

Master Thesis - Erasmus Universiteit Rotterdam

# Personality and performance evaluation

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**ABSTRACT.** Existing studies found extroverted employees were higher rated than introverted employees. However, personality bias might exist in performance evaluation. Therefore, this thesis examines the interaction effect of the personality of the employee and the personality of the supervisor on performance evaluation. Scenario-based experiment through survey is used to collect the data. The results support my hypothesis; given similar level of performances, both introverted and extroverted supervisor evaluated the extroverted employee higher than the introverted employee, however, the effect of the extroverted supervisor is stronger than the effect of the introverted supervisor on the performance evaluation indicating that extroverted supervisors are more biased than introverted employee. The findings of this thesis contribute to our understanding of why certain employees are higher rated.

Keywords: performance evaluation, personality bias, extraversion

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## **Preface**

This thesis has been written for the purpose of completing my Master program Auditing, Accounting and Control at Erasmus University Rotterdam. The subject of this thesis falls within the field of Management Accounting. The aim of writing this thesis is to conduct the research independently and at the same time to develop a deeper knowledge, understanding and to gain deeper insight in the chosen subject.

I would like to take the opportunity to thank my supervisor, Dr. Victor Maas for giving me helpful guide, recommendations and comments. I really appreciate his quick responses to emails. Also his written guidelines are very useful which helped me a lot in writing a structured Msc thesis, conducting statistical tests and interpreting the results in a right way. I really learned a lot.

My second word of thanks goes to the tutorial lecturers of the Finance courses for giving me the permission to hand out my survey to their students. At last I would like to thank my family and friends for filling in my survey.

Hillam Cheung

Rotterdam, July 2013

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## 1. Introduction

Nowadays most of the organizations use performance appraisals to evaluate the performances of employees. These performance appraisals are used to identify candidates for promotion and target training needs, foster career development and to provide critical feedback about performance in order to improve the performance in the future (Halpert et al, 1993). To score high ratings employees should possess high level of skills and performances in order to be recognized by supervisors. In practice however personality could probably have more impact on the performance evaluation than actual levels of skills and performance. Since subjective ratings are based on human's opinion, some employees could be more favorable than others and are therefore being high rated (Ittner et al, 2003). On the other hand some personalities could be perceived in a negative light (Richmond and Roach, 1992) Therefore, no matter how much effort an employee exerts, his/her performance might not be recognized. Because personality is inborn or has been influenced slightly by environment during childhood (Gretarsson and Gelfand, 1988) employees can't help to have a personality that is perceived negatively by others and cannot do anything against the negative perception. Therefore, my thesis will examine whether personality bias exist in performance evaluation and if so, I hope that organizations pay attention on this problem in hope that every type employee will be treated fairly in the future by means of receiving fair performance ratings that are, at least, not influenced by his/ her personality.

In this section the research question will be formulated and the reasons for why answering the research question is important will be discussed. Then, the current state of our knowledge with regard to the answer of the research question will be addressed by reviewing the existing literature; the research method and empirical findings will be briefly described and explained. At last, this section ends with the contribution and a description of the structure of this thesis.

### 1.1 Research question

This thesis examines whether personality bias exists in performance evaluation. Specifically, I investigate the effect of personal characteristics, with emphasis on the level of extraversion, of both the rater (supervisor) and ratee (employee) on performance evaluation. The research question is as follows:

*“To what extent influence the personality of both employee and supervisor the performance evaluation?”*

To be more clearly, independent and dependent variables are shown in the figure below.

