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How to attract engineers: Connecting the dots for Company X

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Improving the organisational attractiveness for Company X by investigating the most valuable job and organisational characteristics of engineers in the Netherlands

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Master Thesis

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Executive summary

The aim of this study is to improve the attractiveness of Company X as an employer of highly trained engineers. Company X is a growing organisation and in order to keep up with its organisational growth CX needs to recruit and hire a lot of new engineers. The problems that CX faces are relating to the labour shortages in the Dutch labour market where it is especially hard to recruit engineers. This study will therefore focus its attention on the strongest predictors of organisational attractiveness in order to present the predictors that are most important according to technical students and engineers.

The recruitment problems of CX are not disastrous, but need some attention in order to keep up with the organisational growth. CX wants to recruit one hundred new employees in the coming two or three years. However, many researchers predict a general labour shortage due to the retirement of the baby-boom generation, while others show that especially the technical industry will face recruitment difficulties due to a shortage of engineers. In order to attract the group of technical engineers that are recently graduated CX needs to become more attractive for this potential target population. The central research question in this study is therefore; *"In what way can Company X improve their organisational attractiveness for potential (technical) applicants?"*

To answer this research question an extensive literature review on organisational attractiveness was conducted. The results review indicated that for attracting potential applicants, CX needs to get their attention before the early recruitment process. Moreover, CX needs to be viewed as a positive place to work for the potential applicants. From the theory, we learn that *"type of work"* and *"the work environment"* are the main predictors of organisational attractiveness before the early recruitment processes. Type of work and the work environment are represented in this study by the following list of work characteristics that eventually determine organisational attractiveness; *Challenge, Autonomy, Flexibility, Leadership, Reward and recognition, Supportive work environment, and Learning and development opportunities.* Eventually, these constructs were divided into fifteen different dimensions that have been rated by different groups of respondents to find out which job and organisational characteristics are most attractive according to potential applicants (technical students and engineers).

The results indicate that there are seven significant differences in the most attractive job and organisational characteristics between students and engineers. Students are more attracted by social support and promotion opportunities, while engineers already working for the organisation value learning and development opportunities, social responsibility, work scheduling autonomy, decision making autonomy, and flexibility as more attractive predictors of an organisation. It can therefore be concluded that CX needs to make a distinction in the recruitment messages for engineers and for students. In addition to the in general most preferred work characteristics of leadership, and praise and recognition, CX needs to pay more attention to the preferred attractive work characteristics for each sample. In other words, for recruiting students the focus should be on social support and promotion opportunities, while the recruitment message for engineers should contain more concrete information about learning and development opportunities, social responsibility, work scheduling autonomy, decision making autonomy, and flexibility.

Preface

This study is a result of the research project conducted in order to receive a Master of Science degree for the Master of Business Administration - HRM track. The research project is conducted for Company X in cooperation with the University of Twente. Without the help of a lot of people that are interested and were involved in my research project I would not have been able to manage it. For this reason, I would like to use this opportunity to thank these people;

First of all, I would like to thank my supervisors at Company X. Cristel, Ronald, thanks for the feedback, support, and HR input you gave me during the project. It offered me the opportunity to look further than just the theoretical aspects necessary to complete my thesis and kept me motivated. In addition, I also want to thank the employees of the HR department, works council, engineers and support department employees of CX who helped me by exchanging ideas/views or by filling the questionnaire.

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Table of Contents

Executive summary 2
Preface 3
1. Introduction 5
2. Theoretical background 7
2.1. Organisational attractiveness 7
2.2. The design of work 15
2.2.4. Conclusions and research model 24
3. Methodology 26
3.1. Research design 26
3.2. The samples 27
3.3. The questionnaire 28
3.4. The exploratory factor analysis 29
4. Results 34
4.1. Exploring differences 34
4.2. Preferred benefits 38
4.3. Commuting preferences 40
5. Conclusions and Discussion 41
5.1. The scientific findings 41
5.2. Practical recommendations 47
5.3. Limitations 51
5.4. Future research 51
Bibliography 52
Appendix A: Overview of the measurement scales and factor analysis output 61
Appendix B: Overview of additional tables to explain the test results 70
Appendix C: Overview of the preferred benefits 72
Appendix D: The students questionnaire 75

1. Introduction

In recent years, recruiting qualified applicants has become a top management concern for many organisations. In the Netherlands, many researchers predict labour shortages which increase the difficulty to recruit highly qualified applicants in the coming years. The main cause researchers give for the labour shortage is the retirement of the baby-boom generation. The Dutch baby-boom generation consists of people who are participating in the labour market and are born between 1945 and 1960 (CBS, 2011). According to the CBS (2011) the number of people that will retire each year shall increase until 2026 (CBS, 2011). In that same period the amount of students that graduates and enters the labour market remains the same (CBS, 2011). It can therefore be concluded that in the near future managers will face even more recruitment difficulties.

In the current Dutch labour market a lot of technical organisations are already facing recruitment problems due to the labour shortages (UWV, 2011; Manpower, 2011). Manpower (2011) indicates that vacancies for engineers are worldwide the most difficult vacancies to fulfil. Similar results are found in Europe and the Netherlands, which places technical vacancies second on the list of hardest vacancies to fulfil (Statline, 2011; Manpower, 2011; Berenschot, 2011; de Beer, 2006). A closer look at the numbers of the CBS (Statline, 2011) indicates that the number of graduating technical students who will enter the labour market remains stable within the coming years. However, the amount of technical employees that will retire and leave the labour market is increasing (CBS, 2011). As a consequence of the labour shortages, a war for talent or maybe even worse, a war for applicants will be created (Michaels, Handfield-Jones, & Axelrod, 2001).

Company X (from now on CX) is one of those technical organisations that face recruitment problems as a result of the labour shortages. In order to keep up with the organisations' growth it is crucial to recruit highly qualified engineers. The aim of CX is to recruit and hire 100 employees within the coming two or three years. The main purpose of this study is therefore to find a solution or improvement that makes it easier to recruit qualified engineers.

One of the solutions for CX to solve these problems is by becoming more attractive as an employer. Uggerslev et al. (2012) describe that the future recruitment process will be all about providing potential applicants the information they desire which improves the possibility that they will find an organisation more attractive. However, the study of Collins and Stevens (2002) indicates that it is crucial to improve the attractiveness for applicants before the recruitment process will start. If the potential applicants are not attracted by the organisation before the early recruitment phases, they are not interested for a participation in the recruitment process at all. The aim of this study is therefore to explore what makes an organisation attractive according to technical students that will graduate in the near future in the Netherlands. The results of this study present an overview of opportunities that can contribute to the attractiveness of CX. The central research question therefore is;

"In what way can Company X improve its organisational attractiveness for potential (technical) applicants?"

The answer to the main research question has a scientific relevance and a practical relevance. First of all, the scientific relevance is that this study contributes to the theory which indicates the

strongest predictors of organisational attractiveness. Moreover, it will generate new insights because this research focuses on the strongest predictors of organisational attractiveness for technical students in the Netherlands. A population that has not been studied a lot in previous studies that indicates the main predictors of organisational attractiveness. Second, the practical relevance of this study is that CX will become able to improve their organisational attractiveness. By indicating the most important work characteristics for organisational attraction it becomes possible for Company X to adjust these characteristics in favour of their potential target group of applicants. By adjusting these work characteristics into their organisation the employees will become more satisfied and additionally it shall attract potential applicants if CX uses the most attractive work characteristics in their recruitment messages.

To generate an answer to the central research question this study will first present the most relevant theories for organisational attractiveness in the theoretical background section (chapter 2). The research question that will be answered in the theoretical background chapter is; *"What is organisational attractiveness, what are its main predictors, and how can they be measured adequately?"* After presenting the main theories, the methodology section explains the methods that are used to obtain data and how these data are analyzed by answering the second research question (chapter 3); *"What are the methodologies that have to be used in order to give an answer to the central research question?"* Chapter four presents the results of this study, followed by chapter five which describes the scientific findings and practical recommendations, the limitations of this study, and suggestions for future research.

2. Theoretical background

This chapter discusses the theoretical concepts of organisational attractiveness. First of all the theory of organisational attractiveness and its predictors will be discussed. Second, it discusses the operationalisation of the strongest recruitment predictors of job and organisational attractiveness in order to construct a questionnaire. The chapter ends with the final research model.

2.1. Organisational attractiveness

Recruiting applicants is one of the most important activities for an organisation to become successful (Rynes & Barber, 1990). Attracting and recruiting highly qualified applicants can lead to a competitive advantage in comparison with other organisations in the same industry (Ehrhart & Ziegert, 2005). Boswell, Roehling, and LePine (2003) explained that; *"Competitive pressures, greater recognition of human resources as a potential source of competitive advantage, and changing workforce demographics have made the attraction of the best available talent a top management concern" (p. 2.).* The top management of organisations need to find opportunities to become an attractive, or even the most attractive organisation in a specific industry. For that reason, the following definition of organisational attractiveness is used in this study; *"Getting potential candidates to view the organisation as a positive place to work* (Ehrhart & Ziegert, 2005, p. 902)*".* In order to get the potential candidate to view the organisation as a positive place to work this paragraph will explore the concept of organisational attraction by using the most relevant theories. The main purpose of this chapter is to give an answer on the following question; *"What is organisational attractiveness, what are its main predictors, and how can they be measured adequately?"*

2.1.1. Organisational image

Organisational image plays a crucial role in the attraction of qualified applicants (van Roon, 2010; Lemmink, Schijf, & Streukens, 2003; Cable & Turban, 2003). Fombrun and Shanley (1990) stated that one of the main advantages of a good image is that it leads to the attraction of highly qualified applicants. Organisational image is defined as: *"The way the organisation is perceived by individuals. It is a loose structure of knowledge, belief, and feelings about the organisation."* (Tom, 1971, p. 576). As the definition indicates, organisational image can be interpreted from different angles. For example, Downling (1986) presents in his study that there are different kinds of organisational images of which the organisational image as an employer is the most relevant one for this study. Dowling (1986) indicates that students form a general image of an organisation during their college years, while after their graduation students become more interested in the employers' image of an organisation. The similarities between the employers' image and organisational attractiveness can be found in the definition of organisational attractiveness from Ehrhart and Ziegert (2005) which is presented in paragraph 2.1 and the definition of employers image from Berthon, Ewing, and Hah (2005). Berthon et al. (2005) define employer attractiveness as *"the envisioned benefits that a potential employee sees in working for a specific organisation" (p. 156)*. In comparison, both definitions include a number of important components which are crucial in the attraction of highly qualified applicants. First

of all, both present an individualistic approach which determines the attraction of an individual to an organisation. Second, the definitions indicate that potential applicants will become attracted by an organisation if it is viewed as a positive place to work. Moreover, an employer will be seen as positive if the applicant sees the envisioned benefits the organisation offers.

In order to create an adequate employers' image, it will be important to generate answers to the following four questions; *1. "Who are we as an organisation?" 2. "What does the organisation want others to think about the organisation?" 3. "What does the organisation believe others think of the organisation?"* and *4. "What do stakeholders actually think of the organisation?"* (Brown et al., 2006, p. 100). These four key questions of organisational image are related to the identity, image, and reputation of the organisation as is explained in the study of Brown, Dacin, Pratt, and Whetten (2006). Although all four of the questions are crucial for the improvement of organisational image, this study mainly focuses on the fourth question which is from an individual perspective. The main reason for using the individualistic approach is that the individualistic perspective determines how potential applicants become attracted by an organisation (Ehrhart & Ziegert, 2005; Murphy & Tam, 2004).

Receiving an answer from stakeholders on the fourth question can help the organisation by finding the gap between the fourth question and question two and three. If the gap is found, the organisation is able to answer question two and change their job and organisational characteristics to improve its image. By adjusting these predictors in the organisation (question one) current employees may identify themselves better with the organisation which makes them more enthousiastic. As a result, the employees share more positive information about the organisation which has a positive impact on for example potential applicants (question two) (van Roon, 2010). Other researchers indicate that providing a higher amount of information, and very detailed information increases the organisational familiarity. Moreover, it has an positive impact on the intentions of potential applicants to apply (Roberson, Collins, & Oreg, 2005; Lemmink, Schijf, & Streukens, 2003; Gatewood, Gowen, & Lautenschlager, 1993; Barber & Roehling, 1993). Therefore, it is crucial to bring the answers on question three and four closer to each other to increase the organisational attractiveness which should result in a more positive employers image.

2.1.2. The different dimensions of organisational attractiveness

By generating an answer on the fourth question *"what do stakeholders actually think of the organisation"* it becomes possible to describe the perceived organisational attraction by for example a potential applicant. However, before indicating the perceived organisational attractiveness it is crucial for the organisation to find out in which dimension they will increase their attraction. Highhouse et al. (2003) therefore explored the different dimensions of organisational attractiveness. Their results present three different dimensions, which are; "*company attractiveness", "intentions toward the company",* and *"company prestige"*. First of all, company attractiveness refers to the perception of an individual to look at an organisation as a potential place for work. It is the general attractiveness of an organisation that will be judged by an individual based on its objective factors (job and organisational characteristics). In this stage, an individual only judges the attraction of an organisation without having any intentions to pursue a job at that organisation. Second, the pursuing intention of an individual plays a crucial

role in the second dimension. In comparison with the first dimension, the second dimension presents the individuals' intentions to pursue a job at a specific organisation. The third dimension is described as the company prestige dimension and consists of the degree to which an organisation is perceived of being reputable and well regarded. The organisation will be judged on its social influence or the organisations image as an employer. In this study, the focus will be on the company attractiveness dimension which can be explained by the theory from Barber (1998).

Barber (1998) explains that the recruitment process can be divided into three different phases; *"the orientation phase", "the match phase",* and *"the job choice phase"* (Murphy & Tam, 2004; Barber, 1998). In each of the recruitment phases different organisational aspects will determine the organisational attractiveness which can be explained by the different questions that have to be answered by the organisation and the individual. For example, in the orientation phase people decide what kind of job they would prefer to apply for. This decision is based on the individual perspective in which the individual asks them self the question; "*whether or not to apply for a particular job"* (Murphy & Tam, 2004). By determining why potential applicants apply for a job (or not), the organisation becomes able to give an answer to the question from the organisations perspective; *"how to attract highly qualified applicants"*. A similar way can be used to obtain answers on the questions of the match and job choice phase to increase the organisational attractiveness. The questions that needs to be answered from the individualistic perspective are; *"whether or not to remain as an active applicant as the organisation makes its decisions about applicants"* (match phase) and *"if a job offer is made, whether or not to accept it"* (job choice phase) which will eventually generate the answers on the questions from the organisational perspective; *"how to maintain applicant status"* and *"how to influence job choice"* (van Roon, 2010, p. 21). The questions within every recruitment phase indicate that it is crucial to attract applicants before the actual recruitment process. Collins and Stevens (2002) explain that if an applicant is not attracted before the early recruitment processes, he/she will not apply for the recruitment process. It is therefore crucial to attract potential applicants before the early recruitment phases in order to obtain answers on the questions of the other recruitment phases that can optimize the recruitment process itself. A possible result can be that the organisation becomes able to provide applicants the information they desire and to avoid a lot of costs related to the recruitment of unqualified or too many applicants (Uggerslev, Fassina, & Kraichy, 2012; Dineen, Ling, Ash, & DelVecchio, 2007; Murphy & Tam, 2004; Swanberg & Simmons, 2008; Sarros, Gray, Densten, & Cooper, 2005).

The focus of this study will therefore be on the first organisational question; *"How to attract highly qualified applicants?"* The theory presents that this question will be answered by applicants in the orientation phase and therefore the focus of this study will be on the attraction of potential applicants in the orientation phase (company attractiveness). In this phase the applicants have to be attracted by the job and organisational characteristics of an organisation before enrolling the later recruitment phases (Uggerslev, Fassina, & Kraichy, 2012). The next paragraph discusses the different theoretical approaches which determine the attraction of an individual by an organisation.

2.1.3. Theoretical approaches for organisational attraction

Although many researchers tried to clarify the different theoretical approaches of organisational attractiveness (Kristof, 1996; Schneider, 1987; Behling, Labovitz, & Gainer, 1968; Vroom, 1966), the theory of Behling et al. (1968) is commonly considered as the basis for the further theoretical development of organisational attractiveness. The three main approaches distinguished by the theory of Behling et al. (1968) are; *"the objective factor theory", "the subjective factor theory",* and *"the critical contact theory".*

The objective factor theory indicates that when potential applicants are not familiar with an organisation, its attraction will be determined by the organisations objective factors. The objective factor theory is based on the expectancy theory of Vroom (1966) which proposes that the behaviour of an individual will predict the performed results based on the three key elements *expectancy, instrumentality and valence* (Ilgen, Nebeker, & Pritchard, 1981). Expectancy indicates to what extent an individual is able to reach performance goals. Instrumentality refers to the individual's believe of receiving a (valued) reward if the performance goals are met. And valence determines the employees' satisfaction when the performance goals are met and the rewards received. In other words, the employee becomes attracted by an organisation if he is able to perform the required job and its performance targets to receive a reward in the form of objective factors. Examples of these objective factors are; *"pay, benefits, location, opportunity for advancement, nature of work to be performed and educational opportunities."* (Tom, 1971, p. 574). It is important to mention that the objective factor theory only determines the attraction of employees and not the job pursuing intentions of an applicant.

The subjective factor theory states that individuals base their attraction by an organisation on the congruence between emotional needs and the ability of the organisation to fulfil those needs. In comparison with the objective factor theory, it is indicated that the subjective factor theory is especially based on the individuals' behaviour and preferences. The subjective factor theory is further developed by Schneider (1987). Schneider (1987) proposes that potential applicants are attracted by an organisation that consists of people with *similar interests, behaviour, attitudes, and needs*. Based on the similarities, potential applicants will be attracted and selected by a potential employer. With his Attraction-Selection-Attrition framework, Schneider explains how the subjective factor theory can be used in order to find a match based on subjective factors. As a result it can be indicated that the similarities in interests, behaviour, attitudes, and needs between employees of the organisation and potential employees will fulfil emotional needs and therefore attract potential applicants.

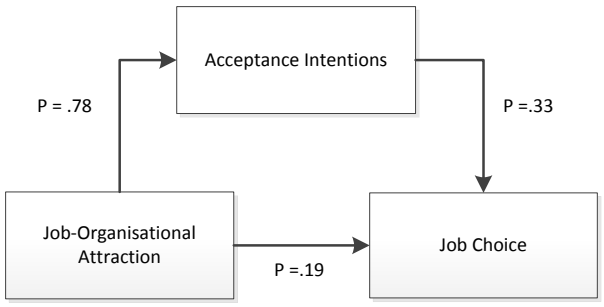
The third theory distinguished by Behling et al. (1968) is the critical contact theory. According to the critical contact theory applicants base their decision on the contact moments with representatives of the organisations if they are not able to make a decision on the objective or subjective factor theory. For example, organisation A en B have different organisational characteristics that make them attractive as an employer, but when the applicant weights these characteristics he/she is not able to make a final job decision. According to the theory, the applicant will then base its decision on the contact moments with a recruiter, the physical environment of the organisation, or the efficiency of recruiting processes (Tom, 1971).

This study only uses the objective factor theory to determine which job and organisational characteristics are important for attracting highly qualified applicants. The subjective factor theory will not be used because it is really hard to find a fit between an individual's emotional needs and the ability of the organisation to fulfil these needs. Moreover, the process of indicating an individual's preferences in relation with their interests, behaviour, attitudes and needs costs a lot of money and is time-consuming. Additionally, the purpose of this study is not to find a match between one individual and the organisation, but to find a match between the target population of highly qualified engineers and an organisation. This is also the reason why the person-organisation fit (from now on PO-fit) of Kristof (1996) is not discussed in this chapter. The PO-fit theory indicates that an individual becomes attracted by an organisation if both the objective factors and the subjective factors of an organisation fit the individuals' needs. As a matter of fact, the aim is not to recruit and attract one single applicant but a lot of engineers that do not share the same individual interests and behaviours. In addition, the critical contact theory will not be used because the contact moments on which the individual determines his eventual choice take place in the recruitment process. Our aim is to make the organisation more attractive before the start of the early recruitment process. As a result, the objective factor theory comes forward as the most appropriate theory to find factors that can help to improve the organisations attraction and the employers' image. It is easier for an organisation to indicate the most valuable objective factors for organisational attractiveness according to a potential group of applicants, than the individual (personal) values of the subjective factor theory. However, the question that still needs to be answered is; *"which objective factors will eventually determine the organisational attractiveness?"* The next paragraph therefore explores the recruitment outcomes which eventually determine the organisational attraction.

2.1.4. The recruitment outcomes that predict organisational attraction

One of the most recent studies that indicates the most valuable job and work characteristics in the attraction of applicants is the meta-analysis from Chapman, Uggerslev, Caroll, Piasentin, & Jones (2005). The meta-analysis discusses the effects of the recruitment outcomes on each other and the effects of recruitment predictors on these recruitment outcomes. This paragraph will first explore the different recruitment outcomes and their effects on each other. Additionally, paragraph 2.1.5 explores the different recruitment predictors and their effects on the discussed recruitment outcomes in this paragraph.

