos (of verkies) ik:

    a. Muziek
    b. Geen voorkeur
    c. Handenarbeid of –vaardigheid

37 Als ik de leiding heb over iets, dan stat ik erop dat mijn instructies nageleefd worden, of anders stop ik ermee.

   a. Ja
   b. Soms
   c. Nee

38 Voor ouders is het belangrijker:

   a. Hun kinderen te helpen hun gevoelens te ontwikkelen
   b. Tussenin
   c. Hun kinderen te leren hoe hun emoties te beheersen

39 Bij een groepsopdracht zou ik liever:

   a. Proberen wat afgesproken is nog te verbeteren
   b. Geen voorkeur
   c. De afspraken vastleggen en er op toezien dat ze uitgevoerd worden

40 Af en toe heb ik de behoeft om aan een stevige fysieke bezigheid mee te doen.

   a. Ja
   b. Tussenin
   c. Nee

41 Ik ga liever om met correcte, beleefde mensen, dan met ruwe, rebelse individuen.

   a. Ja
   b. Tussenin
   c. Nee

42 Ik voel me teneergeslagen als mensen me in een groep bekritiseren.

   a. Ja, hevig
   b. Een beetje
   c. Nee

43 Als mijn baas mij bij zich roept:

   a. Neem ik de gelegenheid te baat om hem iets te vragen dat ik wil
   b. Tussenin
   c. Vrees ik dat ik iets verkeerds gedaan heb

44 Wat deze wereld nodig heeft, is:

   a. Meer solide, eerlijke burgers
   b. Tussenin
   c. Meer idealisten met plannen voor een betere wereld

45 Ik let altijd scherp op pogingen tot propaganda in de dingen die ik lees.

   a. Ja
   b. Onzeker
   c. Nee

46 Als tiener deed ik op school aan sport mee.

   a. Een enkele keer
   b. Vrij vaak
   c. Erg veel

47 Ik houd mijn kamer geordend, met de spullen bijna altijd op vaste plaatsen:

   a. Ja
   b. Tussenin
   c. Nee

48 Ik krijg soms een spannend of opgewonden gevoel als ik aan de gebeurtenissen van de dag denk.

   a. Ja
   b. Tussenin
   c. Nee

49 Ik twijfel wel eens of de mensen met wie ik praat wel echt geïnteresseerd zijn in wat ik zeg.

a. Ja
b. Tussenin
c. Nee

50 Als ik kon kiezen, zou ik liever zijn:

a. Boswachter
b. Geen voorkeur
c. Een leraar op een middelbare school

51 Op bijzondere dagen en verjaardagen:

a. Geef ik graag persoonlijke cadeaus
b. Onzeker
c. Vind ik het kopen van cadeaus eigenlijk wel lastig

52 'Moe' staat tot 'werk' als 'trots' tot:

a. Glimlach
b. Succes
c. Gelukkig

53 Welke van de volgende woorden behoort niet bij de andere twee?

a. Kaars
b. Maan
c. Elektrisch licht

54 Ik ben door mijn vrienden in de steek gelaten:

a. Bijna nooit
b. Wel eens
c. Dikwijls

55 Ik bezit een paar eigenschappen, waarin ik me superieur voel aan de meeste mensen.

a. Ja, beslist
b. Enigszins
c. Nee

56 Als ik van streek raak, doe ik mijn uiterste best mijn gevoelens voor anderen te verbergen.

a. Ja
b. Tussenin
c. Nee

57 Ik ga graag naar een voorstelling of plaats om uit te gaan:

a. Meer dan één keer per week (boven gem.)
b. Één keer per week (gemiddeld)
c. Minder dan één keer per week (onder gem.)

58 Ik denk dat veel vrijheid belangrijker is dan goede manieren en respect voor de wet.

a. Ja
b. Onzeker
c. Nee

59 Ik ben meestal wat stil in de nabijheid van hoge personen (mensen met meer ervaring, prestige of leeftijd).

a. Waar
b. Onzeker
c. Onwaar

60 Ik vind het moeilijk een grote groep toe te spreken of iets voor te dragen.

a. Ja
b. Tussenin
c. Nee

61 Ik heb een goed richtingsgevoel (vind het gemakkelijk te zeggen wat noord-zuid-oost of west is), als ik in een onbekende plaats ben.

a. Ja
b. Tussenin
c. Nee

62   Als iemand kwaad op mij werd, zou ik:

    a. Die persoon trachten te kalmeren
    b. Onzeker
    c. Geïrriteerd raken

63   Als ik een oneerlijk tijdschrift artikel lees, zou ik het van me afzetten en niet het gevoel krijgen 'terug te willen slaan'.

    a. Ja
    b. Onzeker
    c. Nee

64   Mijn geheugen laat veel onbelangrijke, alledaagse dingen weer los, zoals namen van straten of winkels in de stad.

    a. Ja
    b. Tussenin
    c. Nee

65   Ik zou me plezierig voelen in het leven van een dierenarts, bij dieren ziektes behandelen en hen opereren.

    a. Ja
    b. Tussenin
    c. Nee

66   Ik eet mijn eten met graagte, niet altijd even zorgvuldig en netjes zoals sommige anderen.

    a. Ja
    b. Onzeker
    c. Nee

67   Er zijn tijden dat ik me niet in de juiste stemmin voel om iemand te zien.

    a. Zeer zelden
    b. Tussenin
    c. Vrij vaak

68   Mensen waarschuwen me wel eens, dat ik mijn opwinding in stem en gedrag teveel toon.

    a. Ja
    b. Tussenin
    c. Nee

69   Als ik in mijn tieneraren van mening verschilde met mijn ouders, dan:

    a. Hield ik meestal vast aan mijn eigen mening
    b. Tussenin
    c. Accepteerde ik meestal hun autoriteit

70   Ik zou het liefst een eigen bureau hebben, niet gedeeld met een ander.

    a. Ja
    b. Tussenin
    c. Nee

71   Ik geniet liever in alle rust van mijn eigen leven dan dat ik bewonderd wil worden voor mijn prestaties.

    a. Ja
    b. Onzeker
    c. Nee

72   Ik voel me in de mest dingen volwassen.

    a. Ja
    b. Onzeker
    c. Nee

73   Ik raak eerder in de war dan dat ik me geholpen voel door het soort kritiek dat veel mensen uiten.

    a. Vaak
    b. Nu en dan
    c. Nooit

74   Ik weet altijd de uiting van mijn gevoelens onder nauwgezette controle te houden.

    a. Ja
    b. Tussenin
    c. Nee

75	Een nieuwe uitvinding zou ik het liefst:	a. Zelf doen, in een laboratorium
		b. Geen voorkeur
		c. Verkoopbaar maken voor mensen

75 Een nieuwe uitvinding zou ik het liefst:
a. Zelf doen, in een laboratorium
b. Geen voorkeur
c. Verkoopbaar maken voor mensen

76 'Verrassing' staat tot 'vreemd' als 'angst' staat tot:
a. Moedig
b. Bevreesd
c. Verschrikkelijk

77 Welke van de volgende breuken is van een ander soort dan de andere?
a. 3/7
b. 3/9
c. 3/11

78 Sommige mensen lijken te doen alsof ik er niet ben, of mijden me, hoewel ik niet weet waarom.
a. Herhaaldelijk
b. Zelden
c. Nooit

79 Mensen behandelen me minder billijk, dan mijn goede bedoelingen verdienen.
a. Vaak
b. Af en toe
c. Nooit

80 Het gebruik van platvloerse taal, ook als het niet in een gemengde groep van vrouwen en mannen is, staat me tegen.
a. Ja
b. Tussenin
c. Nee

81 Ik heb minder vrienden dat de meeste mensen.
a. Ja, beslist
b. Tussenin
c. Nee

82 Ik heb er een hekel aan ergens te zijn waar niet veel mensen zijn om mee te praten.
a. Meestal
b. Soms
c. Zelden

83 Mensen noemen me wel eens nonchalant, ook al vinden ze me een aangenaam persoon.
a. Ja
b. Tussenin
c. Nee

84 Plankenkoorts het ik in verschillende sociale situaties:
a. Dikwijls
b. Af en toe
c. Bijna nooit

85 Wanneer ik in een kleine groep verkeer, mag ik graag wat achterover zitten en aan ander het voornaamste praten overlaten:
a. Ja
b. Tussenin
c. Nee

86 Wat lezen betreft, houd ik het meest van:
a. Een realistisch verslag van een militaire of politieke strijd
b. Geen voorkeur
c. Een gevoelig, fantastische roman

87 Als bazige mensen me een bepaalde kant op proberen te sturen, doe ik juist het tegenovergestelde van wat ze willen.
a. Ja
b. Tussenin
c. Nee

88 Mijn werkgever en de leden van mijn gezin maken, in de regel, slechts aanmerkingen op me als daar reden voor is.

a. Ja
b. Tussenin
c. Nee

89 Op straat of in de winkel stoor ik me aan de manier waarop sommige mensen naar anderen staren.

a. Ja
b. Tussenin
c. Nee

90 Op een lange reis zou ik het liefst:

a. Iets lezen dat diepgaand, maar toch interessant is
b. Geen voorkeur
c. De tijd doorbrengen met het converseren met een medepassagier

91 Als je je bedreigd voelt, denk ik dat het goed kan zijn om luidkeels voor je mening uit te komen en niet ten koste van alles beheerst en beleefd te blijven.

a. Ja
b. Tussenin
c. Nee

92 Als kennissen me slecht behandelen en laten merken dat ze me niet mogen:

a. Brengt me dat geenszins van de wijs
b. Tussenin
c. Word ik neerslachtig, down

93 Ik word er verlegen van als men mij prijst of met complimenten overlaadt.

a. Ja
b. Tussenin
c. Nee

94 Ik zou het liefst een baan hebben met:

a. Een vast, zeker salaris
b. Geen voorkeur
c. Een groter salaris, dat afhangt van de wijze waarop ik mensen er permanent van weet te overtuigen dat ik het waard ben

95 Om geïnformeerd te blijven:

a. Houd ik van discussies met mensen over bepaalde zaken
b. Geen voorkeur
c. Vertrouw ik op actuele nieuwsberichten

96 Ik houd ervan actief deel te nemen aan sociale gebeurtenissen, commissies etc.

a. Ja
b. Tussenin
c. Nee

97 Bij het uitvoeren van een taak, ben ik pas tevreden als ook de kleinste details met zorg behandeld zijn.

a. Ja
b. Tussenin
c. Nee

98 Kleine tegenslagen kunnen me bij tijd en wijle teveel ergeren.

a. Ja
b. Tussenin
c. Nee

99	Ik ben een gezond slaper, wandel of praat nooit in mijn slaap.	a. Ja
		b. Tussenin
		c. Nee

100	Wat me bij het werken in een zaak het interessantst lijkt is:	a. Praten met klanten
		b. Geen voorkeur
		c. De boeken en de rekeningen bijhouden