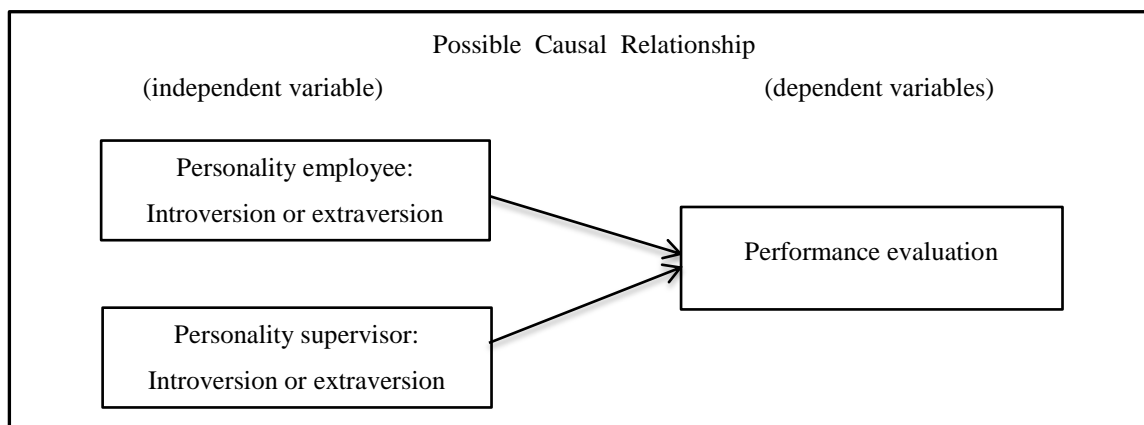


Fig. 1.1 Variables research question

It is important to investigate the existence of personality bias in performance evaluation because high performance of certain employees might probably not be recognized and will be unfairly rated no matter how much effort an employee has exerted. The whole performance appraisal system will be perceived as unfair and thus ineffective. As consequences, motivation of employees will probably be affected. To increase motivation of employees, basically, incentives schemes will be implemented in order to improve their performance and behavior in line with the objectives of the organization. However, personality bias will disrupt the link between performance and pay/desire outcome. According to the expectancy theory, employee will not be motivated. As consequences, the whole incentives scheme will fail by means that employees won't be motivated as they perceive their rating as unfair and will react against the compensation (Cohen-Charash and Spector 2001; Colquitt et al. 2001).

In summary, since performances will not be recognized and/or ratings are inaccurate due to personality bias in performance evaluation, employees will not be motivated, no matter how attractive the compensation is. Personality biases in performance evaluation will not only negatively affect the effectiveness of performance appraisal system, but also the effectiveness of the incentive scheme. Therefore, organization should be aware of this problem that may occur.

## **1.2 Contribution**

A few studies have examined the relation between extraversion/introversion and job performance. Barrack and Mount (1991) showed in their meta-analysis based on 117 studies that extraversion is related to job performance of sales men and managers. Similar findings have been found by Longenecker et al.(1992) who found that extroverted sales men are being high rated than introverted sales men. The study of Ployhart et al. (2001) also supports that extraversion is a predictor of job performance, more specifically; they found that extraversion and openness are the most predictive of maximum leadership performance. Moreover, Furnham and Stringfield (1992) have also focused on the relationship between personality and job performance of European managers. Their sample consists of employees who work for an international airline and come from several departments like marketing, engineering, accounts and operations. These employees were rated on customer focus, decision making, team work, communication. Supervisors were also asked to provide an overall grade. The results show extroverted European managers were high rated than introverted European managers. Another study, Tziner et al. (2002) examined the relation between employee's personality and the performance rating. The sample of this study consists of 450 Israeli military officers who are working in various fields, including finance, maintenance, construction, administration, training, welfare, research, engineering, and software. The authors found that the higher the level of extraversion of the employee, the higher his or her performance was rated by the superior.

In summary, the aforementioned studies indicate extroverts outperform introverts as extroverts are higher rated than introverts in many fields. Remarkably, most of the studies used the same research method (Furnham and Stringfield, 1992; Tziner et al. 2002). At first, questionnaires were sent to the employees with request to fill in questions regarding the personality. Then, given a period after the questionnaires are filled out, evaluation forms were sent to the supervisors with request to rate the employees). An important question arises in this regard: Did extroverts really outperform introverts or did they get high scores just because of their personality? The answer to this question could not be derived from the aforementioned studies. Since these studies did not reveal the actual performances of extroverts and introverts, there is a possibility that the supervisor has given extroverts higher rating because extroverts are more favorable since they are more social, energetic and talkative than in-

troverts. In other words, there is a possibility that managers were biased. Therefore, I think prior studies contain a deficiency as it is still unclear whether extroverts outperform introverts or did personality bias play a role in explaining the relationship between the high performance ratings and extroverts? I want to contribute to the existing literature by addressing this question.