Figure 1: own interpretation of the derived results from the meta-analysis of Chapman et al. (2005, p. 938)



In their meta-analysis Chapman et al. (2005) distinguishes four different recruitment outcomes. The distinction is made upon 71 previous studies that consists of 74 independent samples and resulted in the following four higher order constructs; "*1. job pursuit intentions", "2. job-organisational attractiveness", "3. acceptance intentions",* and *"4. job choice" (p.929).* First of all, job pursuit intentions are described as the willingness of an individual to submit for a job or to stay in the applicant pool of an organisation (Chapman et al., 2005). Although this recruitment outcome is generated from previous research, the meta-analysis indicates that it has no direct effect on the eventual job choice of an applicant. For this reason, job-pursuit intentions are not further discussed in this study. Second, job and organisational attractiveness refers to the overall attraction of applicants to a job or organisation. The overall attraction is divided in; *the attraction to a job, the attraction to a prospective organisation, and the general attraction by an organisation (Chapman et al., 2005).* The results of the meta-analysis presents a strong effect of job and organisational attractiveness on acceptance intentions ($\rho = 0.78$ coefficient is corrected for the unreliability of predictor and criterion). The acceptance intentions are the third recruitment outcome and can be described as the possibility that an individual accepts a job offer from a specific organisation (Chapman et al., 2005). Results of their analysis indicate that by improving the recruitment outcome of job and organisational attractiveness the final job choice of an individual will be influenced in a direct ($\rho = 0.19$) but also an indirect way through the recruitment outcome of acceptance attentions ($\rho = 0.33$) as is presented in Figure 1. Job choice is defined here as *"choosing whether to accept a real job offer involveving an actual job"* (Chapman et al., 2005, p. 929). Therefore, it is indicated that improving the recruitment outcome of job and organisational attractiveness will first of all attract more applicants and in addition it has the most significant effect on the eventual job choice. The next paragraph will therefore explore what the strongest recruitment predictors are of the recruitment outcome job and organisational attractiveness.

2.1.5. The strongest predictors of job-organisational attractiveness

As a result of paragraph 2.1.4 which presents that the recruitment outcome of *"job and organisational attraction"* has the strongest effect on the acceptance intentions and job choices of potential applicants, this paragraph will explore the strongest predictors of job and organisational attractiveness. The meta-analysis of Chapman et al. (2005) presents an overview of recruitment predictors which consist of combined items from research over the past fifty years and shows their influence on the different recruitment outcomes. The six recruitment predictors identified by Chapman et al. (2005) are; "*1. job and organisational characteristics", "2. recruiter characteristics", "3. perceptions of the recruitment process", "4. perceived fit", "5. perceived alternatives",* and *"6. hiring expectancies" (p. 929, 930)*. However, it should be mentioned here that the job and organisational characteristics is the only recruitment predictor that is not directly related to the recruitment process of an organisation. The job and organisational characteristics are based the objective factor theory of Behling et al. (1968) and is concerned with an individuals' evaluation of the job and organisational characteristics. Examples of job characteristics are; *"pay, compensation and advancement, and type of work"*. In addition, examples of organisation characteristics are; *"organisational image, size, work environment, location and familiarity"* (Chapman et al., 2005, p. 934). Potential applicants can generate objective information about these characteristics before the recruitment process starts, while the

perceived organisational attractiveness of the other recruitment predictors will be generated in or after the recruitment process.

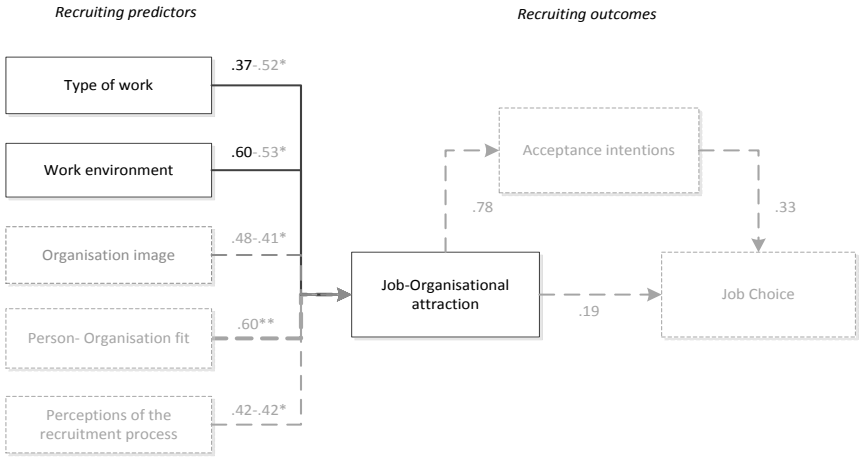
The recruitment predictors recruiter characteristics, perceptions of the recruitment process, perceived fit, perceived alternatives, and hiring expectancies will therefore not be used to indicate the attractiveness of an organisation. First of all, the recruiter characteristics and perceptions of the recruitment process will not be discussed because employees will have to be attracted by an organisation before they will decide to participate the recruitment process. In other words, the second and third recruitment predictors are redundant if no potential applicants are attracted by the organisation in the first place. Additionally Turban, Forret, and Hendrickson (1998) draw the conclusion that recruiter behaviours only have an indirect effect on applicant attraction by influencing the perception of the organisations job and organisational characteristics (Uggerslev et al., 2012; Turban, Forret, & Hendrickson, 1998). Therefore, the predictor of job and organisational characteristics is considered to be more appropriate to indicate organisational attractiveness. Second, the predictor of perceived fit will be ommitted because it is a result of the fit between one individual and the organisation. Moreover, Chapman et al. (2005) defined perceived fit as; *"the fit between an individuals' personality and the job or organisation characteristics (p. 929)"* which is based on the PO-fit. As explained in paragraph 2.1.3 it is hard to indicate a fit on an individual level. Moreover, it is time consuming, costs a lot of money, and will not determine the organisational attractiveness according to the group of applicants CX wants to attract. Third, the recruitment predictor of perceived alternatives will not be used because before the recruitment process there are not offered any job opportunities. In other words, if there is not offered a job opportunity, the applicant is not able to compare it with other employment opportunities and therefore does not decrease the job and organisational attraction. Fourth and final, the predictor of hiring expectancies will not be further discussed in this study but will be used indirectly. As the theory of Vroom explains (see paragraph 2.1.3), the hiring expentancies will arise as a result of valued rewards (the instrumentality). Because the main purpose of this study is to generate more insights in what these most valuable rewards or objective factors are, this study will therefore not use the hiring expectancies as one of the main predictors of job and organisational attraction.

As a result, the job and organisational characteristics will be used in this study as the most appropriate predictor of job and organisational attraction before the start of the recruitment phases. A further exploration of the meta-analysis from Chapman et al. (2005) depicts that the job and organisational characteristics are divided into two different constructs; *"job characteristics"* and *"work characteristics"*. This study will mainly focus on the strongest predictors of these two constructs. The results of the meta-analysis indicates that *type of work* ($\rho = 0.37$) is the strongest predictor from the job characteristic construct on job and organisational attraction and that the *work environment* ($\rho = 0.60$) is the strongest predictor from the work characteristics construct. Type of work and the work environment will therefore be used in this study as the main predictors of job and organisational attraction. Paragraph 2.2 will elaborate both predictors and eventually presents a measurement instrument that will be used to explore the most important work characteristics that determine the attraction of an organisation.

2.1.6. Conclusion

The aim of chapter 2 was to give an answer to the following research question; *"What is organisational attractiveness, what are its main predictors, and how can they be measured adequately?"* The discussed theory in paragraph 2.1 indicates that organisational attractiveness can be defined as *"Getting potential candidates to view the organisation as a positive place to work* (Ehrhart & Ziegert, 2005, p. 902)*"*. Therefore, this study will approach the organisational attractiveness from an individual perspective; *the perspective of highly qualified applicants*. A further exploration of the theory showed that these highly qualified applicants will have to be attracted before they can be recruited. In fact, these applicants will not participate in the recruitment process if they are not attracted by the organisation in the first place. The focus will therefore be on the organisation attractiveness before the early stages of the recruitment processes. As a result, job and organisational attraction seems to be the most promising focus point for this study. The most important predictors of job and organisational attractiveness are *type of work* and *the work environment* of an organisation. For this reason, the definition of organisational attractiveness that will be used in this study is as follows; *"getting potential candidates to view the organisation as a positive place to work as a result of the implemented type of work and work environment characteristics in the organisation"*. So far, the first two aspects of the research question have received an answer. The third aspect "how can they be measured adequately will receive an answer in paragraph 2.2. Figure 2 summarizes the main findings from the meta-analysis from Chapman et al. (2005) as they were interpreted in this study.

Figure 2: Own interpretation of the results derived from the meta-analysis of Chapman et al. (2005).



* ρ – "coefficient corrected for the unreliability of predictor and criterion". The first ρ value is related to job-organisation attraction as an outcome whereas the second ρ value relates to acceptance intentions.
** Direct relation with acceptance intentions not known.

2.2. The design of work

In the second section of this chapter the concept of work design will be discussed. The main purpose of this paragraph is to clarify the concepts of "type of work" and "work environment", the dimensions and their measurement scales that are used in this study. In fact, this paragraph presents an answer to the following question; "What is work design and how can it be adequately measured?"

2.2.1. Introducing work design

In paragraph 2.1 the conclusion is drawn that type of work and the work environment are the strongest predictors of job and organisational attraction before the recruitment process. The aim of this paragraph is to explore both predictors and the measurement instruments used in the past to generate more insights in their impact on organisational attraction.

Before discussing the existing theory and measurement instruments for type of work and the work environment, this paragraph first presents their definitions. Type of work can be defined as; "*the aspects that are directly related to the job activity"* (Jelstad, 2005, p. 5). The definition refers to the attributes of a job such as the tasks that have to be performed by employees, but also by work characteristics such as the perceived challenge and autonomy that are necessary to perform a job (Morgeson & Humphrey, 2006). Additionally, the work environment can be defined as: *"the day-to-day social and physical environment in which you currently do most or all of your work"* (Amabile, Conti, Coon, Lazenby, & Herron, 1996, p. 1165). The definition presents that the work environment is also organised with different work characteristics such as for example the social and contextual work characteristics (Morgeson & Humphrey, 2006). For both definitions it is possible to draw the same conclusion. As a matter of fact, both definitions indicate that type of work and the work environment are a result of the work characteristics implemented by the organisation. For this reason, it is indicated that the concepts of type of work and the work environment are somewhat related to each other (Morgeson & Humphrey, 2006; Parker & Wall, 1998). Morgeson and Humphrey (2008) therefore combined the concepts under the name *"work design".* In this study, the "work design" concept will be defined as; "*the implemented task, job, social, and organisational attributes in the direct environment of the organisation to improve the efficiency and effectiveness of an organisation"* which is partly based on the definition of Morgeson and Humphrey (2006) for work characteristics (Morgeson & Humphrey, 2006, p. 1322). The next paragraph will indicate which attributes of the tasks and job and social and organisational environment are used in studies from the past and how these attributes are measured.

2.2.2. Theory and measurement instruments related to work design

The aim of the studies that discussed the design of work was to improve organisational performance, job satisfaction, or organisational attractiveness (Morgeson & Humphrey, 2008). Although considerable research has been devoted to the concept of work design, rather less attention was paid to the measurement instruments of work design. Therefore this paragraph explores the development of different theories related to work design and as a result it will discuss the measurement instruments used in the past.

One of the first researchers who attempted to improve the effectiveness and efficiency of work design is Frederick W. Taylor (1911). The main purpose of his scientific management approach was to improve the effectiveness and efficiency of the work that needs to be performed, and to motivate and control employees by implementing individual based compensation systems.

In the period between 1924 and 1933 the Hawthorne studies proved that the social work characteristics also have an influence on the design of work. The purpose of the Hawthorne studies was to clarify the relationship between the brightness of light and the productivity of employees. However, the outcome of the study showed that it was not the brightness of the light that increased the productivity of the employees but the attention they received from the researchers (Morgeson & Humphrey, 2008). The Hawthorne studies therefore present an adequate indication of the way the social factors are important in the design of work.

In 1959, Herzberg et al. (1959) present their two factor theory that distinguished two different types of factors which influence job satisfaction; *"motivators"* and *"hygiene factors"*. The motivators represent the intrinsic factors of work and are effective in supporting the superior effort, motivation, and performance of employees (Herzberg, 1966). Examples of these intrinsic factors are; *recognition, achievement, responsibility, advancement, and personal growth in competence*. In contrast with the motivators that are intrinsic, the hygiene factors are the extrinsic factors of work and fall under the *contextual factors* of work design. According to Herzberg (1966) the hygiene factors will only facilitate the motivators and have no direct effect on the satisfaction of employees. By improving hygiene factors the dissatisfaction for extrinsic factors can be improved, but the (dis-) satisfaction with the intrinsic factors will not be influenced (Morgeson & Campion, 2003). Examples of these extrinsic factors are *company policies, supervisory practices, pay plans, and working conditions*.

As a result of the introduced two-factor theory from Herzberg et al. (1959) many researchers especially focused on intrinsic motivators of work design. One of the first examples is the study from Hackman and Oldham (1975) who tried to conduct the first measurement instrument for the design of work based on the intrinsic factors of work design. In 1975, they developed the Job Design Survey (from now on JDS) with the aim to create a standardized measurement instrument which makes it possible to observe the behaviour of people during job enrichment projects. The JDS offers employers the opportunity to observe how certain changes in the type of work will improve the job enrichment, and why other changes would not. As a result of the improvements, the employees should become more motivated resulting in a higher productivity (Hackman & Oldham, 1975). In addition, the survey evaluates possible effects that may occur due to job changes. The outcomes of the JDS are based on five constructs that together describe the overall motivating potential score of type of work. These five constructs are "*skill variety, task identity, task significance, autonomy, and feedback from the job itself"* (Hackman & Oldham, 1975, pp. 161-162) and presents the job satisfaction level of employees. The JDS with its intrinsic factors was used for several years to measure the level of perceived job satisfaction from employees.

In 1981, Posner attempted to add contextual factors to the JDS of Hackman and Oldham (1975). The purpose of Posner's study was to explore the congruence of the most important work characteristics during the recruitment process between three samples; recruiters, students, and faculty members. In addition to the motivational factors of the JDS, Posner added several other

work characteristics that were proposed to have an influence on the organisations attraction and job satisfaction. Examples of added work characteristics in his study are; (type of work :) *challenging and interesting work, opportunity to learn,* (work environment :) *location of work or company, salary, and job security.* As a result, the measurement instrument of Posner was considered to be a completer measurement instrument to discuss the current work design concept of an organisation. For that reason many researchers started to use the model of Posner (1981) instead of the JDS of Hackman and Oldham (1975).

By using the measurement instrument of Posner (1981) researchers have neglect the social work characteristics for a long time. In 2006, Morgeson and Humphrey constructed a new measurement instrument which included the social work characteristics of work design. The main reason for Morgeson and Humphrey to make this new measurement instrument was to create a measurement instrument that suited the contemporary work context. The measurement instrument that Morgeson and Humphrey eventually proposed is *the Work Design Questionnaire* (WDQ from now on). The WDQ is organised by the different work characteristics that are presented in the integrated framework of Morgeson and Campion (2003). Morgeson and Campion (2003) distinguished four higher order constructs in their integrated framework which are the following; "*task characteristics (5 constructs)", "Knowledge characteristics (5 constructs)", "Social characteristics (4 constructs)",* and "*the work context (4 constructs)"*. The higher order constructs are a result of 107 work characteristics from previous studies that are combined into homogeneous categories which fit the current work environment. The different homogenous categories (or constructs) are presented in Figure 3. One of the main reasons why Morgeson and Humphrey (2006) especially highlighted the social work characteristics again is a result of one of their hypothesis. The results indicated that social factors can increase the motivation of employees without increasing the costs and requirements for learning and development opportunities for example (Hoff, 2010; Morgeson & Humphrey, 2006). In other words, they proved that it is not necessary to invest a lot of money in order to increase the motivation of employees (Morgeson & Humphrey, 2006). As a result, the WDQ seems to be the most complete and appropriate measurement instrument for the design of the current work context. Figure 3 summarizes the measurement instruments with its constructs of the different researchers discussed in this paragraph.

A question that still needs to receive an answer is; *"which work characteristics will determine the attraction of an organisation according to highly qualified applicants?"* In the next paragraph this question will be answered by exploring and presenting and discussing the constructs that will be used in this study to indicate organisational attraction

Figure 3 : overview of the different work characteristics used to measure the concept of work design

	Hackman & Oldham (1975)	Posner (1981)	Morgeson and Humphrey (2006)
Type of work	Skill variety Task identity Task significance Autonomy Feedback from the job itself	Challenging and interesting work Opportunity to use abilities Opportunity to learn Opportunity to show superiors effective performance Variety of activities Opportunity for rapid advancement Freedom to do the job my own way Job title Opportunities for extensive travel	**Task characteristics** Autonomy Work scheduling Decision-making Work methods Task variety Task significance Task identity Feedback from the job **Knowledge characteristics** Job complexity Information processing Problem solving Skill variety Specialization
Work environment		Competent/social coworkers Type of work or service performed Salary Training programs Job security Reputation of company Location of work or company Fringe benefits Size of company	**Social characteristics** Social support Independence Initiated Received Interaction outside the organisation Feedback from others
			Work context Ergonomics Physical demands Work conditions Equipment use

2.2.3. The final measurement model and its constructs

In order to select work characteristics that will determine organisational attractiveness according to highly qualified applicants, it is important to explore recent theories. Hence, more recent studies were explored to indicate which work characteristics are most appropriate to use for this study (Uggerslev, Fassina, & Kraichy, 2012; Hoff, 2010; Broadbridge, Maxwell, & Ogden, 2009). After the exploration of these studies it became clear that the following work characteristics are most appropriate for the determination of organisational attractiveness of highly qualified applicants; *Challenge, Autonomy, Flexibility, Leadership, Reward and Recognition, Supportive work environment, and Learning and development opportunities.* A further exploration of existing theory indicates that these work characteristics indeed represent type of work and work environment (work design). This conclusion can be drawn upon the factor analysis of Powell & Goulet (1996), Harris & Fink (1987), and Powell, (1984). The factor analyses presents that the type of work concept is represented by the work characteristics challenge, autonomy, and flexibility, while the work environment is represented by leadership, reward and recognition, supportive work environment, and learning and development opportunities.

After selecting work characteristics for this study, it becomes important to find or create reliable measurement scales. Due to the fact that the development of a new measurement scale takes several phases and last several years (Hinkin, 1995) this study will make use of existing measurement scales. For this reason, this paragraph explores and discusses existing constructs and dimensions in order to select the measurement scales that will be used in this study[1].

Challenge – Many researchers focused their attention on the construct of challenging work as one of the main predictors of job and organisational attractiveness (Van Vianen, De Pater, & Preenen, 2008; Maineiro & Sullivan, 2006; Slaughter, Richard, & Martin, 2006; Amabile et al., 1996). Challenging work is related to organisational attractiveness because it motivates employees in doing their job. Actually, it offers the employee continuous opportunities to develop new knowledge while solving difficult problems (Van Vianen, De Pater, & Preenen, 2008; Maineiro & Sullivan, 2006). Recent studies indicate that it is hard to define the broad concept of challenging work (Preenen, van Vianen, de Pater, & Geerling, 2011). Therefore, challenging work will be clarified by using the kaleidoscope career model of Maineiro and Sullivan (2006). The model gives an adequate indication of the reasons why individuals are looking for challenge in their job. The first reason is that individuals are looking for opportunities for development and growth in their daily job. Second, individuals have a preference for challenging activities in their daily life and as a result of that, also in their job. The third reason explains that individuals appreciate the received confirmation from co-workers or managers when a challenging task is completed. The fourth reason indicates that people prefer to perform activities that have an impact on other people. The fifth and last reason in the kaleidoscope model explains that individuals seek a challenging job to become an expert in a particular task or job (Hoff, 2010; Maineiro & Sullivan, 2006). As a result, it can be concluded that there are five different motivational factors for people to seek a challenging job or organisation to work for. For this reason, a measurement scale have to be used which consists all five of the dimensions in order to indicate how important challenging work is in relation with the other constructs.

After exploring the theory for measurement scales, it became clear that two scales for measuring the construct of challenge need to be used. The first scale is the seven item "challenge" scale of Amabile et al. (1996). The scale seems to be the most appropriate for the purpose of this study because all of its items are formulated in a preference setting and overlap with four of the five aspects of challenging work. Examples of the overlapping items are: *"I enjoy trying to solve complex problems"* and *"I want my work to provide me with opportunities for increasing my knowledge and skills" (Amabile et al., 1994, p. 956)*. Furthermore, the study presents a sufficient alpha coefficient of $\alpha = 0.74$ and factor loadings ranging from 0.36 to 0.79. The second scale that will be used is the "task significance" scale of Morgeson and Humphrey (2006). The scale is used to because the impact of the work performed aspect of challenging work is not represented in the scale of Amabile et al. (1996) and therefore complements the five aspects that are discussed in the kaleidoscope model of Maineiro & Sullivan (2006). Because the scale of Morgeson and Humphrey (2006) has an evaluative nature, it will be reworded in a preference setting to make it useful for the purpose of this study. The task significance scale consists of four

[1] An complete overview of the different dimensions and their scales is presented in appendix A on page 61

items with factor loadings ranging from 0.425 to 0.964, and has an alpha coefficient of α = 0.84. An example of an item used in the task significance scale is: *"My (future) job should have a large impact on people outside the organisation"* (Morgeson & Humphrey, 2006, p. 1337).