101	'Maat' staat tot 'lengte' als 'oneerlijk' tot:	a. Gevangenis
		b. Zonde
		c. Stelen

102	AB staat tot DC als SR tot:	a. QP
		b. PQ
		c. TU

103	Als mensen onredelijk zijn, dan:	a. Blijf ik gewoon kalm
		b. Onzeker
		c. Minacht ik ze gewoon

104	Als mensen hardop praten als ik naar muziek luister:	a. Kan ik mijn gedachten bij de muziek houden en word ik niet gestoord
		b. Tussenin
		c. Bederft dat mijn plezier, het stoort me

105	Ik denk dat men mij het beste typeert als:	a. Beleefd en rustig
		b. Tussenin
		c. Krachtig, weerbaar

106	Ik voldoe aan mijn sociale verplichtingen.	a. Uitsluitend als ik er niet onderuit kan
		b. Onzeker
		c. Met genoegen

107	Voorzichtig zijn en niet te veel verwachten, is beter dan blijmoedig te zijn en altijd succes verwachten.	a. Ja
		b. Onzeker
		c. Nee

108	Als ik aan problemen in mijn werk denk,	a. Probeer ik vooruit te plannen, vóór ik ze tegenkom
		b. Tussenin
		c. Ga ik er van uit, dat ik ze wel aankan wanneer ze zich aandienen

109	Ik vind het prettig om me onder de mensen te begeven bij een of andere bijeenkomst.	a. Ja
		b. Onzeker
		c. Nee

110	Als diplomatie en een beetje overreding nodig zijn om mensen ergens toe te bewegen word ik vaak gevraagd dat te doen.	a. Ja
		b. Onzeker
		c. Nee

111	Het is interessanter om te zijn:	a.	Een voorlichter, die jonge mensen helpt werk te vinden
		b.	Geen voorkeur
		c.	Hoofd bedrijfsbureau (efficiency engineering)

112	Als ik er zeker van ben dat iemand zich oneerlijk of zelfzuchtig gedraagt, dan breng ik dat aan het daglicht, ook al kost dat de nodige moeite.	a.	Ja
		b.	Tussenin
		c.	Nee

113	Ik maak graag dwaze opmerkingen voor de gein, om mensen te verrassen en om te zien hoe ze reageren.	a.	Wel eens
		b.	Tussenin
		c.	Zelden of nooit

114	Ik zou het leuk vinden voor een krant redacteur te zijn voor drama, opera, concerten etc.	a.	Ja, heel leuk
		b.	Gaat wel
		c.	Nee

115	Als ik bij een bijeenkomst stil moet zitten dan heb ik dikwijls behoefte om op papier te krabbelen en rond te draaien.	a.	Nooit
		b.	Onzeker
		c.	Altijd

116	Als iemand me iets toevoegt dat niet waar is, dan zeg ik waarschijnlijk eerder tot mezelf:	a.	'Die persoon is een leugenaar'
		b.	Tussenin
		c.	'Zo te horen is hij niet goed geïnformeerd'

117	Ik voel me wel eens bestaft ook al heb ik niets verkeerd gedaan.	a.	Vaak
		b.	Af en toe
		c.	Nooit

118	Het idee dat ziektes evenveel in psychische als in fysieke gronden wortelen is overdreven.	a.	Ja, in sterke mate
		b.	Enigszins
		c.	Nee

119	De pracht en praal van grote staatsceremoniën dienen te worden bewaard.	a.	Ja
		b.	Tussenin
		c.	Nee

120	Het stoort me als mensen denken dat ik te weinig conventioneel, te eigenaardig ben.	a.	Behoorlijk
		b.	Een beetje
		c.	Totaal niet

121	Als ik iets moet opbouwen, doe ik dat het liefst:	a.	Met iemand aan wie ik wat kan delegeren
		b.	Geen voorkeur
		c.	In mijn eentje

122	Ik heb periodes waarin ik buien van hevige zelf meelij haast niet kan doen ophouden.	a.	Vaak
		b.	Af en toe
		c.	Nooit

123	Vaak ben ik snel boos op mensen.	a. Ja
		b. Tussenin
		c. Nee

124 Het veranderen van oude gewoonten doe ik altijd zonder problemen en zonder terug te glippen.
- a. Ja
- b. Tussenin
- c. Nee

125 Bij gelijke salariëring, zou ik het liefst zijn:
- a. Een advocaat
- b. Geen voorkeur
- c. Een navigator of piloot

126 'Beter' staat tot 'slechtst' als 'trager' tot:
- a. Snel
- b. Best
- c. Vlugst

127 Welke van onderstaande mogelijkheden sluit aan op de laatste letter van deze rij: xooooxxooooxxx?
- a. oxxx
- b. ooxx
- c. xooo

128 Als het tijd is voor iets dat ik heb voorbereid en waar ik naar heb uitgezien heb ik wel eens helemaal geen zin om te gaan.
- a. Ja
- b. Tussenin
- c. Nee

129 Aan de meeste dingen kan ik nauwgezet blijven doorwerken, zonder dat het lawaai dat de mensen rondom mij maden me daarin stoort.
- a. Ja
- b. Tussenin
- c. Nee

130 Ik vertel vreemden wel eens dingen die voor mij belangrijk zijn, ook al vragen ze daar niet naar.
- a. Ja
- b. Zelden
- c. Nee

131 Ik besteed een deel van mijn vrije tijd aan het praten met vrienden over leuke belevenissen van vroeger.
- a. Ja, een groot deel
- b. Een klein deel
- c. Nee

132 Ik houd van gewaarde, onzinnige dingen puur voor het plezier.
- a. Ja
- b. Tussenin
- c. Nee

133 Ik vind de aanblik van een kamer vol troep erg vervelend.
- a. Ja
- b. Tussenin
- c. Nee

134 Ik beschouw me zelf als een gezellig, sociaal gericht persoon.
- a. Ja
- b. Tussenin
- c. Nee

135 In sociale contacten:
- a. Toon ik mijn emoties zoals ik wil
- b. Tussenin
- c. Houd ik mijn emoties voor me

136 Ik houd van muziek die:

    a. Levendig, licht en niet zoet is
    b. Geen voorkeur
    c. Gevoelig en sentimenteel is

137 Ik bewonder de schoonheid van een gedicht meer dan die van een goed vervaardigd geweer.

    a. Ja
    b. Geen mening
    c. Nee

138 Als een goede opmerking van mij aan de aandacht ontsnapt:

    a. Laat ik het zitten
    b. Tussenin
    c. Geef ik de mensen een kans het opnieuw te horen

139 Ik zou wel als reclasseringsambtenaar willen werken met op borgtocht vrijgelatenen.

    a. Ja
    b. Misschien
    c. Nee

140 Men moet voorzichtig zijn in de omgang met allerlei vreemdelingen, omdat het gevaar van besmetting en dergelijke bestaat.

    a. Ja
    b. Tussenin
    c. Nee

141 Op reis in het buitenland ga ik liever mee met een door gidsen verzorgde reis dan dat ik zelf de plaatsen uitzoek die ik wil zien.

    a. Ja
    b. Tussenin
    c. Nee

142 Men kent mij terecht als een zijn best doende, gedeeltelijk succesvol persoon.

    a. Ja
    b. Tussenin
    c. Nee

143 Als mensen mijn welwillendheid in hun voordeel gebruiken, ben ik daar niet rouwig om en vergeet ik het gauw.

    a. Waar
    b. Onzeker
    c. Nietwaar

144 Als ik zie dat ik in een groepsdiscussie een verhitte woordenstrijd ontstaat tussen twee deelnemer, dan:

    a. Wil ik graag een 'winnaar' zien
    b. Tussenin
    c. Zou ik willen dat men weer in het reine kwam

145 Mijn plannen voer ik graag alleen uit, zonder de interrupties en suggesties van anderen.

    a. Ja
    b. Tussenin
    c. Nee

146 Soms laat ik mijn handelingen beïnvloeden door gevoelens van jaloezie.

    a. Ja
    b. Tussenin
    c. Nee

147 Ik ben steevast van mening: 'de baas heeft misschien niet altijd gelijk, maar hij heeft altijd het recht om baas te zijn'.

    a. Ja
    b. Onzeker
    c. Nee

148 Ik word gespannen als ik denk aan alle dingen die voor me liggen.

    a. Ja
    b. Soms
    c. Nee

149 Als mensen me raad toeschreeuwen als ik een spel speel, raak ik hierdoor van de wijs.

a. Nee
b. Onzeker
c. Ja

150 Wat me het interessantst lijkt om te zijn is:

a. Artiest
b. Geen voorkeur
c. Secretaris van een vereniging

151 Welke van de volgend woorden hoort niet bij de anderen?

a. Iedere
b. Sommige
c. Meeste

152 'Vlam' staat tot 'hitte' als 'roos' staat tot:

a. Doorn
b. Rode bloempjes
c. Geur

153 Ik heb markante drom die mijn slaap verstoren.

a. Dikwijls
b. Af en toe
c. Bijna nooit

154 Ook al zijn de kansen op succes zeer gering, toch blijf ik in het nemen van risico geloven.

a. Ja
b. Tussenin
c. Nee

155 Ik vind het prettig als ik zó goed weet wat de groep te doen heeft, dat ik vanzelf de leidende figuur word.

a. Ja
b. Tussenin
c. Nee

156 Ik kleed me liever op een stemmige, correcte manier dan in een opvallende persoonlijke stijl.

a. Vaak
b. Soms
c. Zelden of nooit

157 Een avond met een rustige liefhebberij trekt me meer dan een levendige party.

a. Waar
b. Onzeker
c. Onwaar

158 Ik sluit me af voor de welgemeende raadgevingen van andere, ook al weet ik dat ik dat niet moet doen.

a. Af en toe
b. Bijna nooit
c. Nooit

159 Ik hecht er sterk aan om bij het nemen van beslissingen terug te grijpen op grondbeginselen van juist en onjuist.

a. Ja
b. Tussenin
c. Nee

160 Ik heb er een hekel aan als een groep me aan het werk ziet.

a. Ja, wel een beetje
b. Nauwelijks
c. Nee

161 Omdat het niet altijd mogelijk is om de dingen op een geleidelijke, redelijke manier te bereiken, is het soms nodig om kracht te gebruiken.

a. Ja
b. Tussenin
c. Nee

162 Op school verkoos (of verkies) ik:

a. Nederlands
b. Geen voorkeur
c. Wiskunde of rekenen

163 Soms heb ik me onrustig laten maken, doordat mensen achter mijn rug rotdingen zeiden, zonder enige reden.

a. Ja
b. Onzeker
c. Nee

164 Praten met gewone, conventionele mensen met vaste gewoontes:

a. Is dikwijls heel interessant, er is veel voor te zeggen
b. Tussenin
c. Is zelden interessant omdat het over koetjes en kalfjes gaat en weinig diepgang heeft