Furthermore, this thesis contributes to the effectiveness of performance evaluation. As mentioned before, performance appraisal can be perceived as unfair and inaccurate by employees which weakens the performance evaluation system. This, in turn, leads to ineffective incentive system as compensation is based on (inaccurate) ratings that are provided through performance evaluation. Thus, understanding the relationship between performance evaluation and the personality of the employee and the rater, the effectiveness of performance evaluation can be improved, which in turn leads to an improving of the effectiveness of incentives system.

### **1.3 Research design and results**

To answer the research question, data is collected using the scenario-based experiment through questionnaires. In this experiment, I created two scenarios in which the personality of the employee is manipulated (extraversion versus introversion). Then, I provided a performance appraisal in which the actual performances of the employee are shown. Participants were asked to give a final grade. At last, participants were asked to fill in the questionnaire to indicate their personality.

The results show a significant effect of personality of employee on performance evaluation; given similar level of performances, extroverted employee was higher rated than introverted employee. However, the ratings do not differ that much. Moreover, the results show the effect of personality of employee on performance evaluation depends on the personality of the rater; although both introverted and extroverted supervisor evaluated the extroverted employee higher than the introverted employee, the effect of the extroverted supervisor is stronger than the effect of the introverted supervisor on the performance evaluation indicating that extroverted supervisors are more biased.

### **1.5 Structure**

This thesis is structured as follows. In the next chapter more insight will be provided into variables of the research question. Then, statements are hypothesized based on empirical studies and psychological behavior theories. In third chapter I will pay attention on the research method that will be used to collect the data for answering the research question. After the data have been collected, results will be analyzed and interpreted in chapter four and conclusion can be drawn in chapter 5. In the last chapter I will discuss the limitations of my thesis.

## 2. Theoretical perspective

In this section more insight into the variables will be provided. First I will introduce the personality extraversion and introversion by providing a brief description. Then, relationship between the variables will be explained through several studies and theories.

### 2.2 Explanation dependent and independent variable

This paragraph describes the variables briefly. First, a distinction between extraversion and introversion will be made and explained. Then, the dependent variable 'performance ratings' will be described.

#### 2.1.1 Independent variable: extraversion versus introversion

One of the most influential theories of extraversion-introversion is the theory of Eysenck (1967). According to the description of Eysenck, outgoing, sociable and excitement-seeking from environment are the characteristics of extroverts. In contrast to extroverts, Eysenck describes introverts as quiet and introspective; introverts do not like to have people around them. The differences in behavior of introverts and extroverts could be explained by the theory of arousal which is also developed by Eysenck (1985). The arousal theory assumes extroverts have relatively low level of arousal in contrast to introverts who have high level of arousal. Because of the low level of arousal, extroverts are seeking external stimulation while introverts have the tendency to avoid external stimulation. These theoretical assumptions have been empirically examined by psychologist. For instance, Campbell and Hawley (1982) predicted that extroverts would desire an open and large study location where socializing is allowed and both auditory and visual stimulation is high whereas introverts prefer study locations that minimize intense external stimulation. Their results of their study support their predictions and thus support the theory of Eysenck.

Moreover, many studies paid attention on personality traits that are correlated to extraversion-introversion. I want to discuss the correlated personality traits to provide better understanding of the behavior of introverts and extroverts. Based on a sample of 280 participants, John (1990) shows a number of personality traits that are correlated with extraversion: talkative (.85), assertive (.83), active (.82), energetic (.82), outgoing (.82), outspoken (.80), dominant (.79), forceful (.73), enthusiastic (.73), show-off (.68), sociable (.68), spunky (.64), adventurous (.64), noisy (.62) and bossy (.58). In contrast to extraversion, introversion are correlated to quiet (-.83), reserved (-.80), shy (-.75), silent (-.71), withdrawn (-.67) and retiring (-.66). Similar findings have been found by Carment et al. (1965) who found that introverts are less willing to communicate (thus quiet). Moreover, Richmond and Roach (1992) argued that individuals with low willingness to communicate are perceived as less competent, less sociable and less task attractive and are therefore considered at risk in organizational settings. The fact is supervisor perceives quiet individuals as expendable and thus damaging the supervisors' relationship (Daly, Richmond and Leth, 1979). Because of the managerial dislike, Richmond and Roach (1992) argued that quiet individuals may be dismissed.