Autonomy - Autonomy is one of the most studied work characteristics of type of work (Morgeson & Humphrey, 2006; Breaugh, 1999; Hackman & Oldham, 1976). According to Breaugh (1999), meta-analyses explain that autonomy is an important predictor of organisational aspects such as employee turnover, employee performance, and job satisfaction (Fried, 1991; Spector, 1986). Especially job satisfaction has a direct impact on organisational attractiveness through its relationship with organisational image. If people are satisfied, they will communicate more positively to the outside world which increases the employers' image. In early research autonomy was defined as: *"the discretion the worker is expected to exercise in carrying out the assigned task activities"* (Turner & Lawrence, 1965, p. 21). This definition is based on a more general context of autonomy, but is due to theoretical developments not adequate anymore (Breaugh, 1999). More recent studies have divided the construct of autonomy in three separate dimensions; *1. Work method autonomy, 2. Work scheduling autonomy*, and *3. Decision making autonomy* (Morgeson & Humphrey, 2006). First of all, work method autonomy refers to the individual decision-making freedom employees have in the procedures concerning how their work should be performed. Second, work scheduling autonomy refers to the freedom an employee has in scheduling and timing their work activities. Third and final, the decision making autonomy refers to the degree in which employees make decisions for themselves. Therefore, researchers redefined autonomy as; *"the extent to which a job allows freedom, independence, and discretion to schedule work, make decisions, and choose the methods used to perform tasks"* (Morgeson & Humphrey, 2006, p. 1323; Breaugh, 1985).

Due to the separation of the construct autonomy it is necessary to find three different measurement scales. The most recent autonomy scales are available in the WDQ from Morgeson and Humphrey (2006). Morgeson and Humphrey used the scales that were developed by Breaugh in 1985. Both of the studies indicate that the scales are reliable and present sufficient alpha coefficients which are above α = 0.85. As a result, the following three scales will be used in this study; *"the work scheduling autonomy"*, *"the decision-making autonomy"*, and *"the work methods autonomy"*. First of all, the work scheduling scale consists of three items and has an alpha coefficient of α = 0.85. An example of an item is; *"The job allows me to make my own decisions about how to schedule my work"*. Second, the decision making scale has an alpha coefficient of α = 0.85. An example of an item is; "*The job allows me to make a lot of decisions on my own"*. Third and final, the work methods scale also consists of three items and has an alpha coefficient of α = 0.88. An example of an item for the work method scale is; *"The job allows me to decide on my own how to go about doing my work"* (Morgeson & Humphrey, 2006, p. 1337; Breaugh, 1999, p. 373).

Flexibility – In the last several years the desire for a work-family life balance has become more and more important (Rau, 2003; Bretz, Boudreau, & Judge, 1994). One of the main causes for the growing importance of the work-family life balance can be subscribed to the increasing amount of women that participate in the labour market. For this reason, many employees seek for possibilities to optimize the balance between their personal needs (or family needs) and the organisational needs (Honeycutt & Rosen, 1997). Organisations can help their employees by

balancing their work-family life by offering flexible work options (Honeycutt & Rosen, 1997; Bretz et al., 1994). Flexible work options are defined as: *"alternative work options that allow work to be accomplished outside of the traditional temporal and/or spatial boundaries of a standard workday"* (Rau, 2003). Kossek and van Duyne (2008) presented several examples of flexible work options and eventually distinguished three main types of flexibility; 1. *Time flexibility*, *2. Timing flexibility*, and *3. Place flexibility*. First of all, time flexibility is concerned with the amount of hours that an employee works during a workweek. Second, timing flexibility is described as when the work will be performed. Third place flexibility is described as the place where the work will be performed.

For measuring the value of the three types of flexibility, a reworded version of the temporal and spatial flexibility scale of Swanberg and Simmons (2008) will be used. Swanberg and Simmons (2008) constructed a six item scale that indicates the accessibility of flexible work options. Hoff (2010) reworded this scale into a scale that measures the importance of temporal and spatial flexibility for the attractiveness of an organisation. However, the reworded six item scale showed an alpha coefficient of $\alpha = 0.68$ in the study of Hoff (2010), which is minimally accepted. In spite of that, this study will use the reworded six item scale of Hoff (2010). First of all because Hoff (2010) proved that after the removal of the second item the alpha coefficient increases to $\alpha = 0.70$ and second, by retesting the six item scale again it is possible to indicate if the results of Hoff (2010) hold over other samples. An example of an item from the temporal and spatial flexibility scale is; *"In my job I want the opportunity to occasionally work from home"* (Swanberg & Simmons, 2008).

Leadership - The leadership construct refers to the style of management implemented in an organisation which supports employees in their daily work environment. The supportive work environment can be described as: *"the perceptions of an employee that co-workers are highly involved in their work and that supervisor's support and facilitate employees' work efforts"* (Babin & Boles, 1996, p. 58; Moos, 1981). The definition indicates that the supervisors' style of management influences the commitment and efforts of employees. Research indicates that there are two different supervisors' styles of management which are; *"transactional leadership"* and *"transformational leadership"* (De Hoogh, Den Hartog, & Koopman, 2004; Bass & Avolio, 1995; Bass, 1985). First of all, transactional leadership refers to the active approach of managers in order to perform the results that an organisation wants to achieve. The role of managers is to clarify the organisational performance goals to its employees and to reach these same goals by actively controlling their progress by punishment and rewards. Honesty and trustworthiness of managers are crucial in transactional leadership (Bass & Avolio, 1995). The second leadership style is the transformational leadership style. In comparison with transactional leadership, transformational leadership refers to the additional meaning of work. The transformational leadership style needs to increase the willingness of employees to reach the preferred organisational performance (Bass, 1985). In spite of the fact that the focus of research shifts from transactional leadership to transformational leadership in the last twenty years (De Hoogh, Den Hartog, & Koopman, 2004), the aim of this study is to value the importance of both management styles for the attractiveness of an organisation.

A measurement model used by many researchers to value the importance of both leadership styles is the Multifactor Leadership Questionnaire (MLQ) from Bass and Avolio (1995). The

MLQ consists of 36 items. De Hoogh et al. (2004) attempted to reduce the number of items in order to construct a measurement scale with a smaller number of items. As a result, their study presents a new measurement instrument (CLIO scale) of 17 items that can be divided over both transformational leadership (11 items) and transactional leadership (6 items). Both scales will be used in this study to represent the leadership styles. The transformational measurement scale has an Alpha coefficient of $\alpha = 0.80$. An example of an item that was used to measure transformational leadership is *"Encourages subordinates to be independent thinkers"*. In addition, the scale of transactional measurement shows an Alpha coefficient ranging between $\alpha = 0.69$ and $\alpha = 0.83$ for different samples in the study of De Hoogh et al. (2004). An example of an item used to measure transactional leadership is *"Ensures that agreements are being kept"*.

Reward and recognition - Broadbridge et al. (2009) explain in their study that graduated students are seeking for reward and recognition in their work. Likewise, Martin (2005) indicates that this same population is looking for feedback on their performance. The dimension of praise and recognition and feedback seeking behaviour therefore seem to be important for the attraction of applicants. Trank et al. (2002) confirm this by explaining why these dimensions are so important. According to Trank et al. (2002) high achievers prefer individual based salary, which clarifies the desire for feedback and praise and recognition in their job. For this reason, Trank et al. (2002) explained that there are four important dimensions for the construct of reward and recognition and made a distinction between monetary and non-monetary rewards. First of all, the pay preference dimension is explained and discussed. The pay preference scale should indicate if high achievers really prefer individual performance based pay. The pay preference scale is an example of how monetary rewards should be distributed by the organisation. Monetary rewards can be described as compensation in the form of money (Rynes S. , 1991). The counterparts of monetary rewards are non-monetary rewards and are described as all forms of compensation that are not monetary. Taking in consideration the study of Trank et al. (2002) this means that the dimensions of praise and recognition, promotion opportunities, and feedback from the job are non-monetary rewards.

For measuring the dimensions of pay preferences, praise and recognition, and promotion opportunities the scales of Trank et al. (2002) will be extracted. First of all, the scale for pay preferences consists of seven items and has an alpha coefficient of $\alpha = 0.71$. An example of an item used in the pay preference scale is *"some of my pay to be based on my teamwork and cooperation"*. Second, the scale for praise and recognition consists of 4 items and has an alpha coefficient of $\alpha = 0.72$. An example of an item used is *"supervisors that appreciate the work I do"*. Third, the original for promotion opportunities consisted of four items and was enlarged with three additional items that should increase the amount of information that can be extracted from the scale (Hoff, 2010). In this study, the seven item scale of Hoff (2010) will be used which showed an alpha coefficient of $\alpha = 0.81$. An example of an item of the promotion opportunity scale is *"I want a job where there are lots of opportunities for upward mobility"*. The study of Trank et al. (2002) did not present a scale for the dimension of feedback seeking behaviour and therefore a further exploration of theory was necessary. As a result, an edited scale from Roberson, Deitch, Brief, and Block (2003) will be used to measure feedback seeking behaviour. The scale presents four items and an alpha coefficient of $\alpha = 0.80$. An example of an item is "... *to directly ask my manager for information concerning my performance"*.

Supportive work environment - Broadbridge et al. (2009) indicate that students who are recently graduated will look for a supportive work environment which operates sustainable and social responsible. As is described in the paragraph for the leadership construct the supportive work environment can be described as followed; "*the perceptions of an employee that co-workers are highly involved in their work and that supervisor's support and facilitate employees' work efforts"* (Moos, 1981; Babin & Boles, 1996, p. 58). In this study the role of managers in a supportive work environment is already explained, but not the other supportive aspects which an organisation can offer. In this study three dimensions will be used that represent the supportive work environment, which are; social support, social responsibility, and innovation orientation. According to Babin and Boles (1996), the supportiveness of co-workers can contribute to organisational attractiveness by lowering the amount of stress of employees and by increasing job satisfaction. Examples of social support aspects that employees prefer in their direct work environment are *friendship, social support, and the opportunity to deal with other people within a daily job* (Morgeson & Campion, 2003). Second, it is indicated by Broadbridge et al. (2009) that youngsters prefer organisations which operate social responsible. Social responsibility can be defined as; *"an organisational concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with stakeholders on a voluntary basis"* (Dahlsrud, 2006, p. 7). The third supportive work environment dimension is innovation orientation. The dimension is added because an innovative culture will motive employees to look further than their daily tasks and gives them the feeling that they can contribute to the organisational performance (Hoff, 2010; Detert, Schroeder, & Mauriel, 2000).

For each of the discussed dimensions it will be necessary to find a measurement scale in existing theory. First of all, social support will be measured by a reworded version of the social support scale extracted from the study of Morgeson and Humphrey (2006). Morgeson and Humphrey (2006) created a scale for social support by using items from existing studies such as Karasek, Brisson, and Kawakami (1998) and Sims, Szilgyi, and Keller (1976). Examples of items extracted from these studies are: *"I have the opportunity to develop close friendships in my job"* (Sims et al., 1976) and *"My supervisor is concerned about the welfare of the people that work for him/her"* (Karasek et al., 1998). The alpha coefficient of this six items scale is $\alpha = 0.82$. For measuring the importance of social responsibility a reworded scale of the organisational culture profile scale will be used from O'Reilly (1999) (Sarros, Gray, Densten, & Cooper, 2005). The scale consists of four items and has an alpha coefficient of $\alpha = 0.74$. An example of an item is; *"I prefer an organisation that is being reflective"*. Third and final, the scale that will be used to indicate the value of innovation orientation in the attractiveness of an organisation will be extracted from the study of Detert, Schroeder, and Mauriel (2000). The scale consists of three items and has an alpha coefficient of $\alpha = 0.71$. An example of an item is; *"In my job I want to be encouraged to make all kinds of proposals for change"*.

Learning and development opportunities – Learning and development opportunities are proven to be important predictors of organisation attractiveness in the study of Trank et al., (2002). According to Hoff (2010) youngsters are ambitious and will therefore search for an employer that helps them by achieving their personal development goals. In this study learning and development opportunities are described as the possibilities for employees to participate in training or study programs offered by the organisation (Tones & Pillay, 2008; Trank, Rynes, & Bretz, 2002). As a result, the employees are able to meet their personal targets by broadening

their knowledge which eventually might result in opportunities for advancement (Trank et al., 2002). In 2008, Tones & Pillay attempted to create a measurement instrument for learning and development opportunities. Six different constructs were found that all contributed to the learning and development opportunities an organisation offers; *"organisational opportunities: 1. learning climate, 2. organisational constraints, 3. individual goal engagement, 4. individual goal selection, organisational opportunities: 5. work tasks, and 6. individual goal disengagement"* (Tones & Pillay, 2008, p. 85). The purpose of their study was to reduce the number items that were necessary to indicate the learning and development opportunities. By using a factor analysis, an internal consistency analysis, and an item reliability analysis 34 items were deleted which resulted in a measurement instrument of 28 items.

In this study only the learning and development opportunities are taken into consideration which are presented in the organisations learning climate. Additionally, all the other scales are age specific while the organisations learning climate is not (Hoff, 2010). The organisational opportunity of learning climate consists of four different items and has an alpha coefficient of $\alpha = 0.88$ (Tones & Pillay, 2008). An example of an item is *"my workplace helps me in order to decide which skills to improve"* (Tones & Pillay, 2008).

2.2.4. Conclusions and research model

The aim of paragraph 2.2 is to give an answer to the following research question; *"What is work design and how can it be adequately measured?"* In order to get applicants to view the organisation as a positive place to work the potential applicants need to view the work characteristics of type of work and work characteristics as the envisioned benefits. In this study, type of work is defined as "*the aspects that are directly related to the job activity"*, while the work environment is defined as *"the day-to-day social and physical environment in which you currently do most or all of your work"*. A further exploration of the theory indicates that type of work and work environment are somewhat attached to each other and therefore will be combined in this study under the name of "work design". The work design concept will in this study be operationalised by the following seven main predictors of type of work and the work environment that determine organisational attractiveness; *"(type of work;) challenge, autonomy, flexibility, (work environment;) leadership, reward and recognition, supportive work environment, and learning and development opportunities"*. Each construct is subdivided in different dimensions that are given in the constructs/dimensions part of the research model presented in Figure 4. Together these dimensions will form the basis of the questionnaire that will be used to find the most attractive type of work and work environment characteristics according to technical master students, engineers, and the support department employees as are in paragraph 2.2.3.

Based on the discussed theory in chapter two the main research question can now be specified;

"What are the most attractive type of work and work environment characteristics for technical master students and Company X engineers, and to what extend do they differ for these two groups?"

Figure 4: Final research model

Constructs/Dimensions

Type of work	
Challenge	Challenge
	Task Significance
Autonomy	Work Scheduling Autonomy
	Decision Making Autonomy
	Work Method Autonomy
Flexibility	Temporal and Spatial Flexibilty

Work environment	
Leadership style	Transformational Leadership
	Transactional Leadership
Reward and Recognition	Promotion Opportunities
	Feedback Seeking Behavior
	Praise and Recognition
Supportive work environment	Innovation Orientation
	Social Support
	Social Responsibility
Learning and Development Opportunities	Learning and Development

Most valuable work characteristics of:

Students

Engineers

Support Department Employees

3. Methodology

In every research the methodology plays a crucial role. Therefore the question that will receive an answer in this paragraph is; "What are the methodologies that have to be used in order to give an answer to the central research question?" To generate an answer the methodological aspects of the samples, the questionnaire, and the reliability are discussed.

3.1. Research design

The procedure that is used to eventually present an answer to the main research question exists of three different phases. The aim of this study is to explore (explorative nature) the most attractive work characteristics according to the populations (see paragraph 3.2) that are present in this study (cross-sectional). For exploring the most attractive work characteristics according to the populations it is necessary to conduct a literature review. The literature review is the first phase of this study and should indicate what organisational attractiveness is and what its main predictors are. For the exploration of existing theories several search engines were used such as www.scholar.google.nl, www.scopus.com, and www.webofknowledge.com. The terms that are used to find more information at these websites are "organisational attractiveness", "applicant attraction", "works preferences", "type of work", "work environment" and "job and organisational characteristics". As a result, several journal articles and books were found that contained useful information in relation with organisational attractiveness. Moreover, the explored information introduces the second phase of the research design; the questionnaire.

The questionnaire consisted of open- and closed-ended questions and was send to technical students, engineers and support department employees in June 2012. The purpose of the questionnaire was to indicate how important each individual work characteristics was for the organisational attractiveness. Eventually two different questionnaires were used to receive information from the populations that are represented in this study. More detailed information about the separated versions will be given in paragraph 3.3 after presenting the samples that participated in this study. Because the questionnaire has a general nature and does not evaluate the current work characteristics of CX it is necessary to add a third phase to the research design.

The third phase consists of a brainstorm session. The brainstorm session was used to generate insights in how the different scientific results could be translated to practical recommendations for Company X. The participants of the brainstorm session were managers, works council members, engineers, and recruiters and the session was organised on the fifth of October 2012.

The information that was generated as a result of the questionnaire and the brainstorm session resulted in scientific conclusions and practical recommendations that are presented in chapter 5. Before analysing the results generated from the questionnaire, this chapter will first present the different samples of this study, the different questionnaires that are used, and the exploratory factor analysis conducted in order to increase the reliability of the results generated from the questionnaire.

3.2. The samples

This study distinguishes three different samples; *students, engineers and the support department employees* (from now on SDE). The population of Company X (the organisation for which I am writing this research report) consist for at least 70% of engineers and therefore the main focus of this study will be on the students and engineers samples. The similarity between these two samples is that they consist of people who followed a technical study. On the other hand, the difference between the two samples is that the engineering population have work experience, while students have no work experience or a lower extent of work experience. Increasing the organisational attractiveness of CX can be realized by indicating the most valuable job and organisational characteristics for type of work and the work environment according to these samples. The main purpose is therefore to indicate what these most valuable characteristics are and to explore differences in preferences between engineers and students. Importantly here, is that the samples will value the characteristics in a general nature and not directly related to their current job. The sample of SDE is added in this study to explore differences between them and the engineers. If the results present many differences, this might lead to a decreasing amount of possibilities to increase the organisational attractiveness. As a matter of fact, if CX implements the preferred work characteristics according to the engineers, this might decrease the organisational attractiveness for the SDE.

3.2.1. Students

The students are selected non-randomly because they were selected by the following criteria; *study, university, and the students had to be in their final year of college*. First of all, the students had to participate one of the following bachelor or master studies; *Electrical Engineering, Mechanical Engineering,* or *Applied Physics* at the technical universities of *Eindhoven, Delft,* and *Twente*. During the visits at the universities several lectures were attended to collect respondents. Visits were also brought to the study associations of these studies and universities to explore opportunities for extra data collection. During the visits five of the nine study associations were willing to help me by collecting new respondents. This was done by a mailing which was send to students that are a member for five or more years. The E-mail consisted of a short introduction which explains the main purpose of my study and presents a link to the questionnaire in Survey Monkey (an online web based questionnaire program). As a result, 136 usable questionnaires were collected. The respondents can be divided on gender, age, and university. First of all, of the student respondents 80.1% was male, and 19.9% female. The student sample consists for 50.7% of students from the University of Twente, 26.5% of students from the University of Eindhoven, and 22.8% are students from the University of the Delft. The average age of the students sample is 24.

3.2.2. Engineers

The population of engineers within CX consists of 156 engineers who can be divided over the following departments; *Control Products, Design Engineering, Product Engineering, and Quality Engineering*. For collecting sufficient questionnaires the engineering population of CX were invited to fill in the questionnaire via Survey Monkey. After sending two reminders by email, the total number of respondents that filled in a complete questionnaire was 86. As a result the response rate of engineers is 57 %. The other demographic characteristics depict that only

one female engineer (1.6%) participated by filling in a complete questionnaire, while the other 85 (98.4%) are male respondents. The average age of the engineers is 45 and overall they have an average work experience at CX of 13.2 years.

3.2.3. Support department employees

The SDE population consists of 79 employees that can be divided over departments such as; *HR-department, Finance, Customer planning, or Marketing and Sales*. Similar to the population of engineers, the SDE were invited to fill in the questionnaire via Survey Monkey. As a result, 63 questionnaires were collected of which 60 were complete. The response rate of the SDE is therefore 76 %. The SDE sample is represented by 45 (75 %) male respondents and 15 (25 %) female respondents with an average age of 41. The average age of work experience at CX is 12.6 years.

3.2.4. The total sample

The overall sample population of this study consists of 282 respondents divided over the samples of *students, engineers*, and *SDE*. The students sample represents 48.2% of the total sample, the engineers 30.5%, and the SDE 21.3%. Of these respondents, 84.8% is male and 15.2% is female as is presented in Table 1.