165 Sommige dingen maken me zo kwaad dat ik het beste maar niks zeg.

a. Ja
b. Tussenin
c. Nee

166 Bij opvoeding is het belangrijker:

a. Het kind voldoende genegenheid te schenken
b. Tussenin
c. Het kind juiste gewoontes en opvattingen aan te leren

167 Mensen beschouwen me als een solide, onverstoorbare persoon, niet te beroeren door ups en downs in de omstandigheden.

a. Ja
b. Tussenin
c. Nee

168 Ik ben van mening dat de samenleving zich door de rede moet laten leiden naar nieuw gebruiken, en oude gewoontes of louter tradities terzijde moeten schuiven.

a. Ja
b. Tussenin
c. Nee

169 Ik denk dat het belangrijker is om in onze moderne wereld tot en oplossint brengen:

a. Zaken van morele strekking
b. Geen voorkeur
c. Politieke moeilijkheden

170 Ik leer beter door:

a. Het lezen van een goedgeschreven boek
b. Tussenin
c. Het meedoen aan een groepsdiscussie

171 Ik ga mijn eigen gang in plaats van gebaande wegen te volgen.

a. Altijd
b. Soms
c. Zelden of nooit

172 Ik wacht graag tot ik zeker ven dat wat ik zeg juist is, voordat ik een argument naar voren breng.

a. Altijd
b. Gewoonlijk
c. Alleen als de situatie dat vereist

173 Kleine dingen werken me soms op mijn zenuwen, hoewel ik weet dat ze bijkomstig zijn.

a. Ja, vaak
b. Tussenin
c. Nee

174 Ik zeg in een spontane opwelling vaak dingen die ik later sterk betreur.

a. Nee, zelden of nooit
b. Onzeker
c. Ja, vaak

175	Als mij gevraagd wed iets voor de liefdadigheid te doen:	a. Zou ik meedoen
		b. Misschien
		c. Zou ik beleefd zeggen dat ik het te druk heb

176	Welke van de volgende woorden hoort niet bij de anderen?	a. Wijd
		b. Zigzag
		c. Recht

177	'Spoedig' staat tot: 'nooit' als 'dichtbij' staat tot.	a. Nergens
		b. Ver
		c. Weg

178	Als ik een afschuwelijke sociale blunder maak, kan ik dat gauw vergeten.	a. Ja
		b. Tussenin
		c. Nee

179	Men kent mij als iemand die bij een bepaald probleem bijna altijd wel met een idee op de proppen komt.	a. Ja
		b. Tussenin
		c. Nee

180	Wat mij het beste ligt is, denk ik:	a. Stalen zenuwen tonen bij het aanvaarden van uidagingen
		b. Onzeker
		c. Rekening houden met wat anderen willen

181	Men beschouwt mij als een enthousiast iemand.	a. Ja
		b. Tussenin
		c. Nee

182	Ik houd van werk dat verandering, variatie en reis mogelijkheden biedt, ook als het niet van enig gevaar ontbloot is.	a. Ja
		b. Tussenin
		c. Nee

183	Ik ben een betrekkelijk stipt persoon, die er op aandringt dat de dingen altijd zo correct mogelijk gedaan worden.	a. Ja
		b. Tussenin
		c. Nee

184	Ik houd van werk dat nauwgezetheid en precisie vergt.	a. Ja
		b. Tussenin
		c. Nee

185	Ik ben een energiek type, dat altijd bezig is.	a. Ja
		b. Onzeker
		c. Nee

186	Er zijn geen vragen meer die ik opgelaten heb, of onjuist beantwoord.	a. Inderdaad
		b. Weet niet
		c. Dat is niet zo

Vragenlijst projectleider

In opdracht van p2 doe ik een onderzoek naar de relatie tussen projectleider en projecttype. Dit onderzoek voer ik uit bij lopende projecten in de publieke sector. Het project waar u in betrokken bent, is één van de geselecteerde projecten. Daarom wil ik u verzoeken onderstaande vragenlijst in te vullen.
De vragenlijst bestaat uit twee delen en het invullen duurt ongeveer 20 minuten. Alle antwoorden worden anoniem verwerkt.

Deel 1
De eerste set vragen heeft betrekking op project categorisatie. Ik wil u verzoeken deze vragen in te vullen voor het betreffende project. Wanneer u een antwoord niet weet, graag geen antwoord invullen.

Vraag 1:
Waarom is dit project opgestart?
- ☐ Gebiedsontwikkeling
- ☐ Positieverbetering
- ☐ Vervanging
- ☐ Anders, namelijk.:…………………………………………………………………………………

Vraag 2:
Is er een planning gemaakt voor het project en zo ja, hoe ziet deze eruit?
- ☐ Ja, er is een gedetailleerde planning voor het hele project verloop (project planning)
- ☐ Ja, er is een planning voor de volgende stap (proces planning)
- ☐ Ja, er is een globale inschatting van de planning gemaakt
- ☐ Nee, er is geen planning

Vraag 3:
Staat het project op zichzelf of is er samenwerking met andere project teams?
- ☐ Het project staat op zichzelf
- ☐ Het project team werkt samen met andere project teams op dezelfde locatie aan een overkoepelend geheel
- ☐ Het project team werkt samen met andere project teams op andere locaties aan een overkoepelend geheel

Vraag 4:
In welke fase zit het project momenteel?
- ☐ Initiatief, definitie of haalbaarheid
- ☐ Ontwerp (het idee wordt verder uitgewerkt)
- ☐ Voorbereiding (de uitvoering wordt voorbereid)
- ☐ Uitvoering (het plan wordt uitgevoerd)
- ☐ Afronding (het product wordt klaargemaakt)
- ☐ Overgedragen (het product wordt aan de klant overgedragen)

Vraag 5:
Welke partijen hebben invloed op de besluitvorming in dit project? (meerdere antwoorden zijn mogelijk)
- ☐ Gemeente
- ☐ Bewoners
- ☐ Participatiegroepen
- ☐ Andere overheidsinstanties
- ☐ Uitvoerder
- ☐ Anders, namelijk: …………………………………………………………………………………

Vraag 6:
De uitvoerder zal gecontracteerd worden op basis van:
- ☐ Vaste prijs (een vooraf afgesproken prijs wordt betaald)
- ☐ Kostprijs (de gemaakte kosten worden in rekening gebracht)
- ☐ Alliantie (de uitvoerder neemt een deel van het risico op zich)
- ☐ Anders, namelijk:…………………………………………………………………………………

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Vraag 7:
Op de volgende pagina staat een tabel. Deze tabel vult u in door per regel **5 punten** te verdelen over de twee **tegenstellingen**. De stelling die **volgens u** de **meeste betrekking** heeft op het project in kwestie, geeft u de **meeste punten** en de stelling die volgens u de **minste betrekking** heeft op het project in kwestie, geeft u de **minste punten**.

Vraag 7 (vervolg): Vul onderstaande tabel in:

	Som van 5		
***Voorbeeld**: Samenwerking is belangrijk*	*4*	*1*	*Het behalen van de planning is belangrijk*
We moeten ons houden aan het plan			Er is volop ruimte voor nieuwe ideeën en inzichten die opkomen tijdens de uitvoering
Het is belangrijk dat iedereen zich aan de regels houdt			Het is belangrijk dat iedereen het naar zijn zin heeft
We laten zien wat we bereikt hebben			We vinden het geweldig om naar de volgende mijlpaal onderweg te zijn
We vinden het wiel niet opnieuw uit			We ondervinden gaandeweg hoe we het moeten doen
Het is belangrijk om de realiteit onder ogen te zien			Het is geweldig om een mooie ambitie te hebben
Het is belangrijker dat het plan logisch in elkaar zit			Het is belangrijker dat het plan betrokkenen vertrouwen geeft
Iedereen weet wat zijn taak is			Iedereen weet wat zijn taak is en wat deze bijdraagt aan het geheel
Besluitvorming gebeurt op basis van duidelijke regels en feitelijke informatie			Besluitvorming gebeurt op basis van 'blauwe ogen' en buikgevoel
De plannen zijn realistisch			De plannen zijn stimulerend en uitdagend
In onze communicatie is het belangrijk dat we een consistent verhaal brengen			In onze communicatie richten we ons op de belangen van verschillende groepen betrokkenen
Het is belangrijk te weten waar we ons nu bevinden			Het is belangrijk te weten waar we naar toe willen
Als er conflictsituaties ontstaan, proberen we die met nieuwe regels het hoofd te bieden			Als er conflictsituaties ontstaan, luisteren we goed naar de belangen van de verschillende partijen
In een vergadering hebben we het meestal over de actuele stand van zaken			In een vergadering besteden we veel aandacht aan toekomstplannen
Het gaat om het waarmaken van resultaten			Het gaat om het volgen van je ambities
Problemen onderweg lossen we pragmatisch op			Problemen onderweg hinderen ons niet bij het realiseren van onze ideeën
We realiseren aan het eind iets voor toekomstige gebruikers			Gebruikers participeren in het project van begin tot eind
Zoiets lukt want we hebben het eerder gedaan			Zoiets lukt want het biedt nieuw perspectief
Vooraf leggen we onze eisen vast waaraan we moeten voldoen			Gaandeweg wordt duidelijk welke wensen en ideeën partijen hebben
We zullen grote risico's zorgvuldig vermijden			We zullen alle kansen die we tegenkomen benutten
De juiste expertise in het team is de basis voor succes			Een goede onderlinge verstandhouding tussen de teamleden is de basis voor succes

De tweede set vragen heeft betrekking op het projectverloop van het betreffende project. Er wordt gevraagd naar **uw** mening; niet de mening van het projectteam.

Vraag 1:

Heeft u een positief gevoel bij het verloop van het project?

Helemaal	Bijna helemaal	Niet helemaal	Helemaal niet
1	2	3	4

Geef aan waarom:

………

………

Vraag 2:

Vul onderstaande tabel in:

In onderstaande tabel zijn een aantal succesfactoren weergegeven die invloed hebben op het projectverloop. Omcirkel in **kolom 2** 'Ja' als deze factor in het project aanwezig is en 'Nee' als deze factor in het project afwezig is.

In **kolom 3** geeft u aan of en hoe de aan-/afwezigheid van deze factoren invloed heeft op het verloop van het project. De mogelijke antwoorden hierop zijn:

Beïnvloedt verloop erg negatief → *1*
Beïnvloedt verloop negatief → *2*
Beïnvloedt verloop niet → *3*
Beïnvloedt verloop positief → *4*
Beïnvloedt verloop erg positief → *5*

Factoren	**2** Aanwezig? *(omcirkel)*	**3** Beïnvloedt verloop... *(omcirkel cijfer)*
Projectdoelen	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Ondersteuning van het managementteam	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Duidelijke autoriteit	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Planning	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Anticipatie op planning	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Klantcontact	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Goede teamsamenstelling	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Ervaring	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Observatie en feedback	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Effectieve communicatie in het team	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Juiste eigenschappen projectleider	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Effectieve teambuilding/motivatie	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief

Eventuele vragen of opmerkingen met betrekking tot de vragenlijst kunt u plaatsen in onderstaand kader.