Table 1: the sample demographics

		Samples:			
		Students	**Engineers**	**Support Department**	**Total**
Respondents:	**Male**	109 (80.1%)	85 (98.8%)	45 (75%)	239 (84.8%)
	Female	27 (19.9%)	1 (1.2%)	15 (25%)	43 (15.2%)
	Total	136 (48.2%)	86 (30.5%)	60 (21.3%)	282 (100%)

3.3. The questionnaire

The questionnaire that is used in this study can be divided in two versions. The first version was for the students in which they had to rate how important work characteristics are for the attractiveness of an organisation. The questions therefore asked how important certain aspects were in their future job. Additional questions were used to indicate which benefits are important to the students. The second version of the questionnaire was for the employees of CX in which the employees had to rate the same work characteristics as students. However, the employees had to rate these characteristics in a general sense and not in relation with their current job position. In other words, the questionnaire was not used as an evaluative questionnaire for CX, but as a questionnaire that indicates the most valuable job and organisational characteristics in their most preferred manner. Likewise the first version of the questionnaire, the employees of CX were asked to fill in their most preferred benefits. As a result of the separation of the questionnaires it became possible to ask some additional questions for the different samples. These differences can be found in the following three elements; the number of items/measurement scales used, the

demographic questions, and some addition questions for the employees for CX that were not asked to the students. The students' questionnaire consists of 16 different measurement scales and 81 items and the questionnaire for employees consists of 15 measurement scales and 75 items. In the questionnaire for the students the dimension of pay preferences is added to confirm the theory of Chapman et al., (2005) which states that pay is not important in comparison with the other characteristics. However, CX does not want to start a discussion of the current pay system and therefore the dimension is not added in their questionnaire. The other dimensions of the questionnaires are similar and needs to be rated by the populations on a 5-point Likert Scale. The Likert Scale ranges from 1 strongly disagree, to 3 neutral, and 5 strongly agree. The second distinction can be found in the additional demographic questions. The students are asked for their age, gender, and university of education, while the employees are asked for their age, gender, and department. The third and last distinction can be found in the additional (evaluative) questions that are added by request of CX and concern trending topics for the internal population such as a possible relocation, the current flex time arrangements, and opportunities to work at home.

3.4. The exploratory factor analysis

A factor analysis is conducted in order to measure if the scales extracted from the theory are interpreted in a similar way by the samples of this study. To conduct a factor analysis it is necessary to meet some criteria. The sample has to consist of at least 150 respondents to get precise answers (Hinkin, 1995) and therefore the sample of this study is sufficient (N=282). The Kaiser-Meyer-Olkin measure presents the same result and concluded that the samples are large enough to conduct a factor analysis. The outcomes of the Bartlett's Sphericity test show that the between item correlations are sufficient to conduct a factor analysis. The results of the Bartlett's Sphericity test are confirmed by the determinant of the correlation matrix (see appendix A on page 61). The only criterion that was not met for were the average communalities. The average communalities varied between the 0.42 and the 0.72 and therefore did not reach the required minimum level of 0.60 for a sample that exceeds the 250 respondents (Field, 2009). As a result, some components will have to be extracted by using a scree plot and therefore the results need to be interpreted with caution. The approach that is used for the factor analysis is as follow; First of all, factor analysis were conducted for each concept (type of work and work environment, followed by a factor analysis per construct, and eventually a factor analysis was conducted for each single scale. The factor analysis were first of all generated for the total sample of this study, followed by a factor analysis for each single sample were necessary to clarify (possible) remarkable outcomes. Only the constructs or scales that showed remarkable outcomes will be discussed in more detail. The next two subparagraphs present the outcomes of the factor analysis for each work characteristic.

3.4.1. Type of work

The type of work concept consists of three different constructs that are; *Challenge*, *Autonomy, and Flexibility*[2].

[2] The results of the conducted factor analysis and the correlations are presented in Appendix A on page 61

Challenge – The construct consists of two dimensions, which are; *challenge and task significance*. The correlation between the dimensions is $r = 0.22$ and will therefore have a positive but rather low effect on each other. The outcomes of the factor analysis show that both dimensions are extracted on a different component. The task significance scale loads on the first component with factor loadings between 0.79 - 0.86 and has a Cronbachs' alpha of $\alpha = 0.87$. All the items of the challenge scale load on the second component except the sixth item;"*In my job I want work I know I can do well over work that stretches my abilities".* The sixth item will therefore be deleted from the scale for further analysis. A possible reason for the fact that this item does not load can be that the samples interpret the item as work pressure and does not relate this with challenging work. As a result, the challenge scale will consist of six items instead of seven with factor loadings ranging from 0.46 till 0.77. The reliability of the scale slightly increases from $\alpha = 0.66$ to $\alpha = 0.68$. In this study, the construct of Challenge will be represented by the dimensions of task significance (4 items), and Challenge (6 items). Taken in sum the means of both dimensions the overall score for the challenge construct is (mean) 3.72 with a standard deviation of 0.45.

Autonomy – The Autonomy constructs consists of three different dimensions which are the following; *Work Scheduling Autonomy, Decision Making Autonomy, and Work Method Autonomy*. Each individual dimension has a positive correlation with the other dimensions of type of work (see Appendix A). The correlation matrix of the autonomy constructs depicts strong correlations between the different dimensions. Especially the decision making autonomy and work method autonomy scale have a high correlation ($r = 0.52$) with each other (see page 63). Moreover, the results of the conducted factor analysis indicate that there are only two dimensions extracted instead of the three dimensions that are extracted from theory. The results combine the work method and decision making autonomy scales under one component and work scheduling autonomy on the other component. The combination of the work method and decision making autonomy scales are a result of the high correlation between the dimensions and can be a result of respondents who could make a distinction between the two dimensions. In this study, the dimensions of work method autonomy and decision making autonomy will be combined under the name of decision making autonomy with factor loadings ranging between 0.60 and 0.76. The reliability of the scale increased by combining the dimensions to $\alpha = 0.79$. The work scheduling autonomy dimension remains the same and has factor loadings ranging from 0.80 till 0.84 and a Cronbachs Alpha of $\alpha = 0.81$. The overall score for the autonomy construct is (mean) 3.97 and the standard deviation is 0.47.

Flexibility – The construct of flexibility consists of one dimension; *the temporal and spatial flexibility dimension* and presents positive correlations with the other constructs within the type of work concept. The factor analysis extracted only one component in which the second item; "*The opportunity to take days off for a sick child without losing pay or vacation time"* did not load. An additional factor analysis depicts that the item does load for respondents who have children (37.2%), while it does not load for respondents without children (72.8%). This second group of respondents (without children) is a larger and therefore explains why the item does not load on the factor analysis for the total sample of this study. A second explanation could be that the collective labour agreements force Dutch employers already pays at least 70% of the employee's salary for short term leaves to take care for a sick child or other family members. As a result, the second item will be deleted from the original scale for further analysis in this study.

The dimension of temporal and spatial flexibility will therefore consist of five items with factor loadings ranging between 0.58 and 0.79. Another result is the increasing Cronbachs Alpha. The Cronbachs Alpha increased from $\alpha = 0.70$ to $\alpha = 0.73$. The overall score for the flexibility construct presents a mean of 3.82 and a stand deviation of 0.57. In spite of the higher Cronbachs Alpha, the results of the study of Hoff (2010) are confirmed by deleting the second item as is explained in paragraph 2.2.3.

3.4.2. Work Environment

The work environment concept consists of four different constructs, which are the following; *Leadership, Reward and Recognition, Supportive Work Environment, and Learning and Development opportunities*

Leadership – The leadership construct consists of two different dimensions; *Transactional leadership and Transformational leadership*. The correlation between these two dimensions is $r = 0.53$ and can be considered as strong. The results the conducted factor analysis shows four different component extractions which all have an insufficient Cronbachs Alpha if they are used for further analyses. Therefore an additional (forced) factor analysis was conducted that had to extract two components. The outcome of the factor analysis distinguished the two dimensions of leadership as extracted from the theory. The transformational leadership scale showed some problems because the seventh item; *"... involves subordinates in decisions that affect their work"* did not load on the component that was extracted for transformational leadership. Therefore, a third factor analysis was conducted for the dimension of transformational leadership that showed that the seventh item did load on the component that was extracted. For this reason, this study will stick to theory and keep the seventh item for further analysis. The transformational leadership scale has factor loadings ranging from 0.48 till 0.67 and a Cronbachs Alpha of $\alpha = 0.79$. In addition, the transactional leadership scale remains the same and consists of six item scale with factor loadings ranging between 0.46 till 0.73 and a Cronbachs Alpha of $\alpha = 0.78$. The overall score for the leadership construct is therefore (mean) 4.21 with a standard deviation of 0.36.

Reward and Recognition – The reward and recognition constructs consists of three different dimensions which are; *promotion opportunities, praise and recognition, and feedback seeking behaviour.* The correlations between the dimensions indicate that the dimension of promotion opportunities has a lower correlation with the other dimensions than the correlation between praise and recognition and feedback seeking behaviour (see appendix A on page 62). In spite of that, the correlations are positive within the construct and will therefore have a positive influence on each other (see page 66). The conducted factor analysis extracted three different components similar to the theory presented in paragraph 2.2.3.

First of all the promotion opportunities dimensions was extracted and has factor loadings ranging from 0.49 till 0.74, with a Cronbachs Alpha of $\alpha = 0.77$. A secondary factor analysis indicated that the samples interpreted the scale differently. The items *"... I will be disappointed if I haven't had a promotion within a year of leaving college"* and *"... I will be disappointed if I haven't had a promotion within a year of leaving college"* loaded on a different component in comparison with students. Moreover, the factor analysis indicates that there are two different components in

the promotion opportunities scale. The first is related to fast promotion opportunities, while the other is related to general promotion opportunities. However, the reliability coefficient of both dimensions is not sufficient for further analysis. Therefore, a forced factor analysis was conducted for the scale which presents that the items loaded on one component for the total sample.

Second, the dimension of praise and recognition needs some extra attention. The component that is extracted for the praise and recognition dimension shows three factor loadings. The item that did not load on the scale is; *"... managers who often use praise as a substitute for paying people what they're really worth".* By deleting this item the reliability of the scale increased from $\alpha = 0.08$ to $\alpha = 0.29$. However, the reliability analysis proves that by deleting the third item; *"rather have money than praise for a job well done"* increased the reliability even further too $\alpha = 0.54$. Similar results are given while performing a factor analysis for the dimension of praise and recognition, The results present two factor loadings in which the first and second item are distinguished from the third and fourth as is presented on page 66. A possible reason for the distinction is that the third and fourth items are comparing praise and recognition with substitutes that might have lead to misunderstandings for the respondents. The third and fourth items are therefore deleted for the further analysis in this study which results in a two-item scale with factor loadings of 0.84 and 0.81. The Cronbachs Alpha is $\alpha = 0.54$ and remains insufficient. For this reason, the results of the scale need to be interpreted with caution.

Third, the dimension of feedback seeking behaviour was extracted in one component with strong factor loadings ranging between 0.752 till 0.802. The scale for feedback seeking behaviour has a Cronbachs Alpha of $\alpha = 0.80$ and could not be further improved by the deletion of items. The means of these three dimensions together result in an overall score of (mean) 3.68 with a standard deviation of 0.37.

The previous paragraph about reward and recognition did not discuss the pay preference dimension. The reason for not discussing the pay preferences dimension is that the pay preferences are only measured in the questionnaire for the students and can therefore not be compared with the other samples. Although, the dimension has a positive correlation with all of the other dimensions used in this study it will only be used to indicate how important pay is in addition to the other dimensions. Therefore, pay preferences are not taken into account for the overall score of the reward and recognition construct. The scale of pay preferences has a Cronbachs Alpha of $\alpha = 0.72$, a mean of 3.30 and a standard deviation of 0.54.

Supportive Work Environment – The supportive work environment construct consists of three different dimensions extracted from existing theory; *innovation orientation, social support, and social responsibility*. The correlations between the dimensions are positive and the factor analysis extracted all three dimensions on different components. First of all, the factor loadings for the innovation orientation dimensions ranged between 0.72 and 0.82 and the Cronbachs Alpha for the scale is $\alpha = 0.73$. Second, the social support dimension presents factor loadings 0.51 and 0.85 with a Cronbachs Alpha of $\alpha = 0.74$. Third, the social responsibility shows factor loadings ranging between 0.52 and 0.72. However, the Cronbachs Alpha is insufficient $\alpha = 0.58$ and the reliability analysis presents that it is not possible to increase the Alpha by the deletion of an item. For this reason, the results of the social responsibility dimension have to be interpreted

carefully. The overall score of the supportive work environment is (mean) 3.90 with a standard deviation of 0.35.

Learning and Development Opportunities – The learning and development opportunities construct consists of only one dimension; *Learning and Development* and positively correlates with the other dimensions of the work environment. The conducted factor analysis extracts only one component with high factor loadings ranging from 0.66 till 0.86. The Cronbachs Alpha of the scale is $\alpha = 0.80$ and the overall score of the dimension is (mean) 3.98, with a standard deviation of 0.52.

3.4.3. Conclusions

Several conclusions can be drawn upon results of the factor analysis. First of all, all of the constructs are positively correlated with each other with exception of the promotion opportunities dimensions. Second, the number of dimensions will be reduced from fifteen to fourteen by combining the work method autonomy dimension with the decision scheduling dimension. Third, the number of items is reduced from 81 to 77 by deleting items from the challenge, temporal and spatial flexibility, and praise and recognition scales. Fourth, the promotion opportunity scale is not interpreted in a similar way by the different samples. The engineers and SDE interpreted the scale in another way than the students. Although this study will stick to the theory, the results will have to be analysed with caution. Fifth and final, most of the scales proved to have a sufficient Cronbachs Alpha (above $\alpha = 0.70$). The scales that did not meet this minimum level are social responsibility, praise and recognition, and challenge. Taken into account the criteria of DeVellis (2003) the conclusions can be drawn that the social responsibility and praise and recognition scale showed undesired Alphas and therefore the results of the scales should be interpreted carefully. Hence, the challenge scale can be minimally accepted according to DeVellis (2003). As a result of the factor analysis, Table 2 presents an overview of the constructs and their dimensions with the overall scores for each construct or dimension as is discussed in this chapter.

Table 2: Outcomes exploratory factor analysis

	Constructs	Mean	SD	Dimensions	Reliability (α)	Items	Mean	SD
Type of Work	Challenge	3.72	0.45	Challenge	0.68	6	3.97	0.46
				Task Significance	0.87	4	3.47	0.67
	Autonomy	3.97	0.47	Work Scheduling Autonomy	0.81	3	4.03	0.60
				Decision Making Autonomy	0.79	6	3.91	0.47
	Flexibility	3.82	0.57	Temporal and Spatial Flexibility	0.73	5	3.82	0.57
Work environment	Leadership	4.21	0.36	Transformational Leadership	0.79	11	4.08	0.38
				Transactional Leadership	0.78	6	4.33	0.44
	Reward and Recognition	3.68	0.37	Promotion Opportunities	0.77	7	3.16	0.58
				Feedback Seeking Behaviour	0.80	4	3.69	0.59
				Praise and Recognition[1]	0.54	2	4.18	0.52
	Supportive Work Environment	3.90	0.35	Innovation Orientation	0.73	3	3.79	0.57
				Social Support	0.74	6	3.93	0.45
				Social Responsibility[1]	0.58	4	3.97	0.46
	Learning and Development	3.98	0.52	Learning and Development	0.80	4	3.98	0.52

[1] Mean should be interpreted with caution due to the low Cronbachs Alpha of the dimension

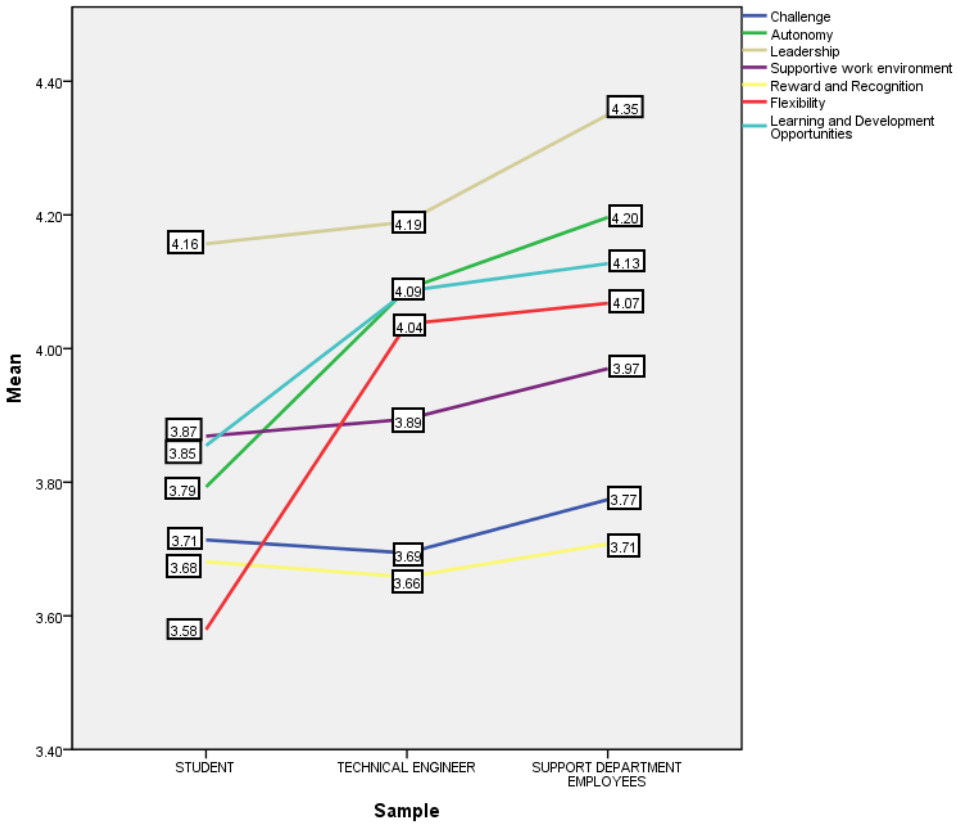
4. Results

This chapter presents the outcomes that are generated from the data that is collected by the questionnaire. It starts with discussing the differences between the samples, than it shows the most preferred benefits, and finally the outcomes of the additional questions are discussed.

4.1. Exploring differences

For exploring the most valuable job and organisational characteristics for the attraction of potential applicants it is essential for CX to indicate if there are differences in the preferences of their target populations (students, engineers, and SDE). This paragraph will discuss the generated results from the questionnaire per construct. While discussing the results the focus will be on the similarities or significant differences between the main target population of CX; students and engineers. An additional paragraph is added to discuss the significant differences between the SDE and engineers of CX. The tests conducted to indicate a possible difference between the students of the different universities proved that there are no differences in preferences between them (See Table 4 in appendix B on page 70). Figure 5 presents an overview of the most valuable job and organisational characteristics according to the students, engineers and SDE[3].

Figure 5: The rankings of the different constructs



[3] A more detailed overview with the rankings of the dimensions is presented in Appendix B on page 70

4.1.1. Type of work

The first differences that will be discussed are the differences within the concept of type of work. Figure 5 indicates that the challenge, autonomy, and flexibility constructs are not ranked on the same positions by both samples. Several T-tests are therefore conducted to explore if these differences in rankings also resulted in significant differences in the valuation of the constructs.

Challenge – The results of the t-tests present that there are no significant difference for the challenge construct between students and engineers (P = 0.756). Students and engineers value challenge therefore equally important for organisational attractiveness. It can only be indicated that in comparison with the other constructs, students rate challenge more important for organisational attractiveness than engineers. This indication is based on the position of the challenge construct within the ranking per population as Figure 5 presents. A closer look at the dimensions presents that the challenge dimension is ranked higher in comparison with the task significance dimension by both students and engineers. It therefore seems that students and engineers attach less importance to the impact their job has on the outside world (M = 3.51; M = 3.40), but they value *"opportunities for increasing the knowledge of employees"* (M = 4.44; M = 4.34) and *"trying to solve complex problems"* (M = 3.98; 4.11) as more important.

Autonomy – The results for the autonomy constructs indicate that there is a significant difference in valued importance between students (M = 3.79) and engineers (M = 4.09) (P < 0.01). **Fout! Verwijzingsbron niet gevonden.** presents that students placed autonomy on the fourth place of most valuable construct, while the engineers placed it second. The results of the conducted t-tests for the dimensions indicate that both work scheduling autonomy (P < 0.01) and decision making autonomy (P < 0.01) differed significantly between students and engineers. The engineers scored on both constructs significantly higher, which means that autonomy is more important for organisational attractiveness according to engineers than for students. A possible reason that might explain this difference is that the engineers have work experience, while the students have not. The work experience of engineers gives them the advantage that they know what kind of impact autonomy has on their daily jobs. This same reason might explain why the mean of the students for work scheduling autonomy (M = 3.80) and decision making autonomy (M = 2.78) is almost the same, where engineers especially prefer work scheduling autonomy (M = 4.22) (See Table 6 in Appendix B on page 71).

Flexibility – A significant difference is found for the flexibility construct. The construct is represented by one dimension which presented a significant difference (P < 0.01). The students placed flexibility on the seventh place (M = 3.58) of most important predictors for organisational attractiveness, while engineers placed it on the fourth place (M = 4.04). The items of the temporal and spatial flexibility scale indicates that engineers value *"the opportunity to choose their own start and end times" (M = 4.27), "the opportunity to change my daily schedule" (M = 4.14),* and *"the opportunity to occasionally work from home" (M = 4.00)* as important flexibility aspects of an organisation. Although students rated flexibility as less important, their preferences go to *"the opportunity to change my daily schedule" (M = 3.76), "the opportunity to decide when to take brakes" (M = 3.75),* and *"the opportunity to occasionally work from home" (M = 3.54).* That these results are important is confirmed in paragraph 4.2.

4.1.2. Work environment

The differences in level of preferences for the work environment constructs are found in the constructs of the supportive work environment and reward and recognition. The other constructs showed similar rankings for the constructs of leadership (first place) and learning and development (third place).

Leadership – The ranking presents that leadership is the most important work characteristic for organisational attractiveness. Both students (M = 4.16) and engineers (M = 4.19) rated leadership as the most important construct for organisational attractiveness and the results proved that there are no significant differences (P ≈ 0.50). A closer look at the dimensions of leadership indicates that both samples gave a higher importance to the transactional leadership dimension (See Table 6 in Appendix C on page 71). However, no significant differences are found between the samples for both dimensions. Transactional leadership is rated as most important for organisational attractiveness, while transformational leadership is ranked as fourth in the overall ranking of most important dimensions for organisational attractiveness. The items of the dimensions present that students and engineers find it really important that *"their leader can be believed and relied on to keep his worth"* (M = 4.57; M = 4.56)*, "highly values clear agreements and fair pay"* (M = 4.30; M = 4.34)*, encourages subordinates to develop their potential"* (M = 4.32; M = 4.43) and *"has a vision and imagination of the future"* (M = 4.09; M = 4.28).

Reward and Recognition – Although the students rated reward and recognition one place higher than the engineers, the results indicate that there is no significant difference between the samples (P ≈ 0.65). However, the results indicate that there is a significant difference for the dimension of promotion opportunities (P < 0.01). A possible explanation why this difference has no direct consequences for the significant difference on the construct level is that the correlations of the dimensions with promotion opportunities are low or negative (see paragraph 1.1 in appendix A on page 61). Both samples rated promotion opportunities as the least important dimension in this study. The results prove that students find promotion opportunities (M = 3.25) more important in the attraction by an organisation than engineers (M = 3.03). The ratings of the individual items indicate that both populations attach a lower importance to the time-aspect that is included in the dimension. The scores make a clear distinction between the more general items related to promotion opportunities (M = 3.57) and the items that represent fast promotion opportunities (M = 2.86). Therefore, new variables are computed to indicate if there are significant differences between the general items (item 1, 2, and 5) of promotion opportunities between the samples and the time-related items of promotion opportunities (item 3, 4, 6, and 7). The results prove that no significance difference is found for the general promotion opportunities items (P ≈ 0.12). However, there is a significant difference for the time related items of promotion opportunities which implies that students prefer faster promotions (P < 0.01).

For the praise and recognition and feedback seeking behaviour dimensions there are not found any significant differences. In comparison, the praise and recognition dimension is rated as really important for organisational attractiveness. Students rated praise and recognition (M = 4.10) on the second place of most important dimensions for organisational attractiveness, while engineers placed it third (M = 4.22) (See Table 6 in Appendix C on page 71). Both samples rated appreciation by their supervisors as the most important aspect of praise and recognition.

Feedback seeking behaviour has a lower importance for organisational attractiveness. Students placed it eleventh (M = 3.70), while engineers placed it twelfth (M = 3.71). The most important aspect according to both populations is the opportunity to directly ask their managers for information concerning their performance.

The pay preferences dimension which is added in this study to indicate how important pay preferences are in addition to the other dimensions. The results indicate that pay preferences are rated on the second lowest place by students (M = 3.30). However, due to the findings for the promotions opportunity dimension it is indicated that pay preferences have a lower importance than the other dimensions in this study. These results are likewise the results of the meta-analysis from Chapman et al. (2005). However, it has to be mentioned here that Chapman et al. (2005) presented a more general result for pay, while in this study pay is only represented by dimension of pay preferences. Moreover, the results presents similar outcomes but they have to be interpreted carefully because the way it is measured in this study is not the same as in the meta-analysis of Chapman et al. (2005).

Supportive Work Environment – The results indicate that there is no significant difference between the means of the supportive work environment construct ($P \approx 0.62$) while the ratings show that students ranked it higher (second place) than engineers (fifth place). Although there is no significant difference on the construct level, the dimension level indicates that there are significant differences for social support and social responsibility. The main reason why these differences have occurred is due to the ratings of the students and engineers for the dimensions. For the innovation orientation dimension no significant differences are found ($P \approx 0.32$). However, the social support ($P < 0.05$) and social responsibility dimensions ($P < 0.05$) do differ significantly between students and engineers. First of all, the social support dimension indicates that students (M = 4.01) find social support more important in the attraction by an organisation than engineers (M = 3.88). The social support aspects that are really preferred by students are *"the opportunity to develop close friendships in my job"* (M = 3.80)*, "the chance to get to know other people in my job"* (M = 4.13), and *"the opportunity to meet with others in my work"* (M = 4.14). Second, the results for the social responsibility dimension indicate that engineers (M = 3.89) rated the importance of social responsibility higher than students (M = 4.05). The difference especially occurs due to the ratings of the fourth item of the social responsibility scale which is: *"that has a clear guiding philosophy".* Due to the fact that students find social support more important and the engineers find social responsibility more important, the means of these two dimensions will be in the middle. For this reason, the supportive work environment construct did not show any significant differences between students and engineers.

Learning and Development Opportunities – The learning and development opportunities are rated as the third most important construct for the attraction of potential applicants. Although the students and engineers both rated learning and development on the third place, the test results indicate that there is a significant difference in the importance they attach to learning and development opportunities ($P < 0.01$). Engineers rated learning and development opportunities higher (M = 4.08) than students (M = 3.85). Furthermore, it can be indicated that the engineers find it more important that the learning and development opportunities in an organisation are designed to suit their personal needs and to develop a broad range of skills.

4.1.3. Differences between engineers and support department employees

The results of the tests that are conducted in order to find significant differences between engineers and the SDE proves that there is one significant difference on construct level, and two on the dimensional level. On the construct level, the significant difference is found for the *leadership construct* ($P < 0.01$). After conducting a t-test for the dimensions of transactional leadership and transformational leadership it became clear that the significant difference has been caused by a significant difference for the *transformational leadership dimension* ($P < 0.05$). A closer look at the items indicates that the SDE rated each item higher than the engineers which explains the differences in means of the dimensions and constructs. In addition, the conclusion can be drawn that the SDE find it really important that their managers are able to get them enthusiastic about his/her ideas. The other significant difference is found in the *innovation orientation* dimension ($P < 0.05$). The dimension indicates that the SDE ($M = 4.01$) find innovation orientation more important than the engineers ($M = 3.79$). The items present that the SDE find it more important that employees come up with ideas or opportunities for the organisational than to be encouraged for all kinds of proposals for change. It is especially the organisational aspects that determine the difference between the samples.

4.2. Preferred benefits

The second purpose of this study is to indicate how important benefits are in comparison with the other predictors of organisational attractiveness. The results indicate that between the samples no significant differences were found ($P \approx 0.31$). For this reason, it can be concluded that the benefits are equally important for the organisational attractiveness too all the samples. By positioning the means of the benefits per sample into the overall ranking of constructs, it can be indicate that students rated the benefits higher than the engineers and SDE. The mean of the students ($M = 4.00$) will be placed on the second place, while the mean of the engineers ($M = 3.84$) and SDE ($M = 3.91$) will be rated on the sixth place. These results prove that after leadership the benefits are the most important characteristic of an organisation to attract students. Although it is not likely that the benefits are one of the most important predictors of job organisational attraction, these results prove it is. A possible explanation for this results is that it is harder for students to imagine benefits of each construct and dimension because they have no work (or practical) experience. The work experience aspect makes it able for students to compare the advantages and disadvantages of the different constructs, dimensions, and the benefits. In spite of that, the results will used as they are generated from the students. Table 3 shows the ten most preferred benefits for the students and the employees of CX (results of engineers and SDE are combined). The reason for combining the results of engineers and SDE is to give an overview of the preferred benefits for the employees of CX. Appendix C on page 72 presents a separated overview of the different benefits for engineers and SDE.

Table 3: overview of the ten most preferred benefits[4]

Preferred benefits according to the engineers and SDE of Company X

Rank	Benefits	Number of times selected	% of samples
1	Flex Time arrangements	135	92.5%
2	The possibility to work at home.	118	80.8%
3	A personal training and development plan/ career path	108	74.0%
4	Year-end bonus (the 500,- bonus)	104	71.2%
5	Commuting cost allowance (reiskostenvergoeding)	93	63.7%
6	Flexibility to exchange time for money and vice versa (TVT, meerdagen, vakantiedagen)	89	61.0%
7	Offering collective insurances (also for directly related family members).	75	51.4%
8	Providing new media (e.g. tablets, laptop, or a smartphone) for organisational and private use.	72	49.3%
9	Opportunities for sport offered by the organisation (e.g. sport facilitites at the office building or a membership with a sport-gym)	64	43.8%
10	Free coffee and tea	60	41.1%

Preferred benefits according to the students

Rank	Benefits	Number of times selected	% of sample
1	A compensation for overtime hours in time of money.	100	73.5%
2	The opportunity to choose your holidays (for example based on your social cultural background)	87	64.0%
3	The opportunity to temporary work abroad	80	58.8%
4	Free coffee and tea	77	56.6%
5	A personal training and development plan/ career path	76	55.9%
6	Flex Time arrangements	75	55.1%
7	Year-end bonus (the 500,- bonus)	75	55.1%
8	The possibility to work at home.	71	52.2%
9	The possibility to change overtime hours into money and vice versa.	68	50.0%
10	Commuting cost allowance (reiskostenvergoeding)	64	47.1%

Table 3 indicates that in the top ten of most selected benefits per sample seven similar benefits are selected. As a result, the other three benefits differed per sample. The preferred benefits are; *1. the flexibility to exchange time for money and vice versa, 2. commuting cost allowance, 3. free coffee and tea, 4. a personal training and development plan or career path, 5. flex time arrangements, 6. year end bonus*, and *7. the opportunity to work at home*. Additionally, the differences can be found in the following benefits; (students) *1. the opportunity to choose their own holidays, 2. the opportunity to work abroad and the possibility to change overtime hours into money and vice versa* (employees of CX) *1. opportunities for sport, 2. offering collective insurances, and 3. the provision of new media.*

The selected benefits indicate that a large group of the employees of CX really prefers flex time arrangements and the possibility to work at home. Additional questions indicated that 85% of the sample of employees is already satisfied with the current flex time arrangement of CX, while 75% of the employees at least agrees that they prefer the opportunity to work at home. These results confirm the results that are found for the engineers and SDE as they were presented in paragraph 4.1.1. The overall ranking of the students presented in Appendix C on page 72 indicates that students have a higher preference for opportunities to work abroad, or to participate in international exchanges.

[4] A complete overview of the rankings is presented in appendix C on page 72. In addition the appendix presents an overview of the benefits for the engineers and SDE.

4.3. Commuting preferences

The questions related to the commuting preferences of the samples should give more insight in the area in which CX needs to recruit potential applicants. In total three questions were asked to obtain these insights. The first question indicated how important travel duration is for the attractiveness of an organisation. The results proved that travel duration is more important for students and SDE, than for the engineers ($P < 0.01$). Although the travel duration is more important for the SDE and engineers the second question indicates that only the students are prepared to commute longer than the engineers and SDE ($P < 0.01$). By using the means and the standard deviation of the means, it is proven that students are prepared to commute between the 34.5 and 63 minutes, while engineers are prepared to travel 28.5 and 51 minutes and the SDE between 25.5 and 55.5 minutes. Although the difference in commuting time is not the most important outcome of the second question, the outcome gives a clear picture in what range CX needs to focus their recruitment activities. The third question should indicate how important the accessibility by public transport is for the samples. This question should generate more insights in the importance of public transport by a possible relocation of CX. The results prove that there is a significant difference in favour of the student sample ($P < 0.01$). Students value the availability of public transport from neutral to important ($M = 3.42$) were employees of CX value it as unimportant to neutral ($M = 2.82$). Taking the overall mean, it can be assumed that the accessibility by public transport is neutral to the samples of this study.

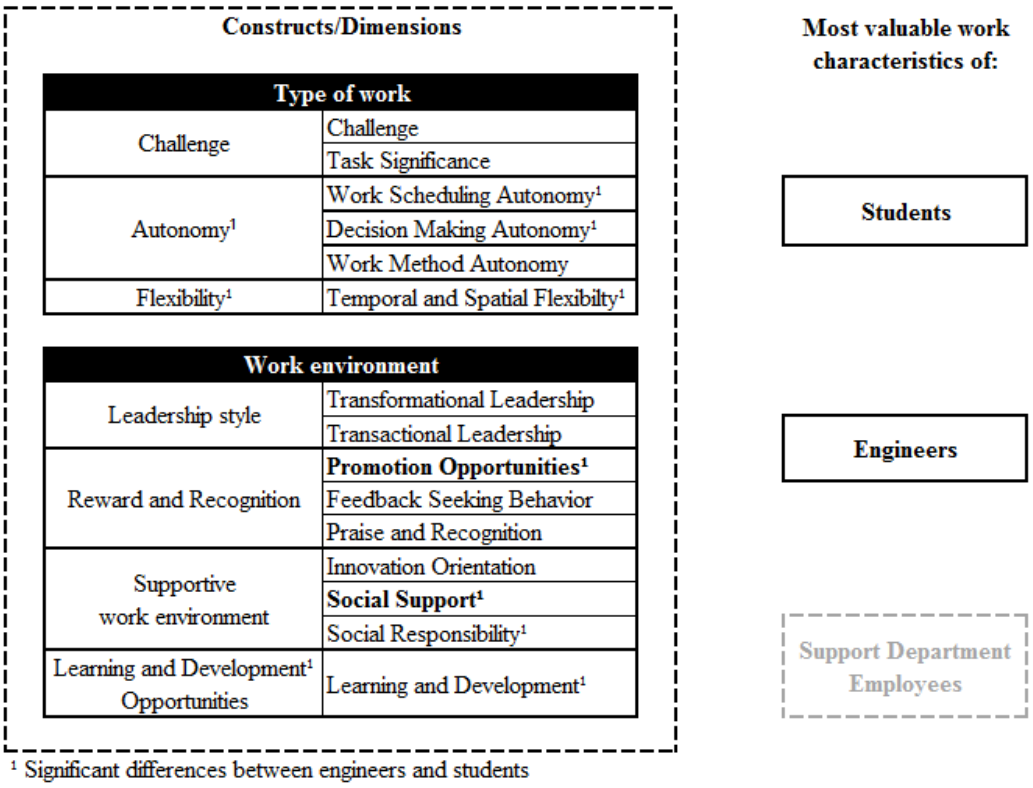
5. Conclusions and Discussion

The fifth chapter presents an overview of the conclusions that are drawn upon presented results in chapter four. Together the results and conclusions will generate an answer to the main research question. After answering the main research question an advice will be given for the management team of CX. Eventually the chapter ends with the limitations of this study and suggestions for further research.

5.1. The scientific findings

Chapter four presents seven significant differences between engineers and students. Of these significant differences students rated two dimensions higher than engineers, while it was expected that students would score higher on most of the constructs. These expectations are a result of the extracted theory and scales which should represent the strongest predictors of organisational attraction according to youngsters. However, the conclusion can be drawn that students only score significantly higher for social support and promotion opportunities (see the **bold** dimensions in Figure 6), while the other five dimensions are more important according to engineers (highlighted in Figure 6 with a; "[1]"). The comparison between engineers and SDE proved to have two significant differences. The SDE scored significantly higher for transformational leadership and innovation orientation. This paragraph will present the conclusions that can be drawn upon these results. As a result of the scientific findings, paragraph 5.2 will present the practical recommendations.

Figure 6: The significant differences in the constructs and dimensions



Challenge – The "challenge" construct is measured by the use of two scales. The *challenge* scale of Amabile et al. (1996) and the *task significance* scale of Morgeson and Humphrey (2006). The average of the construct of the different samples varies between M = 3.69 and M = 3.77 and no significant differences were found. Although there is no significant difference, the ranking depicts that challenge has a higher rank in the attraction by an organisation for students (fifth place) than the other samples (sixth place). This can be explained by the significant difference that is found for the flexibility construct that will be explained later on in this paragraph. A closer look at the dimensions suggests that the challenge dimension is considered to be more important in the attraction by an organisation than the impact of the performed work on the outside world. The average of the challenge scale varies between M = 3.91 and M = 4.04, while the average of the task significance scale varies between M = 3.40 and M = 3.51.

Autonomy – The "autonomy" construct is measured by two scales; *the work scheduling scale* and *the decision making scale.* Originally there were three scales extracted from the theory of Morgeson and Humphrey (2006), of which the work method autonomy and decision making autonomy scale are combined as a result of the conducted factor analysis. The conclusion can be drawn that there is a significant difference between students and engineers for the constructs and dimensions of autonomy. Engineers have a higher preference for autonomy (second place) than students (fourth place) which can be explained by the theory of Rainey (2003). Rainey (2003) concluded that an unfulfilled need provides a stimulus and leads to motivation, in contrast to a need that is fulfilled, which does not lead to motivation. The interpretation of this conclusion can be translated as followed; engineers that experience the advantages and disadvantages of autonomy are able to develop a strong desire to the perceived autonomy in their daily job because of their familiarity with the shortcomings or value of it. In other words, it is harder for students to get a clear picture of the advantages and disadvantages of autonomy which results in a lower valuation of the construct. This might also explain why the results show that students are not able to determine which dimension of autonomy is more important to them, while engineers make a clear distinction between work scheduling autonomy and decision making autonomy. According to engineers the work scheduling autonomy dimension is more important for organisational attractiveness than the decision making autonomy.

Flexibility – The "flexibility" construct is measured by the use of the *temporal and spatial flexibility scale* of Swanberg and Simmons (2008). The results proved that there is a significant difference between students and engineers. As a matter of fact, engineers find flexibility more important (fourth place) in describing the attractiveness of an organisation than students (seventh place). Existing theory presents two possible explanations for this conclusion. First of all, Hoff (2010) explained in his study that the difference is a result of the work experience of engineers. In combination with the outcomes of the study of Rainey (2003) it can here be concluded that due to the experiences of engineers they are better able to determine the importance of flexibility than the students. Another explanation is that work/family live becomes more important as employees are getting older (Hoff, 2010). Flexibility can therefore be seen as a possibility to manage work and family time demands (Lewis & Roper, 2008).

Leadership – "Leadership" is the strongest predictor of organisational attractiveness for all the samples in this study. For the construct two dimensions were extracted from the study of De Hoogh et al. (2004) to indicate the importance of leadership, which are; *transactional leadership*

and *transformational leadership*. The conclusion can be drawn that there are no significant differences between engineers and students. Both indicate that the trustworthiness and reliability of their managers/leaders (transactional leadership) are the most important aspects that predict organisational attractiveness. Although transactional leadership is the most important dimension according to students and engineers, the dimension of transformational leadership should not be underestimated with its fourth place in the list of most important dimensions for the attraction of an organisation. In other words, students and engineers strongly prefer managers who can be trusted and relied on, but also managers that are enthusiastic and able to increase the motivation of employees.

Another outcome is found in the comparison between engineers and SDE. The outcome shows a significant difference for the transformational leadership scale in which SDE have a higher preference for the scale than engineers. However, by the exploration of existing theory no logical explanation was found to clarify the difference between employees with a technical background and non-technical employees. During the organised brainstorm session it became clear that the SDE are more dependent on their leader in comparison with the engineers who conduct their work in projects groups. Therefore, it is assumed that the difference is a result of the dependency of employees on their leader/manager. Employees who are more dependent on their manager will have higher preferences for his/her characteristics than someone who has a lower dependency.

Reward and Recognition – No significant difference is found for the construct "reward and recognition". The students ranked it on a sixth place, while the engineers ranked it on the seventh place. The construct is represented by four scales; promotion opportunities (Trank et al., 2002), feedback seeking behaviour (Roberson et al., 2003), pay preferences (Trank et al., 2002), and praise and recognition (Trank et al., 2002). Although there is no significant difference found for the reward and recognition construct, there is a significant difference for the dimension of promotion opportunities. The results prove that the students in this study find promotion opportunities more important than engineers. Although Hoff (2010) subscribes this outcome to the low masculinity of the Dutch culture (Hofstede, 2005) where promotion opportunities are an example of a masculine aspect of work (Terjessen et al., 2007), the suggesting in this study is made that the results are influenced by the time related items of the scale. The scale puts too much emphasis on making fast promotions, which is slightly preferred by students and in a smaller sense preferred by engineers. Possible explanations might be that engineers already have made promotions and are therefore already satisfied with their current job position due to their achievements, praise and recognition, and the work content the job offers (Herzberg, 1987). On the other hand academic students seem to be quite ambitious, which might explain their higher preference for fast promotions (Hoff, 2010; Yeaton, 2008). The conclusion therefore is that students find fast promotions more important than people who already have work experience, and both samples consider upward as well as lateral promotion opportunities equal important.

An additional conclusion that can be drawn upon the pay preference is that students find group based pay more important than individual based pay. A possible explanation for this outcome can be subscribed to the experience of students with project assignments during their education (Ng et al., 2010). Another conclusion is that pay preferences are considered to be neutral in the attractiveness of an organisation, which is comparable to the results in the study of Chapman et al. (2005). However, it should be noticed here that Chapman et al. (2005) used more than one

dimension to indicate the importance of pay for organisational attractiveness. As a result, it can be concluded that the implemented compensation system by an organisation (individual based pay or group based pay) is considered to be as one of the least important aspects for organisational attractiveness.

Supportive work environment – While the construct of "supportive work environment" is placed second by the students as strongest predictor of organisational attractiveness it is rated at a fifth place by the engineers. In spite of that, there is no significant difference between the samples on the construct level. A closer look at the dimensions that are used to indicate the importance of the supportive work environment indicates that there is no significant difference for the innovation orientation scale (Detert et al., 2000), but there are significant differences for the social support (Morgeson & Humphrey, 2006) and social responsibility scale (Sarros et al., 2005). For the social support dimension it can be concluded that students especially prefer to work for an organisation that offers opportunities for friendship development or to meet others in their work, while engineers attach a lower importance to these aspects. This can first of all be explained by the experiences students have from their educational background. Universities are offering more and more courses in which students have to perform their work as a group (Ng et al., 2010). Second, the study of Boschma and Groen (2007) indicates that the line between social life and working life is becoming vaguer with the result that students wants to expand their social life through their work (Myers & Sadaghiani, 2010; Boschma & Groen, 2007). For the social responsibility dimension the conclusion can be drawn that engineers find it more important in the attractiveness by an organisation than students. Possible explanations for the differences in valuation are that students are more focussed on themselves instead of their environment (Ng et al., 2010) and students are willing to perform socially responsible, but do not know how that can be achieved (Gaudelli, 2009).