Als u interesse heeft in het ontvangen van de uitslag van uw project, wil ik u vragen uw gegevens in te vullen.

Naam: …………………………………………………………………….

Telefoonnummer: ………………………………………………………….

E-mail adres: ……………………………………………………………….

Hartelijk dank voor het invullen van deze vragenlijst.
Daisy Busser

Daniëlle Klaassen begeleiding namens p2 / Daan bv

Appendix K. Questionnaire project leader experimental projects

Vragenlijst projectleider

In opdracht van p2 doe ik een onderzoek naar de relatie tussen persoonlijkheid van de projectleider en het projecttype enerzijds, en de kans op projectsucces anderzijds. Dit onderzoek voer ik uit bij lopende projecten. Het project waar u in betrokken bent, is één van de geselecteerde projecten. Daarom wil ik u verzoeken onderstaande vragenlijst in te vullen.

De vragenlijst bestaat uit twee delen en het invullen duurt ongeveer 20 minuten. Alle antwoorden worden anoniem verwerkt.

Deel 1

De eerste set vragen heeft betrekking op project categorisatie. Ik wil u verzoeken deze vragen in te vullen voor het desbetreffende project. Wanneer u een antwoord niet weet, graag geen antwoord invullen.

Vraag 1:
Waar worden de projectactiviteiten uitgevoerd?
- ☐ De projectactiviteiten vinden geheel plaats op één locatie
- ☐ De projectactiviteiten vinden plaats op meerdere locaties in Nederland
- ☐ De projectactiviteiten vinden plaats op meerdere locaties in Europa
- ☐ De projectactiviteiten vinden plaats op meerdere locaties internationaal

Vraag 2:
Is er een planning gemaakt voor het project en zo ja, hoe ziet deze eruit?
- ☐ Ja, er is een gedetailleerde planning voor het hele project verloop (project planning)
- ☐ Ja, er is een planning voor de volgende stap (proces planning)
- ☐ Ja, er is een globale inschatting van de hele planning gemaakt
- ☐ Nee, er is geen planning

Vraag 3:
Staat het project op zichzelf of is er samenwerking met andere project teams?
- ☐ Het project staat op zichzelf
- ☐ Het projectteam werkt samen met andere projectteams op dezelfde locatie aan een overkoepelend geheel
- ☐ Het projectteam werkt samen met andere projectteams op andere locaties aan een overkoepelend geheel

Vraag 4:
In welke fase zit het project momenteel?
- ☐ Research (er wordt fundamenteel onderzoek verricht)
- ☐ Haalbaarheid (de haalbaarheid wordt bepaald)
- ☐ Development (er wordt iets nieuws ontwikkeld)
- ☐ Design (er wordt aan het ontwerp gewerkt)
- ☐ Anders, namelijk:………………………………………………………………………………………………………

Vraag 5:
Welke partijen hebben invloed op de besluitvorming in dit project? (meerdere antwoorden zijn mogelijk)
- ☐ Er worden geen besluiten genomen
- ☐ Het projectteam
- ☐ Interne partijen buiten het team, maar binnen de eigen organisatie
- ☐ Externe partijen buiten het team, niet zijnde de financiers
- ☐ Externe partijen buiten het team, die (gedeeltelijk) financieren
- ☐ In- en externe partijen buiten het team, binnen een stuurgroep
- ☐ In- en externe partijen buiten het team, maar niet gezamenlijk
- ☐ Anders, namelijk: ………………………………………………………………………………………………………

Vraag 6:

Wat is van toepassing op de begroting van het project?

- ☐ Er is <u>geen</u> begroting opgesteld, alles wat we uitgeven wordt betaald
- ☐ Er is een begroting van de <u>uitgaven</u> en overschrijding is <u>niet</u> mogelijk
- ☐ Er is een begroting van de <u>uitgaven</u> en overschrijding is <u>wel</u> mogelijk
- ☐ Er is een begroting van de <u>uitgaven</u> en <u>uren</u> en overschrijding is <u>niet</u> mogelijk
- ☐ Er is een begroting van de <u>uitgaven</u> en <u>uren</u> en overschrijding is <u>wel</u> mogelijk
- ☐ Anders, namelijk: ……

Vraag 7:

Op de volgende pagina staat een tabel. Deze tabel vult u in door per regel **5 punten** te verdelen over de twee **tegenstellingen**. De stelling die **volgens u** de **meeste betrekking** heeft op het project in kwestie, geeft u de **meeste punten** en de stelling die volgens u de **minste betrekking** heeft op het project in kwestie, geeft u de **minste punten**.

	Som van 5		
Voorbeeld: *Samenwerking is belangrijk*	*4*	*1*	*Het behalen van de planning is belangrijk*
We moeten ons houden aan het plan			Er is volop ruimte voor nieuwe ideeën en inzichten die opkomen tijdens de uitvoering
Het is belangrijk dat iedereen zich aan de regels houdt			Het is belangrijk dat iedereen het naar zijn zin heeft
We laten zien wat we bereikt hebben			We vinden het geweldig om naar de volgende mijlpaal onderweg te zijn
We vinden het wiel niet opnieuw uit			We ondervinden gaandeweg hoe we het moeten doen
Het is belangrijk om de realiteit onder ogen te zien			Het is geweldig om een mooie ambitie te hebben
Het is belangrijker dat het plan logisch in elkaar zit			Het is belangrijker dat het plan betrokkenen vertrouwen geeft
Iedereen weet wat zijn taak is			Iedereen weet wat zijn taak is en wat deze bijdraagt aan het geheel
Besluitvorming gebeurt op basis van duidelijke regels en feitelijke informatie			Besluitvorming gebeurt op basis van 'blauwe ogen' en buikgevoel
De plannen zijn realistisch			De plannen zijn stimulerend en uitdagend
In onze communicatie is het belangrijk dat we een consistent verhaal brengen			In onze communicatie richten we ons op de belangen van verschillende groepen betrokkenen
Het is belangrijk te weten waar we ons nu bevinden			Het is belangrijk te weten waar we naar toe willen
Als er conflictsituaties ontstaan, proberen we die met nieuwe regels het hoofd te bieden			Als er conflictsituaties ontstaan, luisteren we goed naar de belangen van de verschillende partijen
In een vergadering hebben we het meestal over de actuele stand van zaken			In een vergadering besteden we veel aandacht aan toekomstplannen
Het gaat om het waarmaken van resultaten			Het gaat om het volgen van je ambities
Problemen onderweg lossen we pragmatisch op			Problemen onderweg hinderen ons niet bij het realiseren van onze ideeën
We realiseren aan het eind iets voor toekomstige gebruikers			Gebruikers participeren in het project van begin tot eind
Zoiets lukt want we hebben het eerder gedaan			Zoiets lukt want het biedt nieuw perspectief
Vooraf leggen we onze eisen vast waaraan we moeten voldoen			Gaandeweg wordt duidelijk welke wensen en ideeën partijen hebben
We zullen grote risico's zorgvuldig vermijden			We zullen alle kansen die we tegenkomen benutten
De juiste expertise in het team is de basis voor succes			Een goede onderlinge verstandhouding tussen de teamleden is de basis voor succes

De tweede set vragen heeft betrekking op het projectverloop van het betreffende project. Er wordt gevraagd naar **uw** mening; niet de mening van het projectteam.

Vraag 1:

Heeft u een positief gevoel bij het verloop van het project?

Helemaal	Bijna helemaal	Niet helemaal	Helemaal niet
1	2	3	4

Geef aan waarom:

………

………

Vraag 2:

Vul onderstaande tabel in:

In onderstaande tabel zijn een aantal succesfactoren weergegeven die invloed hebben op het projectverloop. Omcirkel in **kolom 2** 'Ja' als deze factor in het project aanwezig is en 'Nee' als deze factor in het project afwezig is.

In **kolom 3** geeft u aan of en hoe de aan-/afwezigheid van deze factoren invloed heeft op het verloop van het project. De mogelijke antwoorden hierop zijn:

Beïnvloedt verloop erg negatief → **1**
Beïnvloedt verloop negatief → **2**
Beïnvloedt verloop niet → **3**
Beïnvloedt verloop positief → **4**
Beïnvloedt verloop erg positief → **5**

	2	3
Factoren	**Aanwezig?** *(omcirkel)*	**Beïnvloedt verloop...** *(omcirkel cijfer)*
Projectdoelen	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Ondersteuning van het managementteam	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Duidelijke autoriteit	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Planning	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Anticipatie op planning	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Klantcontact	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Goede teamsamenstelling	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Ervaring	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Observatie en feedback	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Effectieve communicatie in het team	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Juiste eigenschappen projectleider	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Effectieve teambuilding/motivatie	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief

Eventuele vragen of opmerkingen met betrekking tot de vragenlijst kunt u plaatsen in onderstaand kader.

Als u interesse heeft in het ontvangen van de uitslag van uw project, wil ik u vragen uw gegevens in te vullen.

Naam: ……………………………………………………………………….

Telefoonnummer: ………………………………………………………….

E-mail adres: ……………………………………………………………….

Hartelijk dank voor het invullen van deze vragenlijst.
Daisy Busser

Daniëlle Klaassen begeleiding namens p2 / Daan bv

Appendix L. Questionnaire project team members fixed deliverable projects

Vragenlijst projectteamleden

In opdracht van p2 doe ik een onderzoek naar de relatie tussen projectleider en projecttype. Dit onderzoek voer ik uit bij lopende projecten in de publieke sector. Het project waar u in betrokken bent, is één van de geselecteerde projecten. Daarom wil ik u verzoeken onderstaande vragenlijst in te vullen.
De vragenlijst bestaat uit twee delen en het invullen duurt ongeveer 30 minuten. Alle antwoorden worden anoniem verwerkt.

Deel 1
De eerste set vragen heeft betrekking op project categorisatie. Ik wil u verzoeken deze vragen in te vullen voor het desbetreffende project. Wanneer u een antwoord niet weet, graag geen antwoord invullen.

Vraag 1:
Waarom is dit project opgestart?
- ☐ Gebiedsontwikkeling
- ☐ Positieverbetering
- ☐ Vervanging
- ☐ Anders, namelijk:…………………………………………………………………………………….