Another conclusion that is drawn is that there is a significant difference between the engineers and SDE. SDE prefer innovation orientation more than the engineers. A closer look at the items indicates that the difference comes forward through the items that are concerned with innovative organisational thoughts instead of all kinds of proposals for change. A possible explanation that was generated in the brainstorm session is that the tasks of the SDE are more related to the organisation as a whole in comparison with the tasks of engineers, who are more focussed on their own project/department. Another explanation is that research and development is a part of the daily tasks of engineers, while it is not a part of the work of the SDE.

Learning and development opportunities – Although the learning and development construct (Tones & Pillay, 2008) is placed on the third place by the students and engineers, the results indicate that there is a significant difference. The conclusion can be drawn that engineers find learning and development opportunities more important than students. According to the theory of Vollering (2011) and Arnett (2007) this can be explained by the different stages of life in which the respondents are represented. Engineers already made the step from college to a work place, while students still have to make this step. As a result the engineers already brought their knowledge into practice and therefore find learning and development opportunities more important for their further development. Students on the other hand have not made the transition from school to work and therefore the assumption has been made (based on the results chapter) that they attach more value to challenge; the challenge to use their capabilities into a practical

setting such as a job. After using their capabilities for a while they will become familiar with their shortcomings which results in a desire to learn and develop their capabilities even further (Vollering, 2011; Arnett, 2007).

Benefits – The benefits are equally preferred by the samples which denote that no significant differences were found. However, compared to the other constructs it is found that students rank benefits higher (second place) than engineers (sixth place). This result indicates that benefits are after leadership style the most important construct for organisational attractiveness, while according to engineers the leadership, autonomy, learning and development, flexibility, and a supportive work environment are more important predictors for organisational attractiveness. A possible explanation for the difference in ranking can be explained by the theory of Rainey (2003) which indicates that the unfulfilled needs will lead to more motivation than fulfilled needs. It is again the work experience that gives Engineers and SDE the advantage to value the advantages and disadvantages of benefits in relation with the other constructs.

A second question was used to reveal the most preferred benefits according to the different samples. The answers present that there are seven benefits which are ranked in the top ten of most important benefits by all samples. These seven benefits are; *1. the flexibility to exchange time for money and vice versa, 2. commuting cost allowance, 3. free coffee and tea, 4. a personal training and development plan or career path, 5. flex time arrangements, 6. year end bonus,* and *7. the opportunity to work at home*. Another conclusion that can be drawn upon the overall rating of benefits is that the benefits relating to international experiences are selected more often by students than by engineers. According to Ng et al. (2010) this might be a result of the desire of students to broaden their horizon by job mobility and international assignments.

Commuting preferences – The answer to the questions in relation to commuting preferences indicates that there are differences in preferred commuting opportunities. First, it can be concluded that students are more prepared to travel longer than engineers and also find the accessability of the organisation by public transport more important. Moreover, students are prepared to travel between the 34.5 and 63 minutes, while engineers are willing to commute between the 28.5 and 51 minutes on a single way. The conclusion for the samples in this study is that they should be recruited within a range of 63 minutes from the organisation that needs to recruit potential applicants.

5.1.1. Research question

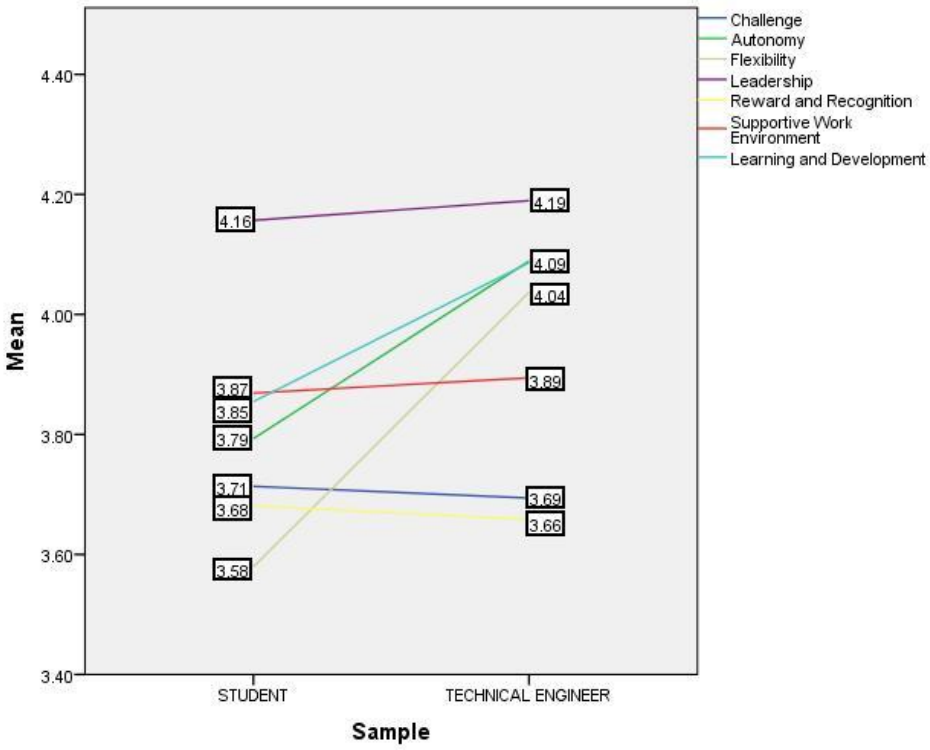
The above standing conclusions have lead to the following answer on the main research question;

"What are the most attractive type of work and work environment characteristics for technical students and Company X engineers, and to what extend do they differ for these two groups?"

The aim of this study is to improve the organisational attractiveness of Company X. For improving the organisational attractiveness it was necessary to indicate how important the work characteristics of type of work and work environment are for students and engineers. Both students and engineers are potential target groups that CX wants to recruit in order to accomplish their target of hiring one hundred new employees in the coming two or three years. Figure 7

present the ranking of the most important work characteristics for the attraction of students and for engineers.

Figure 7: The most attractive work characteristics according to students and engineers



In addition to the rankings, the results prove that there are seven significant differences in preferences between students and engineers. Students attach more value to social support and promotion opportunities, while the engineers gave a higher preference to learning and development opportunities, work scheduling autonomy, decision making autonomy, social responsibility, and flexibility. For the recruitment of new applicants it can be concluded that CX needs to focus its recruitment activities in favour of the potential target group CX wants to recruit. As a result, it can be concluded that if CX wants to recruit technical master students the recruitment message should contain very clear and specific information about promotion opportunities and social support. Additional, for recruiting engineers CX should put more attention to learning and development opportunities, work scheduling autonomy, decision making autonomy, social responsibility, and flexibility in order to become more attractive as an organisation. However, not only the recruitment message should spread out this information to the outside world. If possible, CX should communicate the opportunities through other communication channels (e.g., social media) to increase its employers' image.

Company X also needs to hire new employees that have no technical background. Therefore a comparison was made between engineers and supportive department employees (e.g., employees of HR, finance, marketing/sales). The results indicate that the SDE value innovation orientation and transformational leadership as more attractive work characteristics than engineers. It can

therefore be concluded that engineers and SDE can be recruited by almost the same information/ recruitment message.

In spite of the above standing results, it has to be mentioned that all the work characteristics discussed are playing a role for the attraction of potential applicants. This conclusion can be drawn upon the results which indicate that all the samples valued the work characteristics from neutral to very important, while no sample valued any work characteristics as unimportant. The indication can therefore be made that the difference between students and engineers only prove that some work characteristics are more important for a sample in contract with the other sample (see Table 6 on page 71).

5.2. Practical recommendations

The practical recommendations are a result of the results and conclusions of this study, a brainstorm session, and interviews with members of the works council of Company X. Due to the general nature of this study, it is hard to present practical recommendations for Company X. In order to generate more practical information about the current settings of these work characteristics in the organisation of CX a brainstorm session was organised and interviews with works council, managers, engineers, and recruiters were held. By combining the results of these meetings the following practical recommendations can be presented.

The organisational attractiveness of Company X can be increased in two different manners that are a result of each other. By improving the predictors of organisational attraction, the employee satisfaction will be increased resulting in employees spreading out more positive and enthusiastic organisational information to their friends, family and other people outside the organisation. As a result the organisational image as an employer of CX will be increased and therefore also its attractiveness. The second way to become more attractive is by using more specified and concrete information in communication to the outside world. Within these messages the different predictors of organisational attraction should be highlighted. For students, social support, promotion opportunities and benefits should be more highlighted in recruitment messages, while for engineers the learning and development opportunities, social responsibility, flexibility and autonomy are more important (see page 46). Therefore the recommendations for Company X in relation to the predictors of organisational attraction are as follows (sequence is from most important to “least” important as is presented in Figure 5 on page **Fout! Bladwijzer niet gedefinieerd.**);

Learning and development opportunities – The recommendations for learning and development opportunities are twofold. The first recommendation is that CX needs to offer employees a personal training and development plan which clarifies the training program that will be offered in the first year or first two years. Although there already is a training program for new hires, it is a necessity that new hires will receive these training and development opportunities. In other words, do not cut off these training and development opportunities if there is a budget stop but reserve enough money for training and development opportunities. By guaranteeing a fixed training and development program for new hires it becomes possible that CX uses this program in their recruitment messages. Eventually, this will contribute to trustworthiness of CX because promises will be kept.

The second recommendation is that Company X should further investigate the opportunities for offering traineeships to potential applicants. For the implementation of traineeships programs it is necessary to investigate the availability of budgets and the number of traineeship that CX can offer every year. Other things that will have to be investigated are the possibilities for job rotation and the opportunities for the trainees to visit the make-sites or other business centres for a few months. The advantages of traineeships is that CX can train and develop their own future managers, give highly qualified applicants more insights into the possibilities CX offers, and it increases the commitment of their trainees to the organisation. These advantages are a result of the preferences for benefits which potential applicants really preferred. The results showed that students preferred a personal training and development plan (55.9%), opportunities to work abroad (58.8%), international exchanges with the aim to gather and share knowledge (42.6%), and to participate in job programs (29.4%). All these benefits can be facilitated in a traineeship. Additionally, it contributes to the development of broader knowledge and to the development of trainings and development opportunities that suit the needs of an employee. Both aspects are marked as important in the valuation of the construct.

Social support – During the brainstorm session it became clear that the social support of colleagues in relation with their daily job and tasks are well organised within Company X. There are sufficient protocols and procedures to guide new hires in their first few months as an employee. In spite of that, the conclusion is that Company X should facilitate more social activities to improve the overall employee commitment. Most of the new hires are familiar with their project group members and managers, but not with the employees of other project groups or other departments. Too broaden their scope of new hires, but also of the current employees of CX it is advised to organise and facilitate a monthly social activity or event such as for example a Friday afternoon drink. New hires should receive a personal invitation for the Friday afternoon drink, while the other employees will be invited through for example the “digiscreens”.

The Friday afternoon drink offers employees the opportunity to meet employees from other departments with whom they can develop friendships or share knowledge. For Company X this will have a positive effect for the organisational commitment and on the sharing of knowledge which can lead to new organisational opportunities or innovative ideas. Also, it contributes to the social aspects of meeting new people and the development of friendships between employees. As a result employees will become more enthusiastic and motivated, which will be communicated to their friends, family or other people they meet outside Company X. The consequence is that the employers’ image will be improved.

Social responsibility – The advice in relation with social responsibility is clear. Engineers and students find social responsibility important for the attractiveness of an organisation. For this reason, Company X should communicate very clear and precise how they are contributing to the social environment by for example their website, mission, vision, social media, or by recruitment messages. For Company X it should be no problem to communicate practical examples of their contribution to the social environment because their products are already contributing to the environment, safety of people, and sustainability. Another way to introduce the way in which Company X performs social responsible is by offering potential applicants a business course. The business course will make applicants familiar with the kind of products that Company X produces and additionally the impact of these problems on the social environment.

Temporal and spatial flexibility/Autonomy – The recommendations for temporal and spatial flexibility and autonomy are that CX should communicate the amount of freedom employees have when they are working for CX. In the communication message the focus should be on the opportunities to work at home, the flex time arrangements, the chance of using personal initiatives in a daily job and the possibilities to change your daily schedule for a job. These were valued as the most important aspects of temporal and spatial flexibility and are confirmed in two ways. First of all, the results of the benefits indicate that flex time arrangements and the opportunity to work at home are two of the most important benefits. Second, two additional questions indicated that 84.2% of the engineers and SDE is already satisfied with the current flex time arrangements. However, the 15.8% that is not satisfied with the flex time arrangements most often have the reason that they want more flexibility in using saved flex hours. An example that was given is that they want to use their saved up hours in order to take off an afternoon from 01.00 pm instead of 03.00 pm. In other words, instead of using their "adv-uren" they prefer to use their saved up flex time hours to take a day off, which gives them an alternative to use these hours instead of cutting them off.

The second question indicated in how far engineers and SDE preferred the opportunity to work at home. Taken in sum both samples it can be concluded that 8.9% does disagree or strongly disagrees with the statement that the employees prefer to work at home, 18.5% indicates that it is neutral to them and 72.6% agrees or strongly agrees on the statement. Therefore, the recommendation for CX is that they should further investigate the opportunities for their employees to work at home.

An additional recommendation is that Company X should hire an organisation or a person who facilitates the accommodation of employees who will relocate near Almelo in order to work for Company X. It is very hard and difficult for new hires (especially from abroad) to arrange everything which is necessary for relocation.

Promotion opportunities – during the brainstorm session it became clear that the promotion opportunity scale is not representative for the aspects of promotion opportunities in which we are interested. Promotion opportunities can be seen as financial improvements or upward movement in the hierarchy. Because the scale is focused on fast promotions, no practical recommendations will be given as a result of the conclusions presented in paragraph 5.1. The only recommendation that came forward during the brainstorm session is that it is a possibility to communicate or present examples of promotions made by the current employees in the same job position for which the organisation is recruiting new applicants.

Benefits – In relation to the benefits it is advisable to offer the seven most preferred benefits by all the samples in this study (*1. the flexibility to exchange time for money and vice versa, 2. commuting cost allowance, 3. free coffee and tea, 4. a personal training and development plan or career path, 5. flex time arrangements, 6. year end bonus,* and *7. the opportunity to work at home).* Additionally, CX should consider and further investigate the implementation of a *"cafetaria system"*. The cafetaria system offers employees flexibility in choosing their benefits which they will receive from CX. This could be an adequate solution for them because the selected benefits by the samples are ranked really close together. For this reason it is recommended to further investigate the possibilities for implementing a cafetaria system. If CX

eventually chooses to implement a cafetaria system, they should explicitly communicate the advantages and disadvantages of the system in the implementation phase in order to clarify possible consequences.

Commuting preferences – The advice in relation with the commuting preferences is that Company X should focus their recruitment activities within a range of 63 minutes from their current location. However, this does not mean that CX should send any recruitment messages to the world outside this area (e.g., the universities of Delft and Eindhoven or other countries). The results only indicate that looking at travel duration Company X would have most success within this area to recruit new employees, because the people outside this area might not be willing to commute to Company X every day.

Practical Recommendations for future research - Further opportunities for improving the organisational attractiveness of CX can be achieved by additional research. It is recommended to further investigate the following subjects; First of all, generate more information about how CX can introduce and implement a traineeship for highly qualified applicants to become more attractive. Second, use an evaluative questionnaire to indicate which recruitment predictors of CX can be improved in order to increase the organisational attractiveness according to the current employees. Third, CX should investigate how the current employees with 0 - 2 years of work experience have perceived the communication from CX during their college period. How can CX improve their communication messages, what kind of information was missing and what is in their opinion the best way for CX to actively approach students who are still in college? Additionally, while sending out a survey related to these questions, CX can also ask questions in relation with job security and measure their willingness for relocation in order to accept a job. Fourth and final, investigate the advantages and disadvantages of using social media to expand the different communication channels of CX. Youngsters communicate a lot through social media with as a result that it can contribute to the organisational image if it is used in the right way. The results of these studies will give CX even more insights in how to improve their organisational attractiveness.

5.2.1. In conclusion

Additional to the conclusions drawn in paragraph 5.1 it is recommended for Company X to follow up the following summarized recommendations; First of all, CX should introduce and implement traineeships for recently graduated students to show them that Company X offers opportunities for further development. Second, facilitate or organise regular social activities to broaden the scope of employees who are stuck into their own project group. Third, organise business courses for students who are still in college. By offering business courses the students will become familiar with CX earlier, but also with their products and the contribution of these products to a social responsible environment. Fourth, communicate the opportunities offered in relation with flex time arrangements, and further investigate to implement opportunities to offer their employees the opportunity to work at home. The fifth recommendation is to offer the seven benefits that are preferred by all the samples, and additionally the implementation of a *"cafeteria plan"*. The other two recommendations are related to the area in which CX needs to focus their recruitment activities (within a range of 63 minutes) and suggestions for future research that can even further improve the organisation attractiveness.

5.3. Limitations

This study contains some limitations caused by the choices that had to be made in order to make progress. The first limitation relates to the recruitment predictors that are extracted from existing theories. Previous studies proved that the recruitment predictors have an effect on recruitment outcomes. However, my study only showed a ranking of the most valuable recruitment predictors. The limitation is therefore that this study did not test the effects of the recruitment predictors on the recruitment outcomes. Especially the effects on the recruitment outcome of job choice are important because CX wants to attract a lot of new employees. The second limitation is related to the measurement scales. First of all, the praise and recognition and social responsibility scales are not reliable and therefore their results have to be interpreted carefully. As a matter of fact, the unreliability of the scales could have influenced the rankings per sample. Additional to the unreliability, several reworded scales were used. Most of the original scales have an evaluative nature and are reworded to a preference nature. This might have influenced the outcomes due to different interpretations. Future research should indicate of the results of this study and scales will hold over other samples. The third limitation is that the questionnaire did not evaluate the satisfaction of the employees from CX. The evaluation of the job and organisational characteristics of CX gives direct insights in which characteristics needs to be improved first. In other words, it offers the opportunity to measure the satisfaction of current employees of the most important dimensions in the attraction of potential applicants.

5.4. Scientific recommendations for future research

The recommendations and limitations form together a foundation for future research. First, the cross-sectional nature of this study only determines the most important job and organisational characteristics in a single point in time at a specific organisation (CX). Hence, future research is necessary to confirm the outcomes and prove that the results will hold over different samples within the technical industry to generalize the results. Second, future research needs to prove the effects of the different recruitment predictors of type of work and the work environment with the recruitment outcomes. Especially the effects of the recruitment predictors on the recruitment outcome of job choice are important. Third, now that the most important recruitment predictors are known it is necessary to indicate how these predictors can be used optimally in recruitment messages. Future research therefore needs to design and evaluate recruitment messages which contain the recruitment predictors that are important in the attraction of engineers. The third suggestion for future research is related to the measurement scales of the social responsibility and praise and recognition dimensions. As a result, future research should explore or design other scales that are reliable to prove if the results of this study will remain the same.

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Appendix A: Overview of the measurement scales and factor analysis output

Appendix A presents an overview of the criteria that are used in order to conduct a factor analysis. It will first discuss the criteria used in order to conduct a factor analysis. Second, it will present an overview of the correlations between the different dimensions and third and finally it presents the items, correlations and factor structures for the extraction of the different dimensions.

The factor analysis is conducted in SPSS 20 by using the principal component analysis as exploration method. The varimax rotation option was used to strengthen the outcomes of the factor loadings if possible. By strengthen the outcomes of the factor structures it is easier to extract the different components. For the interpretation of the factor structures another criteria has to be used in order to interpret the results. According to Field (2009), the average communalities determine which method needs to be used in order to extract components. If the average communalities of a factor structure are above the 0.6 and the sample is equal or exceeds the number of 250 respondents, than Kaiser's criterion can be used to extract different components. Kaiser's criterion extracts components when the Eigenvalue is higher than 1.0. If the average communalities are lower than the 0.60, it is advised to use the scree plot for extracting the components (Field, 2009). The results of the factor analysis indicate that the average communalities range from 0.420 to 0.724. A closer look indicates that five of the sixteen scales did not reach the minimum level of 0.60. Therefore the extraction of components for the scales of transformational leadership, transactional leadership, promotion opportunities, social support, temporal and spatial flexibility, and social responsibility needs to be conducted by the scree plot. In this study only factor loadings with a minimum value of 0.4 will be interpreted as suggested by Stevens (2002).