Vraag 2:
Is er een planning gemaakt voor het project en zo ja, hoe ziet deze eruit?
- ☐ Ja, er is een gedetailleerde planning voor het hele project verloop (project planning)
- ☐ Ja, er is een planning voor de volgende stap (proces planning)
- ☐ Ja, er is een globale inschatting van de planning gemaakt
- ☐ Nee, er is geen planning

Vraag 3:
Staat het project op zichzelf of is er samenwerking met andere project teams?
- ☐ Het project staat op zichzelf
- ☐ Het projectteam werkt samen met andere projectteams op dezelfde locatie aan een overkoepelend geheel
- ☐ Het projectteam werkt samen met andere projectteams op andere locaties aan een overkoepelend geheel

Vraag 4:
In welke fase zit het project momenteel?
- ☐ Initiatief, definitie of haalbaarheid
- ☐ Ontwerp (het idee wordt verder uitgewerkt)
- ☐ Voorbereiding (de uitvoering wordt voorbereid)
- ☐ Uitvoering (het plan wordt uitgevoerd)
- ☐ Afronding (het product wordt klaargemaakt)
- ☐ Overgedragen (het product wordt aan de klant overgedragen)

Vraag 5:
Welke partijen hebben invloed op de besluitvorming in dit project? (meerdere antwoorden zijn mogelijk)
- ☐ Gemeente
- ☐ Bewoners
- ☐ Participatiegroepen
- ☐ Andere overheidsinstanties
- ☐ Uitvoerder
- ☐ Anders, namelijk: ……………………………………………………………………………………

Vraag 6:
De uitvoerder zal gecontracteerd worden op basis van:
- ☐ Vaste prijs (een vooraf afgesproken prijs wordt betaald)
- ☐ Kostprijs (de gemaakte kosten worden in rekening gebracht)
- ☐ Alliantie (de uitvoerder neemt een deel van het risico op zich)
- ☐ Anders, namelijk:……………………………………………………………………………………

Vraag 7:
Op de volgende pagina staat een tabel. Deze tabel vult u in door per regel **5 punten** te verdelen over de twee **tegenstellingen**. De stelling die **volgens u** de **meeste betrekking** heeft op het project in kwestie, geeft u de **meeste punten** en de stelling die volgens u de **minste betrekking** heeft op het project in kwestie, geeft u de **minste punten**.

Vraag 7 (vervolg): Vul onderstaande tabel in:

	Som van 5		
Voorbeeld: Samenwerking is belangrijk	4	1	*Het behalen van de planning is belangrijk*
We moeten ons houden aan het plan			Er is volop ruimte voor nieuwe ideeën en inzichten die opkomen tijdens de uitvoering
Het is belangrijk dat iedereen zich aan de regels houdt			Het is belangrijk dat iedereen het naar zijn zin heeft
We laten zien wat we bereikt hebben			We vinden het geweldig om naar de volgende mijlpaal onderweg te zijn
We vinden het wiel niet opnieuw uit			We ondervinden gaandeweg hoe we het moeten doen
Het is belangrijk om de realiteit onder ogen te zien			Het is geweldig om een mooie ambitie te hebben
Het is belangrijker dat het plan logisch in elkaar zit			Het is belangrijker dat het plan betrokkenen vertrouwen geeft
Iedereen weet wat zijn taak is			Iedereen weet wat zijn taak is en wat deze bijdraagt aan het geheel
Besluitvorming gebeurt op basis van duidelijke regels en feitelijke informatie			Besluitvorming gebeurt op basis van 'blauwe ogen' en buikgevoel
De plannen zijn realistisch			De plannen zijn stimulerend en uitdagend
In onze communicatie is het belangrijk dat we een consistent verhaal brengen			In onze communicatie richten we ons op de belangen van verschillende groepen betrokkenen
Het is belangrijk te weten waar we ons nu bevinden			Het is belangrijk te weten waar we naar toe willen
Als er conflictsituaties ontstaan, proberen we die met nieuwe regels het hoofd te bieden			Als er conflictsituaties ontstaan, luisteren we goed naar de belangen van de verschillende partijen
In een vergadering hebben we het meestal over de actuele stand van zaken			In een vergadering besteden we veel aandacht aan toekomstplannen
Het gaat om het waarmaken van resultaten			Het gaat om het volgen van je ambities
Problemen onderweg lossen we pragmatisch op			Problemen onderweg hinderen ons niet bij het realiseren van onze ideeën
We realiseren aan het eind iets voor toekomstige gebruikers			Gebruikers participeren in het project van begin tot eind
Zoiets lukt want we hebben het eerder gedaan			Zoiets lukt want het biedt nieuw perspectief
Vooraf leggen we onze eisen vast waaraan we moeten voldoen			Gaandeweg wordt duidelijk welke wensen en ideeën partijen hebben
We zullen grote risico's zorgvuldig vermijden			We zullen alle kansen die we tegenkomen benutten
De juiste expertise in het team is de basis voor succes			Een goede onderlinge verstandhouding tussen de teamleden is de basis voor succes

De tweede set vragen heeft betrekking op de projectleider en het projectverloop van het betreffende project. Er wordt gevraagd naar **uw** mening; niet de mening van het projectteam.

Vraag 1:

Heeft, volgens u, de projectleider de juiste eigenschappen voor het leiden van dit specifieke project?

Helemaal	Bijna helemaal	Niet helemaal	Helemaal niet
1	2	3	4

Vraag 2:

Welke eigenschappen van de projectleider hebben een positief effect op dit specifieke project?

....

....

....

Vraag 3:

Welke eigenschappen van de projectleider hebben een negatief effect op dit specifieke project?

....

....

....

Vraag 4:

Welke eigenschappen mist de projectleider voor een positieve invloed op dit specifieke project?

....

....

....

Vraag 5:

Heeft u een positief gevoel bij het verloop van het project?

Helemaal	Bijna helemaal	Niet helemaal	Helemaal niet
1	2	3	4

Geef aan waarom:

....

....

....

p²

Vraag 6:
Vul onderstaande tabel in:

In onderstaande tabel zijn een aantal succesfactoren weergegeven die invloed hebben op het projectverloop. Omcirkel in **kolom 2** 'Ja' als deze factor in het project <u>aanwezig</u> is en 'Nee' als deze factor in het project <u>afwezig</u> is.

In **kolom 3** geeft u aan of en hoe de aan-/afwezigheid van deze factoren invloed heeft op het verloop van het project. De mogelijke antwoorden hierop zijn:
Beïnvloedt verloop erg negatief → **1**
Beïnvloedt verloop negatief → **2**
Beïnvloedt verloop niet → **3**
Beïnvloedt verloop positief → **4**
Beïnvloedt verloop erg positief → **5**

Factoren	**2** Aanwezig? *(omcirkel)*	**3** Beïnvloedt verloop... *(omcirkel cijfer)*
Projectdoelen	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Ondersteuning van het managementteam	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Duidelijke autoriteit	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Planning	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Anticipatie op planning	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Klantcontact	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Goede teamsamenstelling	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Ervaring	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Observatie en feedback	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Effectieve communicatie in het team	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Juiste eigenschappen projectleider	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Effectieve teambuilding/motivatie	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief

Eventuele vragen of opmerkingen met betrekking tot de vragenlijst kunt u plaatsen in onderstaand kader.

Met 1 of 2 projectteamleden wil ik graag een vervolggesprek plannen voor extra informatie. Vul hieronder uw contactgegevens in als u hiertoe bereid bent.

Naam: ………………………………………………………………………………

Telefoonnummer: ………………………………………………………………

E-mail adres: ……………………………………………………………………

Hartelijk dank voor het invullen van deze vragenlijst.
Daisy Busser

Daniëlle Klaassen begeleiding namens p2 / Daan bv

Appendix M. Questionnaire project team members experimental projects

Vragenlijst projectteamleden

In opdracht van p2 doe ik een onderzoek naar de relatie tussen persoonlijkheid van de projectleider en het projecttype enerzijds, en de kans op projectsucces anderzijds. Dit onderzoek voer ik uit bij lopende projecten. Het project waar u in betrokken bent, is één van de geselecteerde projecten. Daarom wil ik u verzoeken onderstaande vragenlijst in te vullen.

De vragenlijst bestaat uit twee delen en het invullen duurt ongeveer 30 minuten. Alle antwoorden worden anoniem verwerkt.

Deel 1
De eerste set vragen heeft betrekking op project categorisatie. Ik wil u verzoeken deze vragen in te vullen voor het desbetreffende project. Wanneer u een antwoord niet weet, graag geen antwoord invullen.

Vraag 1:
Waar worden de projectactiviteiten uitgevoerd?
- ☐ De projectactiviteiten vinden geheel plaats op één locatie
- ☐ De projectactiviteiten vinden plaats op meerdere locaties in Nederland
- ☐ De projectactiviteiten vinden plaats op meerdere locaties in Europa
- ☐ De projectactiviteiten vinden plaats op meerdere locaties internationaal

Vraag 2:
Is er een planning gemaakt voor het project en zo ja, hoe ziet deze eruit?
- ☐ Ja, er is een gedetailleerde planning voor het hele project verloop (project planning)
- ☐ Ja, er is een planning voor de volgende stap (proces planning)
- ☐ Ja, er is een globale inschatting van de hele planning gemaakt
- ☐ Nee, er is geen planning

Vraag 3:
Staat het project op zichzelf of is er samenwerking met andere project teams?
- ☐ Het project staat op zichzelf
- ☐ Het projectteam werkt samen met andere projectteams op dezelfde locatie aan een overkoepelend geheel
- ☐ Het projectteam werkt samen met andere projectteams op andere locaties aan een overkoepelend geheel

Vraag 4:
In welke fase zit het project momenteel?
- ☐ Research (er wordt fundamenteel onderzoek verricht)
- ☐ Haalbaarheid (de haalbaarheid wordt bepaald)
- ☐ Development (er wordt iets nieuws ontwikkeld)
- ☐ Design (er wordt aan het ontwerp gewerkt)
- ☐ Anders, namelijk:………………………………………………………………………………………………………

Vraag 5:
Welke partijen hebben invloed op de besluitvorming in dit project? (meerdere antwoorden zijn mogelijk)
- ☐ Er worden geen besluiten genomen
- ☐ Het projectteam
- ☐ Interne partijen buiten het team, maar binnen de eigen organisatie
- ☐ Externe partijen buiten het team, niet zijnde de financiers
- ☐ Externe partijen buiten het team, die (gedeeltelijk) financieren
- ☐ In- en externe partijen buiten het team, binnen een stuurgroep
- ☐ In- en externe partijen buiten het team, maar niet gezamenlijk
- ☐ Anders, namelijk: ………………………………………………………………………………………………………

Vraag 6:
Wat is van toepassing op de begroting van het project?
- ☐ Er is <u>geen</u> begroting opgesteld, alles wat we uitgeven wordt betaald
- ☐ Er is een begroting van de <u>uitgaven</u> en overschrijding is <u>niet</u> mogelijk
- ☐ Er is een begroting van de <u>uitgaven</u> en overschrijding is <u>wel</u> mogelijk
- ☐ Er is een begroting van de <u>uitgaven</u> en <u>uren</u> en overschrijding is <u>niet</u> mogelijk
- ☐ Er is een begroting van de <u>uitgaven</u> en <u>uren</u> en overschrijding is <u>wel</u> mogelijk
- ☐ Anders, namelijk: ……

Vraag 7:
Op de volgende pagina staat een tabel. Deze tabel vult u in door per regel **5 punten** te verdelen over de twee **tegenstellingen**. De stelling die **volgens u** de **meeste betrekking** heeft op het project in kwestie, geeft u de **meeste punten** en de stelling die volgens u de **minste betrekking** heeft op het project in kwestie, geeft u de **minste punten**.

	Som van 5		
Voorbeeld: *Samenwerking is belangrijk*	4	1	*Het behalen van de planning is belangrijk*
We moeten ons houden aan het plan			Er is volop ruimte voor nieuwe ideeën en inzichten die opkomen tijdens de uitvoering
Het is belangrijk dat iedereen zich aan de regels houdt			Het is belangrijk dat iedereen het naar zijn zin heeft
We laten zien wat we bereikt hebben			We vinden het geweldig om naar de volgende mijlpaal onderweg te zijn
We vinden het wiel niet opnieuw uit			We ondervinden gaandeweg hoe we het moeten doen
Het is belangrijk om de realiteit onder ogen te zien			Het is geweldig om een mooie ambitie te hebben
Het is belangrijker dat het plan logisch in elkaar zit			Het is belangrijker dat het plan betrokkenen vertrouwen geeft
Iedereen weet wat zijn taak is			Iedereen weet wat zijn taak is en wat deze bijdraagt aan het geheel
Besluitvorming gebeurt op basis van duidelijke regels en feitelijke informatie			Besluitvorming gebeurt op basis van 'blauwe ogen' en buikgevoel
De plannen zijn realistisch			De plannen zijn stimulerend en uitdagend
In onze communicatie is het belangrijk dat we een consistent verhaal brengen			In onze communicatie richten we ons op de belangen van verschillende groepen betrokkenen
Het is belangrijk te weten waar we ons nu bevinden			Het is belangrijk te weten waar we naar toe willen
Als er conflictsituaties ontstaan, proberen we die met nieuwe regels het hoofd te bieden			Als er conflictsituaties ontstaan, luisteren we goed naar de belangen van de verschillende partijen
In een vergadering hebben we het meestal over de actuele stand van zaken			In een vergadering besteden we veel aandacht aan toekomstplannen
Het gaat om het waarmaken van resultaten			Het gaat om het volgen van je ambities
Problemen onderweg lossen we pragmatisch op			Problemen onderweg hinderen ons niet bij het realiseren van onze ideeën
We realiseren aan het eind iets voor toekomstige gebruikers			Gebruikers participeren in het project van begin tot eind
Zoiets lukt want we hebben het eerder gedaan			Zoiets lukt want het biedt nieuw perspectief
Vooraf leggen we onze eisen vast waaraan we moeten voldoen			Gaandeweg wordt duidelijk welke wensen en ideeën partijen hebben
We zullen grote risico's zorgvuldig vermijden			We zullen alle kansen die we tegenkomen benutten
De juiste expertise in het team is de basis voor succes			Een goede onderlinge verstandhouding tussen de teamleden is de basis voor succes

Deel 2

De tweede set vragen heeft betrekking op de projectleider en het projectverloop van het betreffende project. Er wordt gevraagd naar **uw** mening; niet de mening van het projectteam.

Vraag 1:

Heeft, volgens u, de projectleider de juiste eigenschappen voor het leiden van dit specifieke project?

Helemaal	Bijna helemaal	Niet helemaal	Helemaal niet
1	2	3	4

Vraag 2:

Welke eigenschappen van de projectleider hebben een positief effect op dit specifieke project?

………

………

………

Vraag 3:

Welke eigenschappen van de projectleider hebben een negatief effect op dit specifieke project?

………

………

………

Vraag 4:

Welke eigenschappen mist de projectleider voor een positieve invloed op dit specifieke project?

………

………

………

Vraag 5:

Heeft u een positief gevoel bij het verloop van het project?

Helemaal	Bijna helemaal	Niet helemaal	Helemaal niet
1	2	3	4

Geef aan waarom:

………

………

………

p²

Vraag 6:
Vul onderstaande tabel in:

In onderstaande tabel zijn een aantal succesfactoren weergegeven die invloed hebben op het projectverloop. Omcirkel in **kolom 2** 'Ja' als deze factor in het project aanwezig is en 'Nee' als deze factor in het project afwezig is.

In **kolom 3** geeft u aan of en hoe de aan-/afwezigheid van deze factoren invloed heeft op het verloop van het project. De mogelijke antwoorden hierop zijn:
Beïnvloedt verloop erg negatief → *1*
Beïnvloedt verloop negatief → *2*
Beïnvloedt verloop niet → *3*
Beïnvloedt verloop positief → *4*
Beïnvloedt verloop erg positief → *5*

Factoren	2 Aanwezig? *(omcirkel)*	3 Beïnvloedt verloop... *(omcirkel cijfer)*
Projectdoelen	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Ondersteuning van het managementteam	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Duidelijke autoriteit	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Planning	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Anticipatie op planning	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Klantcontact	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Goede teamsamenstelling	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Ervaring	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Observatie en feedback	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Effectieve communicatie in het team	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Juiste eigenschappen projectleider	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Effectieve teambuilding/motivatie	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief

Eventuele vragen of opmerkingen met betrekking tot de vragenlijst kunt u plaatsen in onderstaand kader.

Met 1 of 2 projectteamleden wil ik graag een vervolggesprek plannen voor extra informatie. Vul hieronder uw contactgegevens in als u hiertoe bereid bent.

Naam: ……………………………………………………………………………

Telefoonnummer: …………………………………………………………

E-mail adres: ……………………………………………………………………

Hartelijk dank voor het invullen van deze vragenlijst.
Daisy Busser

Daniëlle Klaassen begeleiding namens p2 / Daan bv

Appendix N. Questionnaire principal or supervisor project leader

Vragenlijst opdrachtgever/meerdere

In opdracht van p2 doe ik een onderzoek naar de relatie tussen projectleider en projecttype. Dit onderzoek voer ik uit bij lopende projecten in de publieke sector. Het project waarvan u opdrachtgever bent, is één van de geselecteerde projecten. Daarom wil ik u verzoeken onderstaande vragenlijst in te vullen. Dit duurt ongeveer 15 minuten.

De vragen hebben betrekking op het projectverloop van het betreffende project. Er wordt gevraagd naar **uw** mening; niet de mening van het projectteam. De antwoorden zullen anoniem verwerkt worden.

Vraag 1:
Heeft, volgens u, de projectleider de juiste eigenschappen voor het leiden van dit specifieke project?

Helemaal	Bijna helemaal	Niet helemaal	Helemaal niet
1	2	3	4

Vraag 2:
Welke eigenschappen van de projectleider hebben een positief effect op dit specifieke project?
……
……
……

Vraag 3:
Welke eigenschappen van de projectleider hebben een negatief effect op dit specifieke project?
……
……
……

Vraag 4:
Welke eigenschappen mist de projectleider voor een positieve invloed op dit specifieke project?
……
……
……

Vraag 5:
Heeft u een positief gevoel bij het verloop van het project?

Helemaal	Bijna helemaal	Niet helemaal	Helemaal niet
1	2	3	4

Geef aan waarom:
……
……
……

p²

Vraag 6:
Vul onderstaande tabel in:

In onderstaande tabel zijn een aantal succesfactoren weergegeven die invloed hebben op het projectverloop. Omcirkel in **kolom 2** 'Ja' als deze factor in het project <u>aanwezig</u> is en 'Nee' als deze factor in het project <u>afwezig</u> is.

In **kolom 3** geeft u aan of en hoe de aan-/afwezigheid van deze factoren invloed heeft op het verloop van het project. De mogelijke antwoorden hierop zijn:
Beïnvloedt verloop erg negatief → **1**
Beïnvloedt verloop negatief → **2**
Beïnvloedt verloop niet → **3**
Beïnvloedt verloop positief → **4**
Beïnvloedt verloop erg positief → **5**

Factoren	**2** Aanwezig? *(omcirkel)*	**3** Beïnvloedt verloop... *(omcirkel cijfer)*
Projectdoelen	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Ondersteuning van het managementteam	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Duidelijke autoriteit	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Planning	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Anticipatie op planning	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Klantcontact	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Goede teamsamenstelling	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Ervaring	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Observatie en feedback	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Effectieve communicatie in het team	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Juiste eigenschappen projectleider	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief
Effectieve teambuilding/motivatie	Ja / Nee	Negatief 1 – 2 – 3 – 4 – 5 Positief

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Eventuele vragen of opmerkingen met betrekking tot de vragenlijst kunt u plaatsen in onderstaand kader.

Hartelijk dank voor het invullen van deze vragenlijst.
Daisy Busser

Daniëlle Klaassen begeleiding namens p2 / Daan bv

Appendix O. Results factor analyses project type characteristics

Component Matrix[a]

	Component	
	1	2
Is er een planning gemaakt voor het project en zo ja, hoe ziet deze eruit?	.785	,284
Staat het project op zichzelf of is er samenwerking met andere project teams?	-.717	,585
Initiatief, definitie of haalbaarheid	,848	-,002
Ontwerp (het idee wordt verder uitgewerkt)	-,746	-,480
Participatiegroepen	.015	-,079
Andere overheidsinstanties	.717	-,585
De uitvoerder zal gecontracteerd worden op basis van:	-,717	,585
Dynamiek	-,821	,115
Mensgericht	-,530	-,818
Stabiliteit	,821	-,115
Zaakgericht	.530	,818

Factor analysis project type fixed deliverable

Component Matrix[a]

	Component	
	1	2
Waar worden de projectactiviteiten uitgevoerd?	.879	,330
Is er een planning gemaakt voor het project en zo ja, hoe ziet deze eruit?	.238	,768
Staat het project op zichzelf of is er samenwerking met andere project teams?	,785	-,537
Research (er wordt fundamenteel onderzoek verricht)	,152	-,961
Development (er wordt iets nieuws ontwikkeld)	-,785	,537
Anders, namelijk:	.598	,640
Het projectteam	,785	-,537
Interne partijen buiten het team, maar binnen de eigen organisatie	-,236	,711
Externe partijen buiten het team, die (gedeeltelijk) financieren	-,796	-,080
Wat is van toepassing op de begroting van het project?	,165	,808
Dynamiek	.933	,124
Mensgericht	.964	,152
Stabiliteit	-,933	-,124
Zaakgericht	-,964	-,152

Factor analysis project type experimental

Appendix P. Level of progress determination

Component Matrix[a]

	Component	
	1	2
Projectdoelen	,247	,623
Ondersteuning management team	-,023	,568
Duidelijke autoriteit	,607	-,303
Anticipatie op planning	,719	-,435
Goede teamsamenstelling	,405	,247
Observatie en feedback	,628	,172
Effectieve communicatie in het team	,728	,071
Juiste eigenschappen projectleider	,579	,001
Effectieve teambuilding/motivatie	,150	,634

Results factor analysis

Group1 (6 items)	Group2 (3 items)
Duidelijke autoriteit	Projectdoelen
Anticipatie op planning	Ondersteuning management team
Goede teamsamenstelling	Effectieve teambuilding/motivatie
Observatie en feedback	
Effectieve communicatie in het team	
Juiste eigenschappen projectleider	

Two groups resulting from the factor analysis

Project	Mean satisfaction progress	Group1 present	Group2 present	Negative influence	Total (max. 13)
1	3.17	6	2	0	11.17
2	3.25	5	3	0	11.25
3	3.00	5	2	0	10.00
4	1.67	4	1	-1	5.67
5	3.00	5	2	0	10.00
6	3.33	5	3	0	11.33
7	3.00	4	2	0	9.00
8	2.75	6	3	0	11.75
9	2.40	6	3	-1	10.40
10	2.86	5	3	-1	9.86

Overview progress level determination

Remarkable:
Project 7 and project 9 show a large difference in the mean satisfaction progress and the amount of success factors present. To be sure the right decision is made, qualitative data is reviewed.