Table of Contents for Appendix A:

1.1. Correlation matrix.....62
1.2. Challenge construct.....62
1.3. Autonomy construct.....63
1.4. Flexibility construct.....64
1.5. Leadership construct.....65
1.6. Reward and Recognition construct.....66
1.7. Supportive work environment construct.....67
1.8. Learning and Development construct.....69

1.1 Correlation Matrix

Correlation Matrix

	Constructs	Mean (0-5)	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Type of work	**Challenge**																		
	1 Challenge	3.9704	.47422	1															
	2 Task Significance	3.4699	.66961	.224**	1														
	Autonomy																		
	3 Work Scheduling Autonomy	4.0296	.59615	.140**	.147**	1													
	4 Decision Making Autonomy	3.9161	.56912	.248**	.137*	.470**	1												
	5 Work Method Autonomy	3.8995	.48683	.213**	.110*	.459**	.562**	1											
	Flexibility																		
	6 Spatial and Temporal Flexibility	3.8227	.52804	.088	.107*	.397**	.167**	.244**	1										
Work Environment	**Leadership**																		
	7 Transformational leadership	4.0812	.38443	.342**	.418**	.259**	.356**	.286**	.174**	1									
	8 Transactional leadership	4.3333	.44241	.089	.148**	.172**	.294**	.212**	.225**	.526**	1								
	Reward and Recognition																		
	9 Promotion Opportunities	3.1601	.57548	-.002	.205**	.040	.112*	.133*	.046	.132*	-.021	1							
	10 Feedback Seeking Behaviour	3.6941	.58960	.145**	.230**	.100*	.174**	.204**	.205**	.372**	.237**	.129*	1						
	11 Praise and Recognition	4.1844	.51632	.189**	.212**	.159**	.210**	.086	.059	.330**	.305**	-.081	.051	1					
	12 Pay Preferences	3.2966	.54156	.063	.294**	.142*	.133	.078	.258**	.387**	.205**	.320**	.392**	.039	1				
	Supportive Work Environment																		
	13 Social Support	3.9285	.45226	.059	.214**	.053	.030	.090	.215**	.192**	.367**	-.010	.257**	.247**	.118	1			
	14 Social Responsibility	3.9707	.45752	.186**	.385**	.172**	.152**	.141**	.330**	.446**	.270**	.030	.204**	.299**	.271**	.298**	1		
	15 Innovation Orientation	3.7943	.56895	.253**	.287**	.208**	.317**	.272**	.137*	.526**	.256**	.159**	.396**	.217**	.413**	.168**	.354**	1	
	Learning and Development																		
	16 Learning and Development	3.9832	0.52256	.215**	.250**	.204**	.253**	.242**	.424**	.266**	.238**	.351**	.235**	.418**	.192**	.353**	.495**	.255**	1

* ρ ≤ 0.05
** ρ ≤ 0.01
Determinant = 0.010

1.2 Challenge construct

	Scale	Correlations							
	Challenge	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**α = 0.68**
1	.. to try to solve complex problems.	1							
2	.. to solve difficult problems, because the more difficult the problem, the more I enjoy trying to solve it.	.591**	1						
3	.. my work to provide me with opportunities for increasing my knowledge and skills.	.152*	.173**	1					
4	.. curiosity to be the driving force behind much of what I do.	.197**	.268**	.263**	1				
5	.. to tackle problems that are completely new to me.	.282**	.383**	.284**	.320**	1			
6	.. work I know I can do well over work that stretches my abilities.[1]	.074	.080	.092	-.002	.111	1		
7	.. relatively simple, straightforward tasks.	.236**	.304**	.261**	.105	.187**	.375**	1	

[1] Deleted for further analysis
* ρ ≤ 0.05
** ρ ≤ 0.01

	Task Significance	1	2	3	4	α = 0.87
1	.. that the results of my work are likely to significantly affect the lives of other people.	1				
2	.. my work to be very significant and important in the broader scheme of things.	.613**	1			
3	.. a large impact on people outside the organisation.	.595**	.578**	1		
4	.. the work performed should have a significant impact on people outside the organisation.	.585**	.544**	.786**	1	

* ρ ≤ 0.05
** ρ ≤ 0.01

	Component	
Challenge	**1**	**2**
.. a large impact on people outside the organisation.	.865	
.. the work performed should have a significant impact on people outside the organisation.	.857	
.. that the results of my work are likely to significantly affect the lives of other people.	.824	
.. my work to be very significant and important in the broader scheme of things.	.793	
.. to solve difficult problems, because the more difficult the problem, the more I enjoy trying to solve it.		.773
.. to try to solve complex problems.		.715
.. to tackle problems that are completely new to me.		.610
.. relatively simple, straightforward tasks.		.595
.. my work to provide me with opportunities for increasing my knowledge and skills.		.494
.. curiosity to be the driving force behind much of what I do.		.465
.. work I know I can do well over work that stretches my abilities.		X

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

1.3 Autonomy Construct

	Scale	Correlations						
	Work Scheduling autonomy	**1**	**2**	**3**				**α = 0.81**
1	.. to make my own decisions about how to schedule my work.	1						
2	.. to decide on the order in which things are done on the job.	.603**	1					
3	.. to plan how I do my work.	.557**	.601**	1				
	Decision Making autonomy	**1**	**2**	**3**	**4**	**5**	**6**	**α = 0.79**
1	.. a chance to use my personal initiative or judgement in carrying out the work.	1						
2	.. to make a lot of decisions on my own.	.349**	1					
3	.. significant autonomy in making decisions.	.382**	.645**	1				
	Work Method Autonomy							
4	.. to make decisions about what methods I use to complete my work.	.418**	.371**	.380**	1			
5	.. considerable opportunity for independence and freedom in how I do the work.	.266**	.356**	.527**	.354**	1		
6	.. to decide on my own how to go about doing my work.	.183**	.300**	.353**	.339**	.530**	1	

* $\rho \leq 0.05$
** $\rho \leq 0.01$

	Component	
Autonomy	**1**	**2**
.. significant autonomy in making decisions.	.763	
.. to make a lot of decisions on my own.	.702	
.. considerable opportunity for independence and freedom in how I do the work.	.672	
.. to make decisions about what methods I use to complete my work.	.658	
.. a chance to use my personal initiative or judgement in carrying out the work.	.615	
.. to decide on my own how to go about doing my work.	.604	
.. to decide on the order in which things are done on the job.		.841
.. to plan how I do my work.		.813
.. to make my own decisions about how to schedule my work.		.804

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

1.4 Flexibility Construct

	Scale	Correlations						
	Temporal and spatial flexibility	**1**	**2**	**3**	**4**	**5**	**6**	**α = 0.73**
1	.. the opportunity to occasionally work from home.	1						
2	.. the opportunity to take days off for a sick child without losing pay or vacation time.[1]	.133*	1					
3	.. the opportunity to choose my own start and end times.	.392**	.113	1				
4	.. the opportunity to work a compressed work week.	.282**	.242**	.385**	1			
5	.. the opportunity to change my daily schedule.	.282**	.113	.533**	.420**	1		
6	.. the opportunity to decide when to take breaks.	.204**	.146*	.377**	.213**	.467**	1	

[1] Deleted for further analysis
* $\rho \leq 0.05$
** $\rho \leq 0.01$

	Component
Flexibility	**1**
.. the opportunity to change my daily schedule.	.785
.. the opportunity to choose my own start and end times.	.777
.. the opportunity to work a compressed work week.	.665
.. the opportunity to decide when to take breaks.	.637
.. the opportunity to occasionally work from home.	.584
.. the opportunity to take days off for a sick child without losing pay or vacation time.	X

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

1.5 Leadership

	Scale	Correlations											
	Transformational leadership	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**α = 0.79**
1	.. talks with subordinates about their important values and beliefs.	1											
2	.. challenges subordinates to think about problems in new ways.	.351**	1										
3	.. has a vision and imagination of the future.	.322**	.358**	1									
4	.. is always seeking new opportunities for the organisation.	.253**	.300**	.415**	1								
5	.. encourages subordinates to be independent thinkers.	.206**	.327**	.206**	.430**	1							
6	.. is able to get others enthousiastic about his/her ideas.	.144*	.229**	.201**	.180**	.274**	1						
7	.. involves subordinates in decisions that affect their work.	.051	.267**	.220**	.122*	.239**	.169**	1					
8	.. encourages subordinates to develop their potential.	.177**	.279**	.276**	.305**	.383**	.305**	.387**	1				
9	.. mobilizes a collective sense of mission.	.263**	.277**	.362**	.352**	.171**	.303**	.165**	.341**	1			
10	.. displays conviction in his/her ideals, beliefs, and values.	.236**	.171**	.313**	.161**	.193**	.277**	.196**	.286**	.330**	1		
11	.. delegates challenging responsibilities to subordinates.	.191**	.189**	.298**	.303**	.340**	.248**	.307**	.399**	.208**	.234**	1	

* ρ ≤ 0.05
** ρ ≤ 0.01

	Scale	Correlations						
	Transactional leadership	**1**	**2**	**3**	**4**	**5**	**6**	**α = 0.78**
1	.. ensures that agreements are being kept.	1						
2	.. can be believed and relied upon to keep his/her word.	.407**	1					
3	.. can be relied on to meet obligations.	.431**	.579**	1				
4	.. does not criticize subordinates without good reason.	.244**	.349**	.345**	1			
5	.. highly values clear agreements and fair pay.	.327**	.407**	.399**	.469**	1		
6	.. ensures that conditions and resources are such that subordinates are able to do their work.	.265**	.345**	.388**	.291**	.437**	1	

* ρ ≤ 0.05
** ρ ≤ 0.01

	Component	
Leadership	**1**	**2**
.. has a vision and imagination of the future.	.680	
.. is always seeking new opportunities for the organisation.	.665	
.. challenges subordinates to think about problems in new ways.	.622	
.. talks with subordinates about their important values and beliefs.	.575	
.. mobilizes a collective sense of mission.	.566	
.. encourages subordinates to be independent thinkers.	.535	
.. encourages subordinates to develop their potential.	.517	
.. delegates challenging responsibilities to subordinates.	.514	
.. displays conviction in his/her ideals, beliefs, and values.	.423	
.. is able to get others enthousiastic about his/her ideas.	.420	
.. can be believed and relied upon to keep his/her word.		.762
.. can be relied on to meet obligations.		.753
.. highly values clear agreements and fair pay.		.707
.. does not criticize subordinates without good reason.		.627
.. ensures that conditions and resources are such that subordinates are able to do their work.		.570
.. ensures that agreements are being kept.		.560
.. involves subordinates in decisions that affect their work.		?

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

	Component
Transformational Leadership	**1**
.. encourages subordinates to develop their potential.	.667
.. has a vision and imagination of the future.	.638
.. is always seeking new opportunities for the organisation.	.620
.. encourages subordinates to be independent thinkers.	.603
.. mobilizes a collective sense of mission.	.601
.. challenges subordinates to think about problems in new ways.	.593
.. delegates challenging responsibilities to subordinates.	.591
.. displays conviction in his/her ideals, beliefs, and values.	.523
.. is able to get others enthousiastic about his/her ideas.	.514
.. talks with subordinates about their important values and beliefs.	.489
.. involves subordinates in decisions that affect their work.	.477

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

1.6 Reward and Recognition

	Scale	Correlations							
	Promotion Opportunities	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**α = 0.77**
1	.. I want a job where there are lots of opportunities for upward mobility..	1							
2	.. I don't want to work in a "flattened" organization where most of the career moves people make are lateral instead of upward.	.322**	1						
3	.. I will be disappointed if I haven't had a promotion within a year of leaving college.	.235**	.256**	1					
4	.. I will be disappointed if I haven't had a promotion within two years of leaving college.	.277**	.281**	.774**	1				
5	.. promising to improve my "employability" through job rotation and training is not a substitute for promotions.	.230**	.214**	.248**	.199**	1			
6	.. I am likely to try to move to another company within the first two years when I find myself in a firm with slow promotions,.	.302**	.146*	.353**	.385**	.320**	1		
7	.. I don't want to work for an organization where I can't move up very rapidly.	.323**	.260**	.407**	.402**	.276**	.600**	1	

* $\rho \leq 0.05$
** $\rho \leq 0.01$

	Scale	Correlations				
	Feedback seeking	**1**	**2**	**3**	**4**	**α = 0.80**
1	.. to directly ask my manager for information concerning my performance.	1				
2	.. to directly ask my manager for informal appraisals (evaluation) of my work.	.700**	1			
3	.. to seek information from peers/co-workers about my performance.	.455**	.432**	1		
4	.. to directly ask peers/co-workers for feedback concerning work in progress.	.424**	.360**	.666**	1	

* $\rho \leq 0.05$
** $\rho \leq 0.01$

	Scale	Correlations				
	Praise and recognition	**1**	**2**	**3**	**4**	**α = 0.54**
1	.. supervisors that appreciate the work I do.	1				
2	.. to be praised and recognized for my accomplishments because it makes me want to do even better.	.390**	1			
3	.. rather have money than praise for a job well done.[1]	.088	.016	1		
4	.. managers who often use praise as a substitute for paying people what they're really worth.[1]	.095	.017	-.186**	1	

[1] Deleted for further analysis

* ρ ≤ 0.05

** ρ ≤ 0.01

	Component		
Reward and Recognition	**1**	**2**	**3**
.. I will be disappointed if I haven't had a promotion within two years of leaving college.	.742		
.. I will be disappointed if I haven't had a promotion within a year of leaving college.	.742		
.. I don't want to work for an organization where I can't move up very rapidly.	.740		
.. I am likely to try to move to another company within the first two years when I find myself in a firm with slow promotions,.	.690		
.. I want a job where there are lots of opportunities for upward mobility..	.558		
.. I don't want to work in a "flattened" organization where most of the career moves people make are lateral instead of upward.	.513		
.. promising to improve my "employability" through job rotation and training is not a substitute for promotions.	.498		
.. to directly ask my manager for information concerning my performance.		.802	
.. to seek information from peers/co-workers about my performance.		.786	
.. to directly ask peers/co-workers for feedback concerning work in progress.		.784	
.. to directly ask my manager for informal appraisals (evaluation) of my work.		.752	
.. to be praised and recognized for my accomplishments because it makes me want to do even better.			.704
.. supervisors that appreciate the work I do.			.703
.. rather have money than praise for a job well done.			.432
.. managers who often use praise as a substitute for paying people what they're really worth.			X

Extraction Method: Principal Component Analysis.

a. Rotation converged in 5 iterations.

1.7 Supportive Work Environment

	Scale	Correlations			
	Innovation orientation	**1**	**2**	**3**	**α = 0.73**
1	.. to be encouraged to make all kinds of proposals for change.	1			
2	.. to be expected to look for new opportunities for the organisations.	.492**	1		
3	.. subordinates that come up with ideas themselves to improve the organisation.	.385**	.536**	1	

* ρ ≤ 0.05

** ρ ≤ 0.01

	Scale	Correlations						
	Social support	**1**	**2**	**3**	**4**	**5**	**6**	**α = 0.74**
1	.. the opportunity to develop close friendships in my job.	1						
2	.. the chance to get to know other people in my job.	.432**	1					
3	.. the opportunity to meet with others in my work.	.299**	.672**	1				
4	.. a supervisor who is concerned about the welfare of the people that work for him/her.	.134*	.341**	.353**	1			
5	.. the people I work with to take a personal interest in me.	.323**	.401**	.382**	.364**	1		
6	.. the people I work with that are friendly.	.146*	.337**	.300**	.229**	.412**	1	

* ρ ≤ 0.05

** ρ ≤ 0.01

	Scale	Correlations				
	Social Responsibility	**1**	**2**	**3**	**4**	**α = 0.58**
1	.. that is being reflective.	1				
2	.. that has a good reputation.	.301**	1			
3	.. that is being socially responsible.	.205**	.216**	1		
4	.. that has a clear guiding philosophy.	.243**	.243**	.347**	1	

* ρ ≤ 0.05

** ρ ≤ 0.01

	Component		
Supportive Work Environment	**1**	**2**	**3**
.. to be encouraged to make all kinds of proposals for change.		.717	
.. to be expected to look for new opportunities for the organisations.		.823	
.. subordinates that come up with ideas themselves to improve the organisation.		.795	
.. that is being reflective.			.627
.. that has a good reputation.			.515
.. that is being socially responsible.			.717
.. that has a clear guiding philosophy.			.565
.. the opportunity to develop close friendships in my job.	.642		
.. the chance to get to know other people in my job.	.850		
.. the opportunity to meet with others in my work.	.778		
.. a supervisor who is concerned about the welfare of the people that work for him/her.	.435		
.. the people I work with to take a personal interest in me.	.617		
.. the people I work with that are friendly.	.514		

Extraction Method: Principal Component Analysis.

a. Rotation converged in 5 iterations.

1.8 Learning and Development Opportunities

	Scale	Correlations				
	Learning and development	**1**	**2**	**3**	**4**	**α = 0.80**
1	.. help in order to decide which skills to improve.	1				
2	.. learning and development activities designed to develop a range of skills.	.466**	1			
3	.. it to provide me training in advanced skills.	.320**	.701**	1		
4	.. the willingness to change the learning and development activities to suit my needs.	.414**	.507**	.581**	1	

* $\rho \leq 0.05$

** $\rho \leq 0.01$

	Component
Learning and Development Opportunities	**1**
.. help in order to decide which skills to improve.	.660
.. learning and development activities designed to develop a range of skills.	.860
.. it to provide me training in advanced skills.	.843
.. the willingness to change the learning and development activities to suit my needs.	.793

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Appendix B: Overview of additional tables to explain the test results

Table 4: overview of the test results between the universities

	Means:			ANOVA	Bonferroni test results		
Dimensions	University of Delft[2]	University of Eindhoven[2]	University of Enschede[2]	Outcomes (ρ)	Delft vs. Eindhoven (ρ)	Delft vs. Enschede (ρ)	Eindhoven vs.Enschede (ρ)
Transactional Leadership	4.3710	4.3287	4.2705	0.59	1.000	0.971	1.000
Praise and Recognition[1]	4.0968	4.0556	4.1159	0.72	1.000	1.000	1.000
Transformational Leadership	4.0704	3.9773	3.9895	0.52	0.914	0.936	1.000
Social Support	4.0699	3.9954	3.9831	0.65	1.000	1.000	1.000
Social Responsibility[1]	4.0081	3.8681	3.8478	0.28	0.679	0.352	1.000
Work Scheduling Autonomy	3.9570	3.7222	3.7778	0.22	0.229	0.462	1.000
Challenge	3.9355	3.9398	3.8913	0.83	1.000	1.000	1.000
Learning and Development	3.8871	3.8125	3.8623	0.86	1.000	1.000	1.000
Decision Making Autonomy	3.8118	3.7824	3.7681	0.89	1.000	1.000	1.000
Innovation Orientation	3.7742	3.6852	3.6957	0.79	1.000	1.000	1.000
Feedback Seeking Behaviour	3.7742	3.6111	3.7101	0.87	0.629	1.000	1.000
Temporal and Spatial Flexibility	3.7226	3.6056	3.5014	0.14	1.000	0.154	0.996
Task Significance	3.5645	3.4931	3.5000	0.91	1.000	1.000	1.000
Pay Preferences	3.3065	3.3056	3.3437	0.44	1.000	0.986	0.987
Promotion Opportunities	3.2396	3.0754	3.2874	0.09	0.781	1.000	0.088

[1] Interpret with caution due to unsufficient reliability
[2] (Delft, N=31), (Eindhoven, N=36), (Enschede, N=69)

Table 5: Overview of the significant differences between the samples (construct level)

	Students		Engineers		SDE		Students vs. Engineers	SDE vs. Engineers
Construct	Mean	SD	Mean	SD	Mean	SD	ρ	ρ
Challenge	3.71	0.47	3.69	0.44	3.77	0.40	0.756	0.267
Autonomy	3.79	0.41	4.09	0.46	4.20	0.43	0.000**	0.160
Flexibility	3.58	0.36	4.04	0.47	4.07	0.57	0.000**	0.721
Leadership	4.16	0.36	4.19	0.35	4.35	0.35	0.504	0.007**
Reward and Recognition	3.68	0.37	3.66	0.34	3.71	0.37	0.646	0.421
Supportive Work Environment	3.87	0.37	3.89	0.37	3.97	0.28	0.618	0.162
Learning and Development	3.85	0.58	4.09	0.41	4.13	0.47	0.001**	0.579

* $\rho \leq 0.05$
** $\rho \leq 0.01$

Table 6: Ranking of the dimensions per sample

Students				Engineers			Support Departments		
Rank	Measurement scale	Mean	SD	Measurement scale	Mean	SD	Measurement scale	Mean	SD
1	Transactional Leadership	4.31	0.47	Transactional Leadership	4.32	0.43	Transactional Leadership	4.42	0.39
2	Praise and Recognition[1]	4.10	0.55	Work Scheduling Autonomy	4.22	0.56	Praise and Recognition[1]	4.35	0.45
3	Social Support	4.01	0.44	Praise and Recognition[1]	4.22	0.47	Work Scheduling Autonomy	4.27	0.49
4	Transformational Leadership	4.00	0.37	Transformational Leadership	4.10	0.38	Transformational Leadership	4.23	0.38
5	Challenge	3.91	0.44	Learning and Development	4.08	0.43	Learning and Development	4.15	0.44
6	Social Responsibility[1]	3.89	0.47	Social Responsibility[1]	4.05	0.46	Temporal and Spatial Flexibility	4.09	0.56
7	Learning and Development	3.85	0.58	Temporal and Spatial Flexibility	4.02	0.48	Challenge	4.05	0.47
8	Work Scheduling Autonomy	3.80	0.58	Challenge	4.00	0.46	Social Responsibility[1]	4.04	0.38
9	Decision Making Autonomy	3.78	0.42	Decision Making Autonomy	3.97	0.48	Innovation Orientation	4.01	0.48
10	Innovation Orientation	3.71	0.59	Social Support	3.88	0.46	Social Support	3.81	0.44
11	Feedback Seeking Behaviour	3.70	0.53	Innovation Orientation	3.79	0.57	Decision Making Autonomy	3.78	0.42
12	Temporal and Spatial Flexibility	3.58	0.52	Feedback Seeking Behaviour	3.71	0.57	Feedback Seeking Behaviour	3.67	0.75
13	Task Significance	3.51	0.74	Task Significance	3.40	0.66	Task Significance	3.48	0.50
14	Pay Preferences	3.30	0.54	Promotion Opportunities	3.03	0.54	Promotion Opportunities	3.15	0.54
15	Promotion Opportunities	3.25	0.60						