Project 7: According to the opinions of the participants in the project it progresses well, but there are only little success factors present. This is because of the structure of the project. Statements made about the absence of the success factors are:

<u>Ondersteuning management team:</u> "We worden niet echt ingekaderd van je mag alleen maar dit of je mag alleen maar zo of je moet die kant op. Dat valt wel mee. Het wordt gezien als een fundamenteel project. Fundamenteel onderzoek en dat geeft veel vrijheid." Quote from interview.

<u>Duidelijke autoriteit</u>: about the project leader and professors from the university: "Die laten wel duidelijk hun mening weten, met name ook de professor, maar ja, hij geeft toch altijd vaak aan, maar dit is gewoon een idee, een mogelijkheid en kijk maar of je er wat mee kan doen. Dus ja, in die zin is het niet heel erg autoritair gericht of sturend of zo." Quote from interview.

<u>Juiste eigenschappen projectleider</u>: about project meetings: " Dus hij mag het wel wat strakker leiden wat mij betreft." Quote from interview.

<u>Conclusion</u>: The factor ondersteuning management team is not wished for. Also the factor duidelijke autoriteit is not missed; the AIO's are meant to make their own decisions. The factor juiste eigenschappen projectleider are yearned for a little bit more, because sometimes there is a lack of structure.

Because of these reasons the project is seen as a good progress project.

Project 9: According to the opinions of the participants in the project it does not progress well, but most success factors are present. Statements about the project's progress are:
- "Planning en ambities zijn soms te optimistisch. Ik werk niet helemaal op mijn expertisegebied en moet continu aanpoten om mijn deliverables te halen." Quote from questionnaire.
- "De output is te weinig voor de tijd die is verstreken. De planning wordt vaak niet gehaald." Quote from questionnaire.
- "Resultaten worden wel behaald, maar vaak niet voor de gestelde deadline." Quote from questionnaire.
- "De laatste maanden loopt het team niet meer zo lekker en hebben we door verschillende oorzaken vertraging opgelopen in de planning." Quote from questionnaire.
- About the project's progress: "Dat ligt denk ik voornamelijk aan dat iedereen zo druk is ook met andere projecten, en ikzelf ook, dat je ja, soms hier toch niet genoeg tijd aan kunt besteden en ja, soms is dat jammer omdat je dan of achter raakt of afspraken die je gemaakt hebt, deliverables die je zou halen. --- En we hebben binnen het project al een aantal keer gehad dat we dingen vooruit moesten schuiven". Quote from interview

<u>Conclusion</u>: The opinion is clearly not positive, because of the failure to follow the planning. The planning is present, but is not anticipated on. Therefore the project is behind on schedule. Clearly the participants think this is an important issue for the progress of the project.

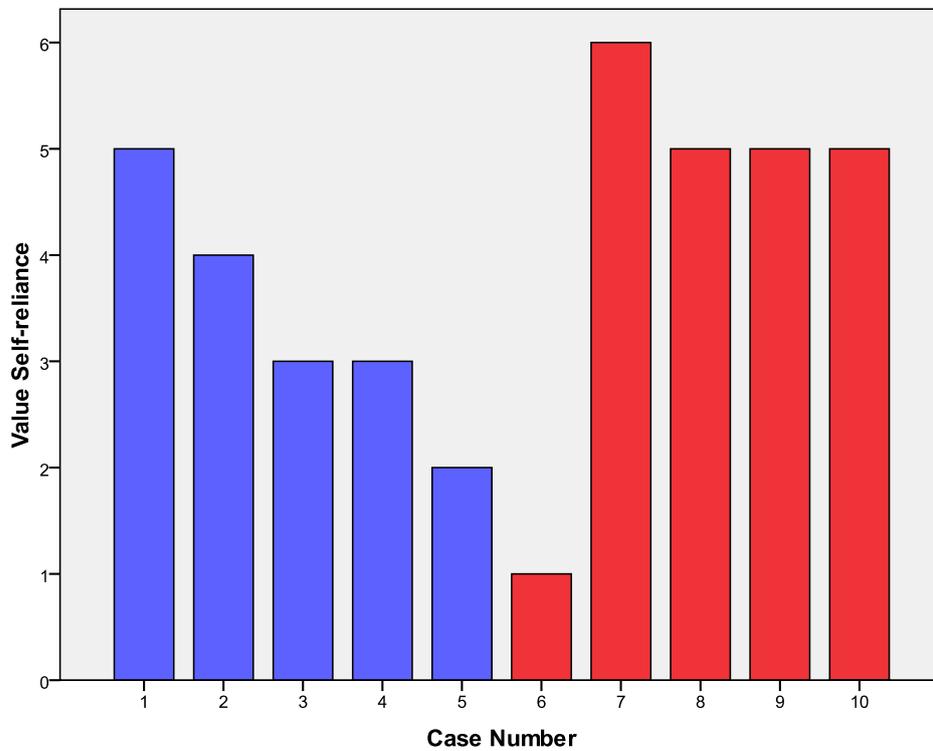Because of this reason the project is seen as a poor progress project

Conclusion:

Project 4 and 9 are poor progress projects. The other projects progress well.

Appendix Q. Histograms 16PF (M and Q2) in relation to project type
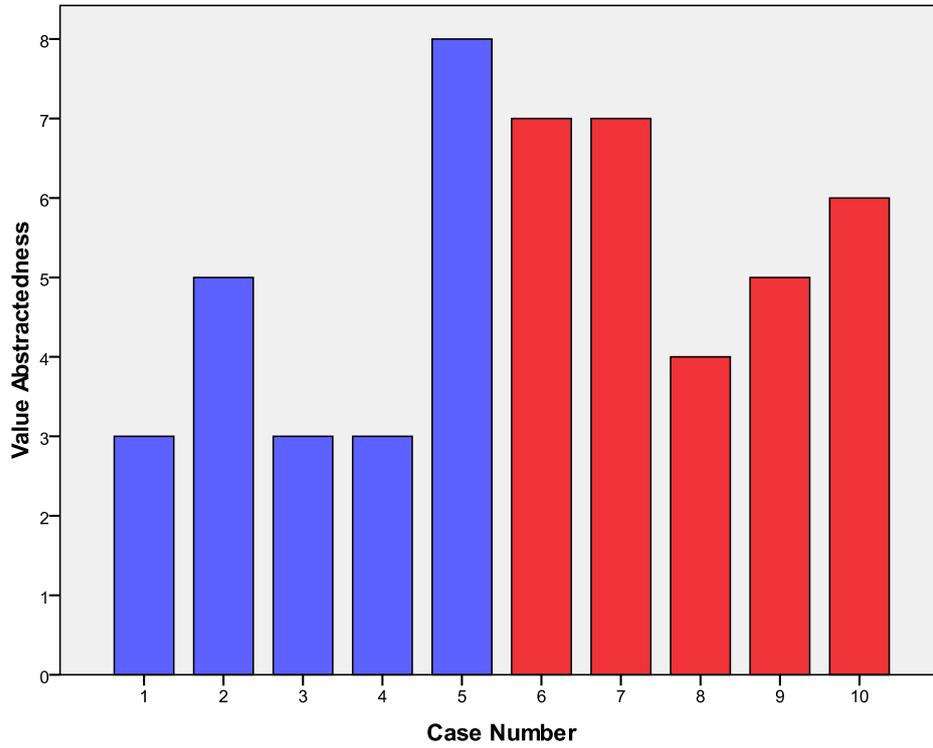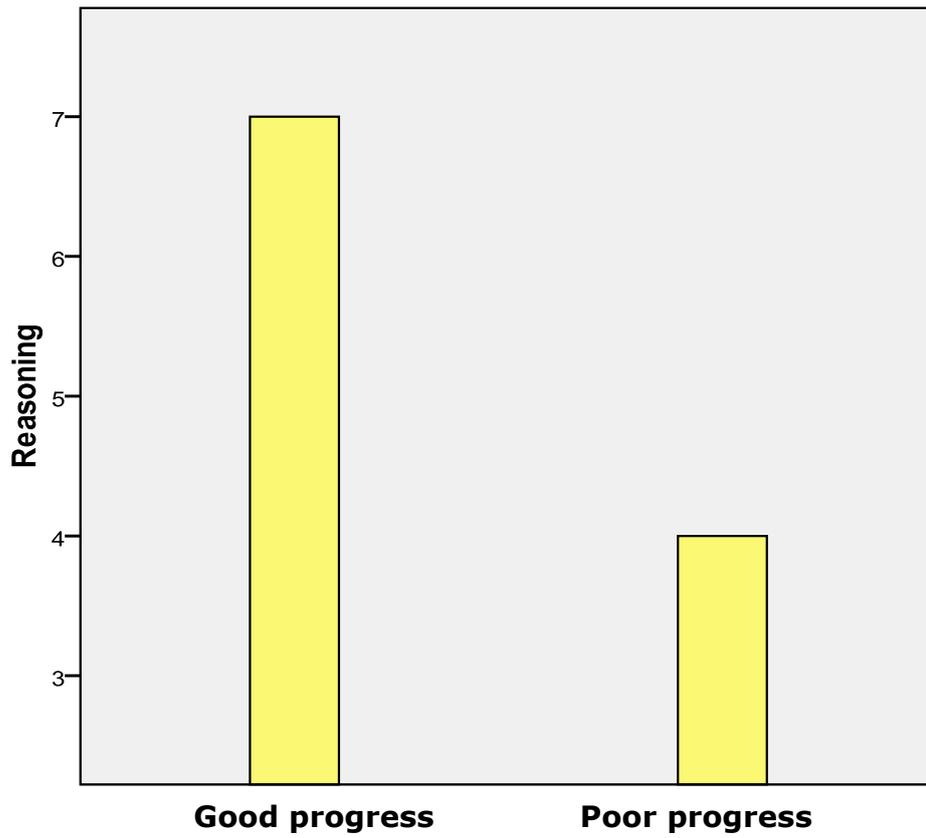

Histogram M (abstractedness) in relation to project type
Blue is fixed deliverable
Red is experimental

Histogram Q2 (self-reliance) in relation to project type
Blue is fixed deliverable
Red is experimental

Histogram B (reasoning) in relation to progress

Appendix S. Summary of the results

Overall requirements for a good progress	
16PF	**Level**
B: Reasoning	*High:* Abstract, bright, fast-learner
C: Emotional stability	*High:* Emotionally stable, adaptive, mature
Q1: Openness to change	*High (extreme):* Open to change, experimenting
Q4: Tension	*Low (extreme):* Relaxed, placid, patient
Anxiety	*Low:* Low anxiety, imperturbable

Level of personality factors needed to increase level of progress for all projects

Requirements for fixed deliverable projects		
16PF	**Level**	
A: Warmth	*Medium*: A little reserved, impersonal, distant and a little warm-hearted, caring, attentive to others	
B: Reasoning	*Low*: Concrete, lower mental capacity	
E: Dominance	*Low*: Deferential, cooperative, avoids conflict	
G: Rule-consciousness	*High*: Rule-conscious, dutiful	
Self-control	*High*: Self-controlled, inhibits urges	
M: Abstractedness	*Low (extreme)*: Practical, grounded, down-to-earth	
Q2: Self-reliance	*Low (extreme)*: Group-oriented, affiliative	
Phase is feasibility	**16PF**	**Phase is not feasibility**
Low: Expedient, nonconforming	G: Rule-consciousness	*High*: Rule-conscious, dutiful
High: Sensitive, aesthetic, tender-minded	I: Sensitivity	*Low (extreme):* Tough, objective, unsentimental
Low: Unrestrained, follows urges	Self-control	*High*: Self-controlled, inhibits urges
Participants are included in the decision making process	**16PF**	**Participants are not included in the decision making process**
High: Socially bold, venturesome, thick-skinned	H: Social boldness	*Low*: Shy, timid, threat-sensitive
Low (extreme): Self-assured, unworried, complacent	O: Apprehension	*High*: Apprehensive, self-doubting, worried
Low: Tolerates disorder, unexacting, flexible	Q3: Perfectionism	*High:* Perfectionistic, organized, self-disciplined
High (extreme): Extraverted, socially participating	Extraversion	*Low*: Introverted, socially inhibited
Dynamic	**16PF**	**Stable**
Low: Deferential, cooperative, avoids conflict	E: Dominance	*High*: Dominant, forceful, assertive
High: Sensitive, aesthetic, tender-minded	I: Sensitivity	*Low:* Tough, objective, unsentimental
Low: Unrestrained, follows urges	Self-control	*High*: Self-controlled, inhibits urges
People oriented	**16PF**	**Content oriented**
High: Abstract, bright, fast-learner	B: Reasoning	*Low:* Concrete, lower mental capacity
High: Independent, persuasive, wilful	Independence	*High (extreme):* Independent, persuasive, wilful

Level of personality factors needed to increase level of progress in fixed projects

Requirements for experimental projects	
16PF	**Level**
A: Warmth	*Low (extreme)*: Reserved, impersonal, distant
B: Reasoning	*High*: Abstract, bright, fast-learner
E: Dominance	*High*: Dominant, forceful, assertive
G: Rule-consciousness	*Low (extreme)*: Expedient, nonconforming
Self-control	*Low*: Unrestrained, follows urges
M: Abstractedness	*High*: Abstracted, imaginative, idea-oriented
Q2: Self-reliance	*Low*: Group-oriented, affiliative

Level of personality factors needed to increase level of progress in experimental projects

Significant relations (α = 0.1)		
One location	**16PF**	**Multiple locations in the Netherlands**
Low: Practical, grounded, down-to-earth	M: Abstractedness	*High:* Abstracted, imaginative, idea-oriented
Low (extreme): Traditional, attached to familiar	Q1: Openness to change	*Low:* Traditional, attached to familiar
Process planning	**16PF**	**Global planning**
High: Dominant, forceful, assertive	E: Dominance	*Low:* Deferential, cooperative, avoids conflict
High: Enthusiastic, animated, spontaneous	F: Liveliness	*Low:* Serious, restrained, careful
High: Extraverted, socially participating	Extraversion	*Low*: Introverted, socially inhibited
High: Independent, persuasive, wilful	Independence	*Low:* Accommodating, agreeable, selfless
Stand alone	**16PF**	**Grouped with other locations**
Low: Forthright, genuine, artless	N: Privateness	*Low (extreme):* Forthright, genuine, artless
Low: Group-oriented, affiliative	Q2: Self-reliance	*Low (extreme):* Group-oriented, affiliative
Low (extreme): Low anxiety, imperturbable	Anxiety	*Low:* Low anxiety, imperturbable
Low (not extreme): Unrestrained, follows urges	Self-control	*Low (extreme)*: Unrestrained, follows urges
Phase is research	**16PF**	**Phase is not research**
High: Dominant, forceful, assertive	E: Dominance	*High (extreme):* Dominant, forceful, assertive
Low: Serious, restrained, careful	F: Liveliness	*High (extreme):* Enthusiastic, animated, spontaneous
Low: Introverted, socially inhibited	Extraversion	*High*: Extraverted, socially participating
Low: Accommodating, agreeable, selfless	Independence	*High (extreme):* Independent, persuasive, wilful
Phase is development	**16PF**	**Phase is not development**
Low (extreme): Forthright, genuine, artless	N: Privateness	*Low:* Forthright, genuine, artless
Low (extreme): Group-oriented, affiliative	Q2: Self-reliance	*Low:* Group-oriented, affiliative
Low: Low anxiety, imperturbable	Anxiety	*Low (extreme)* Low anxiety, imperturbable
Low (extreme): Unrestrained, follows urges	Self-control	*Low*: Unrestrained, follows urges
Phase is other	**16PF**	**Phase is not other**
Low: Practical, grounded, down-to-earth	M: Abstractedness	*High:* Abstracted, imaginative, idea-oriented
High: Open to change, experimenting	Q1: Openness to change	*Low:* Traditional, attached to familiar
The project team is included in the decision making process	**16PF**	**The project team is not included in the decision making process**
Low: Forthright, genuine, artless	N: Privateness	*Low (extreme):* Forthright, genuine, artless
Low: Group-oriented, affiliative	Q2: Self-reliance	*Low (extreme):* Group-oriented, affiliative
Low (extreme): Low anxiety, imperturbable	Anxiety	*Low:* Low anxiety, imperturbable
Low: Unrestrained, follows urges	Self-control	*Low (extreme)*: Unrestrained, follows urges
Internal parties within own organisation are included in the decision making process	**16 PF**	**Internal parties within own organisation are not included in the decision making process**
High: Emotionally stable, adaptive, mature	C: Emotional stability	*Low:* Reactive, affected by feelings
External parties that finance are included in the decision making process	**16PF**	**External parties that finance are not included in the decision making process**
High (extreme): Socially bold, venturesome, thick-skinned	H: Social boldness	*Low:* Shy, timid, threat-sensitive
Low (extreme): Tough, objective, unsentimental	I: Sensitivity	*Low:* Sensitive, aesthetic, tender-minded
Low: Trusting, unsuspecting, accepting	L: Vigilance	*Low (extreme):* Trusting, unsuspecting, accepting
High: Tough-minded, resolute, unempathic	Tough-mindedness	*Low:* Receptive, open-minded, intuitive
Dynamic	**16PF**	**Stable**
Low: Relaxed, placid, patient	Q4: Tension	*Low (extreme):* Relaxed, placid, patient
People oriented	**16PF**	**Content oriented**
Low (extreme): Tough, objective, unsentimental	I: Sensitivity	*High:* Sensitive, aesthetic, tender-minded
High: Abstracted, imaginative, idea-oriented	M: Abstractedness	*Low:* Practical, grounded, down-to-earth
Low: Traditional, attached to familiar	Q1: Openness to change	*High:* Open to change, experimenting
High: Tough-minded, resolute, unempathic	Tough-mindedness	*Low:* Receptive, open-minded, intuitive

Sequel Level of personality factors needed to increase level of progress in experimental projects

Appendix T. Personality issues from the literature translated to the 16PF

Author	Personality issue	16PF	Low level	High level
McDonough III (1990)	Cognitive style	Q1 (openness to change)	Associative style	Bisociative style
Dvir et al. (2006)	Perceiving	Q3 (perfectionism)	Perceiving	
Dvir et al. (2006)	Openness to experiences	M (abstractedness)	Low	High
Dvir et al. (2006)	Rebellious dreamer	G (rule-consciousness)	Rebellious dreamer	-
Müller and Turner (2007a)	Self-awareness	O (apprehension)	Self-awareness	-
Müller and Turner (2007a)	Sensitivity	I (sensitivity)	-	Sensitivity
Müller and Turner (2007a)	Conscientiousness	G (rule-consciousness)	-	Conscientiousness
Storm and Vuijk (2008)	Stimulating	Q2 (self-reliance)	Stimulating	-
Storm and Vuijk (2008)	Creative	M (abstractedness)	-	Creative
Storm and Vuijk (2008)	Interested	A (warmth)	-	Interested
Storm and Vuijk (2008)	Amiable	A (warmth)	-	Amiable
Storm and Vuijk (2008)	Diplomatic	N (privateness)	-	Diplomatic
Storm and Vuijk (2008)	Self-aware	O (apprehension)	Self-aware	-
Storm and Vuijk (2008)	Autonomous	Independence	-	Autonomous
Storm and Vuijk (2008)	Independence	Q2 (self-reliance)	-	Independence
Storm and Vuijk (2008)	Cooperative	Q2 (self-reliance)	Cooperative	-
Storm and Vuijk (2008)	Cohesive	Q2 (self-reliance)	Cohesive	-
Storm and Vuijk (2008)	Loyal	None	-	-
Storm and Vuijk (2008)	Dedicated	None	-	-
Storm and Vuijk (2008)	Organizing	None	-	-
Storm and Vuijk (2008)	Steady	E (dominance)	-	Steady
Storm and Vuijk (2008)	Realistic	M (abstractedness)	Realistic	-
Storm and Vuijk (2008)	Pragmatic	I (sensitivity)	Pragmatic	-