[1] Should be interpreted carefully due to low scale reliability

Appendix C: Overview of the preferred benefits

Table 7: overview of the preferred benefits according to the students

Preferred benefits according to the students

Rank	Benefits	Number of times selected	% of sample
1	A compensation for overtime hours in time of money.	100	73.5%
2	The opportunity to choose your holidays (for example based on your social cultural background)	87	64.0%
3	The opportunity to temporary work abroad	80	58.8%
4	Free coffee and tea	77	56.6%
5	A personal training and development plan/ career path	76	55.9%
6	Flex Time arrangements	75	55.1%
7	Year-end bonus (the 500,- bonus)	75	55.1%
8	The possibility to work at home.	71	52.2%
9	The possibility to change overtime hours into money and vice versa.	68	50.0%
10	Commuting cost allowance (reiskostenvergoeding)	64	47.1%
11	Temporary (international) exchanges with the aim to gather new knowledge and share information.	58	42.6%
12	Offering relatively cheap collective insurances (also for directly related family members).	57	41.9%
13	Flexible workplaces in a quiet surrounding	55	40.4%
14	Informal trips (national or international) that will take one or several days	50	36.8%
15	The opportunity for a sabbatical leave	46	33.8%
16	Opportunities for sport offered by the organisation (e.g. sport facilitites at the office building or a membership with a sport-gym)	40	29.4%
17	The opportunity to participate in job rotation programs.	40	29.4%
18	Childcare opportunities near your office or house with a payment/contribution of your employer	32	23.5%
19	Flexbudger: offers the opportunity to change your secondary benefits yearly	30	22.1%
20	Providing new media (e.g. tabletpc or a smartphone) for private use.	29	21.3%
21	The opportunity to individually arrange your pension.	24	17.6%
22	Bicycle arrangement (fietsplan)	22	16.2%
23	The opportunity for an electric car with private usage against a fice amount of money per month.	20	14.7%
24	Daily services (activities) in or near the office building such as a laundry, shopping center, or child care.	17	12.5%
25	Vitality programs (e.g., feel good, stop smoking, lose weight, or healthcheck).	8	5.9%
26	**Other:** 1. Attemp to boost creativity/own input (e.g. Friday afternoon projects) 2. Yearly feedback both ways 1 on 1 meetings with supervisors A car Compant should have good health care facilities like they can should cover medical expenses of a person through some cooperative insurance Good and affordable lunch offers Fuel card (Tankpas) Permanent contract, no flexible work places	6	4.4%

Table 8: overview of the preferred benefits according to the engineers and SDE of CX

Preferred benefits according to the engineers and SDE of Company X

Rank	Benefits	Number of times selected	% of samples
1	Flex Time arrangements	135	92.5%
2	The possibility to work at home.	118	80.8%
3	A personal training and development plan/ career path	108	74.0%
4	Year-end bonus (the 500,- bonus)	104	71.2%
5	Commuting cost allowance (reiskostenvergoeding)	93	63.7%
6	Flexibility to exchange time for money and vice versa (TVT, meerdagen, vakantiedagen)	89	61.0%
7	Offering collective insurances (also for directly related family members).	75	51.4%
8	Providing new media (e.g. tablets, laptop, or a smartphone) for organisational and private use.	72	49.3%
9	Opportunities for sport offered by the organisation (e.g. sport facilitites at the office building or a membership with a sport-gym)	64	43.8%
10	Free coffee and tea	60	41.1%
11	The opportunity to temporary work abroad	58	39.7%
12	Flexbudger: offers the opportunity to change your secondary benefits yearly	57	39.0%
13	The opportunity to participate in job rotation programs.	55	37.7%
14	The opportunity for an electric car with private usage against a fice amount of money per month.	52	35.6%
15	If possible, the opportunity to individually arrange your pension.	50	34.2%
16	Business outing for one or several days/ (bedrijfsuitje).	49	33.6%
17	Bicycle arrangement (fietsplan)	44	30.1%
18	Employer contribution for childcare	40	27.4%
19	Vitality programs (e.g., feel good, stop smoking, lose weight, or healthcheck).	29	19.9%
20	Flexible workplaces in a quiet surrounding	27	18.5%
21	The opportunity for a sabbatical leave	20	13.7%
22	The opportunity to choose your holidays (for example based on your social cultural background)	19	13.0%
23	Childcare opportunities near your office or house.	14	9.6%
24	Daily services (activities) in or near the office building such as a laundry, shopping center, or child care.	12	8.2%
25	**Other:**	16	11.0%
	Contribution in sports outside of the company, media arrangement (media-plan), company car		
	Better coffee and tea		
	Cost allowance to live nearby the company		
	Company Car		
	Company car (non-electric or sustainable!)		
	Fair profit sharing for all (todays budget to low and for top management vs rest is out of balance)		
	Fix the kapuren dilemma: I feel robbed when I have kapuren & vakantieuren.		
	Flex time: possibility to work 40 hours in 4 days and have the 5th day off.		
	Flexibility to plan personal holidays, for both period and duration		
	I can only select 4; not 10		
	Ik vind 10 stuks erg veel!		
	Kantine prijzen omlaag/ groter assortiment		
	Modern workplace (adequate climate controled) in a quite surrounding with direct daylight		
	Opportunity to work while travelling by train (deducting time worked in train from regular working hours)		
	Rather then bonus, increase salary ‖ Add Money for Overhours, instead of killing overtime.. ‖		
	When using public transportation: Ability use part of this traveling time as work time		

Table 9: overview of the preferred benefits according to the Engineers

Preferred benefits according to the engineering sample of Company X

Rank	Benefits	Number of times	% of sample
1	Flex Time arrangements	85	94.4%
2	The possibility to work at home.	70	77.8%
3	A personal training and development plan/ career path	64	71.1%
4	Year-end bonus (the 500,- bonus)	64	71.1%
5	Commuting cost allowance (reiskostenvergoeding)	60	66.7%
6	Flexibility to exchange time for money and vice versa (TVT, meerdagen, vakantiedagen)	52	57.8%
7	Offering collective insurances (also for directly related family members).	51	56.7%
8	Opportunities for sport offered by the organisation (e.g. sport facilitites at the office building or a members	44	48.9%
9	Providing new media (e.g. tablets, laptop, or a smartphone) for organisational and private use.	43	47.8%
10	Business outing for one or several days/ (bedrijfsuitje).	36	40.0%
11	Bicycle arrangement (fietsplan)	35	38.9%
12	The opportunity to participate in job rotation programs.	34	37.8%
13	The opportunity to temporary work abroad	33	36.7%
14	If possible, the opportunity to individually arrange your pension.	33	36.7%
15	Free coffee and tea	31	34.4%
16	Flexbudget: offers the opportunity to change your secondary benefits yearly	27	30.0%
17	The opportunity for an electric car with private usage against a fice amount of money per month.	27	30.0%
18	Employer contribution for childcare	21	23.3%
19	Vitality programs (e.g., feel good, stop smoking, lose weight, or healthcheck).	21	23.3%
20	Flexible workplaces in a quiet surrounding	18	20.0%
21	The opportunity for a sabbatical leave	15	16.7%
22	The opportunity to choose your holidays (for example based on your social cultural background)	11	12.2%
23	Childcare opportunities near your office or house.	8	8.9%
24	Daily services (activities) in or near the office building such as a laundry, shopping center, or child care.	6	6.7%

Table 10: overview of the preferred benefits according to the Support Department Employees

Preferred benefits according to the employees of the SDE of Company X

Rank	Benefits	Number of times selected	% of sample
1	Flex Time arrangements	50	89.3%
2	The possibility to work at home.	48	85.7%
3	A personal training and development plan/ career path	44	78.6%
4	Year-end bonus (the 500,- bonus)	40	71.4%
5	Flexibility to exchange time for money and vice versa (TVT, meerdagen, vakantiedagen)	37	66.1%
6	Commuting cost allowance (reiskostenvergoeding)	33	58.9%
7	Flexbudget: offers the opportunity to change your secondary benefits yearly	30	53.6%
8	Free coffee and tea	29	51.8%
9	Providing new media (e.g. tablets, laptop, or a smartphone) for organisational and private use.	29	51.8%
10	The opportunity to temporary work abroad	25	44.6%
11	The opportunity for an electric car with private usage against a fice amount of money per month.	25	44.6%
12	Offering collective insurances (also for directly related family members).	24	42.9%
13	The opportunity to participate in job rotation programs.	21	37.5%
14	Opportunities for sport offered by the organisation (e.g. sport facilitites at the office building or a members	20	35.7%
15	Employer contribution for childcare	19	33.9%
16	If possible, the opportunity to individually arrange your pension.	17	30.4%
17	Business outing for one or several days/ (bedrijfsuitje).	13	23.2%
18	Bicycle arrangement (fietsplan)	9	16.1%
19	Flexible workplaces in a quiet surrounding	9	16.1%
20	Vitality programs (e.g., feel good, stop smoking, lose weight, or healthcheck).	8	14.3%
21	The opportunity to choose your holidays (for example based on your social cultural background)	8	14.3%
22	Childcare opportunities near your office or house.	6	10.7%
23	Daily services (activities) in or near the office building such as a laundry, shopping center, or child care.	6	10.7%
24	The opportunity for a sabbatical leave	5	8.9%

Appendix D: The students questionnaire

The most valuable work characteristics during the job orientation process

First of all thank you for filling in this questionnaire!

The questionnaire consists of several questions related to job and organizational characteristics. The questions have to be rated from "strongly agree" to "strongly disagree" or "very important" to "very unimportant". There are no good or wrong answers and it is crucial to finish the whole questionnaire. The questionnaire will take about 15 minutes and your privacy will be guaranteed.

Reward:

First of all 3 VVV Irischeques with a value of 25 euro will be randomly assigned to students who handed in a complete questionnaire.

In addition to the Gift cards the second reward consists of an introduction day at . The introduction day will consists of a tour through the organization, a mini assessment, and it is possible to submit for a job interview or Curriculum Vitae check on which you will receive feedback from the recruiter of . In brief, the introduction day will introduce to you and offers the opportunity to experience how to get well prepared for a job interview in the future.

If you want to make a chance on one of the rewards, then enter your E-mailadress in the commentbox below.

E-mail adress:

General questions

Remember, it is important that you will finish the questionnaire in order to make a chance on the rewards that will be randomly assigned. The questionnaire approximately takes 15 minutes.

Gender:

◯ Male ◯ Female

Year of birth:

University of ..

◯ Delft ◯ Eindhoven ◯ Enschede ◯ Saxion (Hogescholen)

Average study result in the previous two years of study:

◯ 5 ◯ 7 ◯ 9
◯ 6 ◯ 8 ◯ >9

Do you have Children?

◯ Yes ◯ No

In choosing a job ..

	Very unimportant	Unimportant	Neutral	Important	Very important
travel duration is:	◯	◯	◯	◯	◯
the opportunities to commute (travel between home and work) by the use of public transport connection are:	◯	◯	◯	◯	◯

How long are you maximally willing to commute from your home to work?

◯ 0 -15 minutes ◯ 16 - 30 minutes ◯ 31 - 45 minutes ◯ 46 - 60 minutes ◯ 61 - 90 minutes ◯ > 91 minutes

I prefer a job at an international oriented organisation

◯ Strongly Disagree ◯ Disagree ◯ Neutral ◯ Agree ◯ Strongly Agree

Type of Work

In my (future) job I want ..

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
.. to try to solve complex problems.	◯	◯	◯	◯	◯
.. to solve difficult problems, because the more difficult the problem, the more I enjoy trying to solve it.	◯	◯	◯	◯	◯
.. my work to provide me with opportunities for increasing my knowledge and skills.	◯	◯	◯	◯	◯
.. curiosity to be the driving force behind much of what I do.	◯	◯	◯	◯	◯
.. to tackle problems that are completely new to me.	◯	◯	◯	◯	◯
.. work I know I can do well over work that stretches my abilities.	◯	◯	◯	◯	◯
.. relatively simple, straightforward tasks.	◯	◯	◯	◯	◯
.. that the results of my work are likely to significantly affect the lives of other people.	◯	◯	◯	◯	◯
.. my work to be very significant and important in the broader scheme of things.	◯	◯	◯	◯	◯
.. a large impact on people outside the organisation.	◯	◯	◯	◯	◯
.. the work performed should have a significant impact on people outside the organisation.	◯	◯	◯	◯	◯
.. to make my own decisions about how to schedule my work.	◯	◯	◯	◯	◯
.. to decide on the order in which things are done on the job.	◯	◯	◯	◯	◯
.. to plan how I do my work.	◯	◯	◯	◯	◯
.. a chance to use my personal initiative or judgement in carrying out the work.	◯	◯	◯	◯	◯
.. to make a lot of decisions on my own.	◯	◯	◯	◯	◯
.. significant autonomy in making decisions.	◯	◯	◯	◯	◯
.. to make decisions about what methods I use to complete my work.	◯	◯	◯	◯	◯
.. considerable opportunity for independence and freedom in how I do the work.	◯	◯	◯	◯	◯
.. to decide on my own how to go about doing my work.	◯	◯	◯	◯	◯

Leadership and promotion opportunities

I want a manager who ..

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
.. talks with subordinates about their important values and beliefs.	◯	◯	◯	◯	◯
.. challenges subordinates to think about problems in new ways.	◯	◯	◯	◯	◯
.. has a vision and imagination of the future.	◯	◯	◯	◯	◯
.. is always seeking new opportunities for the organisation.	◯	◯	◯	◯	◯
.. encourages subordinates to be independent thinkers.	◯	◯	◯	◯	◯
.. is able to get others enthousiastic about his/her ideas.	◯	◯	◯	◯	◯
.. involves subordinates in decisions that affect their work.	◯	◯	◯	◯	◯
.. encourages subordinates to develop their potential.	◯	◯	◯	◯	◯
.. mobilizes a collective sense of mission.	◯	◯	◯	◯	◯
.. displays conviction in his/her ideals, beliefs, and values.	◯	◯	◯	◯	◯
.. delegates challenging responsibilities to subordinates.	◯	◯	◯	◯	◯
.. ensures that agreements are being kept.	◯	◯	◯	◯	◯
.. can be believed and relied upon to keep his/her word.	◯	◯	◯	◯	◯
.. can be relied on to meet obligations.	◯	◯	◯	◯	◯
.. does not criticize subordinates without good reason.	◯	◯	◯	◯	◯
.. highly values clear agreements and fair pay.	◯	◯	◯	◯	◯
.. ensures that conditions and resources are such that subordinates are able to do their work.	◯	◯	◯	◯	◯

In my (future) job ..

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
.. I want a job where there are lots of opportunities for upward mobility..	◯	◯	◯	◯	◯
.. I don't want to work in a "flattened" organization where most of the career moves people make are lateral instead of upward.	◯	◯	◯	◯	◯
.. I will be disappointed if I haven't had a promotion within a year of leaving college.	◯	◯	◯	◯	◯
.. I will be disappointed if I haven't had a promotion within two years of leaving college.	◯	◯	◯	◯	◯
.. promising to improve my "employability" through job rotation and training is not a substitute for promotions.	◯	◯	◯	◯	◯
.. I am likely to try to move to another company within the first two years when I find myself in a firm with slow promotions,.	◯	◯	◯	◯	◯
.. I don't want to work for an organization where I can't move up very rapidly.	◯	◯	◯	◯	◯

Work Environment

In my (future) job I want ..

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
.. the opportunity to occasionally work from home.	◯	◯	◯	◯	◯
.. the opportunity to take days off for a sick child without losing pay or vacation time.	◯	◯	◯	◯	◯
.. the opportunity to choose my own start and end times.	◯	◯	◯	◯	◯
.. the opportunity to work a compressed work week.	◯	◯	◯	◯	◯
.. the opportunity to change my daily schedule.	◯	◯	◯	◯	◯
.. the opportunity to decide when to take breaks.	◯	◯	◯	◯	◯
.. the opportunity to develop close friendships in my job.	◯	◯	◯	◯	◯
.. the chance to get to know other people in my job.	◯	◯	◯	◯	◯
.. the opportunity to meet with others in my work.	◯	◯	◯	◯	◯
.. a supervisor who is concerned about the welfare of the people that work for him/her.	◯	◯	◯	◯	◯
.. the people I work with to take a personal interest in me.	◯	◯	◯	◯	◯
.. the people I work with that are friendly.	◯	◯	◯	◯	◯
.. help in order to decide which skills to improve.	◯	◯	◯	◯	◯
.. learning and development activities designed to develop a range of skills.	◯	◯	◯	◯	◯
.. it to provide me training in advanced skills.	◯	◯	◯	◯	◯
.. the willingness to change the learning and development activities to suit my needs.	◯	◯	◯	◯	◯
.. to be encouraged to make all kinds of proposals for change.	◯	◯	◯	◯	◯
.. to be expected to look for new opportunities for the organisations.	◯	◯	◯	◯	◯
.. subordinates that come up with ideas themselves to improve the organisation.	◯	◯	◯	◯	◯

Work Environment

I prefer an organisation

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
.. that is being reflective.	◯	◯	◯	◯	◯
.. that has a good reputation.	◯	◯	◯	◯	◯
.. that is being socially responsible.	◯	◯	◯	◯	◯
.. that has a clear guiding philosophy.	◯	◯	◯	◯	◯

In my (future) job I want ..

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
.. supervisors that appreciate the work I do.	◯	◯	◯	◯	◯
.. to be praised and recognized for my accomplishments because it makes me want to do even better.	◯	◯	◯	◯	◯
.. rather have money than praise for a job well done.	◯	◯	◯	◯	◯
.. managers who often use praise as a substitute for paying people what they're really worth.	◯	◯	◯	◯	◯
.. my pay to be determined strictly by my individual performance.	◯	◯	◯	◯	◯
.. to have merit pay rather then seniority-based pay or equal pay for everyone.	◯	◯	◯	◯	◯
.. my pay to be individually based because I usually work a lot harder than other people.	◯	◯	◯	◯	◯
.. to work for a company where cooperative behaviours figure into my merit increases.	◯	◯	◯	◯	◯
.. some of my pay to be based on teamwork and cooperation.	◯	◯	◯	◯	◯
.. a part of my pay to be based on my work group's performance.	◯	◯	◯	◯	◯
.. to work for a company where cooperative behaviours figure into my merit increases.	◯	◯	◯	◯	◯
.. to directly ask my manager for information concerning my performance.	◯	◯	◯	◯	◯
.. to directly ask my manager for informal appraisals (evaluation) of my work.	◯	◯	◯	◯	◯
.. to seek information from peers/co-workers about my performance.	◯	◯	◯	◯	◯
.. to directly ask peers/co-workers for feedback concerning work in progress.	◯	◯	◯	◯	◯

Secondary Benefits

In recent years the secondary benefits are becoming more and more important. Secondary benefits are the benefits you can/will receive in addition to your salary. Examples of secondary benefits are presented in question 2 on this page. As a result of the increased importance of secondary benefits this questionnaire will end with a few questions about the secondary benefits and your preferences!

How important are the secondary benefits of an organisation in the job search process of an applicant in comparison with the previous mentioned aspects in this questionnaire? (e.g. leadership, learning and development opportunities, challenge, task significance, promotion opportunities, praise and recognition, organisational culture, flexibility, and autonomy)

Very Unimportant	Unimportant	Neutral	Important	Very Important
○	○	○	○	○

Please select the ten most important organisational benefits from the list below.

- ☐ Flex time arrangements
- ☐ Bicycle arrangement (fietsplan)
- ☐ The opportunity to individually arrange your pension.
- ☐ Offering relatively cheap collective insurances (also for directly related family members)
- ☐ The opportunity to participate in job rotation programs.
- ☐ Providing new media (e.g. tabletpc or a smartphone) for private use.
- ☐ The possibility to work at home
- ☐ The opportunity for a sabbatical leave
- ☐ The opportunity to temporary work abroad.
- ☐ Opportunities for sport offered by the organisation (e.g. sport facilities at the office building or a membership with a sport-gym)
- ☐ Childcare opportunities near your office or house with a payment/contribution of your employer
- ☐ Flexible workplaces in a quiet surrounding
- ☐ Vitality Programs (eg, Feel good, stop smoking, lose weight or healthcheck).
- ☐ Daily services (activities) in or near the office building such as a laundry, shopping center or child care.
- ☐ The opportunity to choose your holidays (for example based on your social cultural background)
- ☐ Free coffee and tea
- ☐ Informal trips (national or international) that will take one or several days.
- ☐ A personal training and development plan or career path.
- ☐ Travel reimbursement
- ☐ Year-end bonus
- ☐ The possibility to change overtime hours into money and vice versa.
- ☐ A compensation for overtime hours in time or money.
- ☐ The opportunity for an electric car with private usage against a fixed amount of money per month.
- ☐ Flexbudget: offers the opportunity to change your secundairy benefits yearly.
- ☐ Temporary (international) exchanges with the aim to gather new knowledge and share information.
- ☐ Other (please specify)

Thanks a lot for filling in this questionnaire! If you want to receive an overview of the questionnaire results, please enter your E-mailadres in the textbox below;