Based on the aforementioned studies, it seems like introverts are not favorable in organization because of their personality. However, the empirical study of Fanning (2000) found some conflicting evidences regarding the perception of asocial behavior of introverts. In this study, two introverted participants were interviewed how they experienced situations that require to exhibit extroverted behavior. Although it has been found that introverts

have to exert more effort and energy to act like an extrovert compared to extroverts<sup>1</sup>, the author found that introverts were quite capable of being outgoing and friendly. Obviously, despite the shyness and stillness of introverts, introverts could exhibit extroverted behavior. Moreover, in contrast to the study of Richmond and Roach (1992) who argued that quiet individuals are perceived as less task attractive, the theory of Eysenck asserts that introverts perform better on vigilance task than extroverts because of their high level of arousal. The fact is that vigilance tasks can be seen as task that has low level of stimulation. On the other hand, extroverts (who possess low level of arousal) will perceive the vigilance task to be boring and not interesting. Empirical studies found evidence that support these assumptions. For example, Davies and Parasuraman (1982) found that extroverts make more mistakes than introverts on long vigilance tasks.

More conflicting evidences have been found regarding the view on introverts as expendable. Because of the high level of arousal, extroverts are positively correlated to the likelihood of absenteeism (Darviri & Woods, 2006). According to Eysenck (1967), extroverts tend to seek excitement from environment; activities outside work are therefore very interesting to them. Because of the greater likelihood of absenteeism, extroverts can thus be seen as expendable since extra time should be spend on work that is not done because of the absenteeism of extroverts. In short as we have seen from the literature, there are conflicting perceptions and findings regarding the personality extraversion-introversion.

### **2.1.2 Dependent variable: performance evaluation**

Performance evaluation indicates how well the ratee (e.g. employee) has performed in a given period. The objective of performance evaluation is to identify candidates for promotion and target training needs, foster career development, provide critical feedback about performance in order to improve performances in the future (Halpert et al, 1993). Performance appraisals are used to evaluate the performances in which objective measures (e.g. return on investment, profit, sales etc.) and/or subjective measures (e.g. customer satisfaction, teamwork, professionalism etc.) are used to rate the work performance of employees. Several studies have focused on the potential biases that may occur in subjective performance evaluation. Biases due to gender of both the evaluator and the employee (Maas and Torres-González, 2011), race (DuBois et al., 1993; Kraiger and Ford, 1985), age (Pulakos et al,1989) in subjective performance evaluation have all been examined. However, despite the biases in subjective performance evaluation, many organizations still use both measures in performance appraisal (Grund and Przemek, 2012) as objective measures do not reflect all task and performance of an employee (Holmstrom and Milgrom, 1991).

## **2.2 Theories and empirical studies: development of hypotheses**

In this paragraph the relationship between the independent and dependent variables will be discussed through empirical studies and psychological behavioral theories. Some factors have been found in literature and studies that support my hypothesis that predicts given similar level of performances, performance evaluation of extroverted employee differ from the performance evaluation of introverted employee. These factors will be discussed in more details in the next subparagraph.

Furthermore, since I predict there are differences in performance evaluation between extroverts and introverts, I will examine whether these differences could be explained by the personality of the rater. So this research also emphasizes the distinction between performance evaluation by introverted and extroverted supervisors since

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<sup>1</sup> To exhibit extroverted behavior, an introvert experiences the four phase cycle: Preparation, Experience, Recovery and Reflection



personality bias probably depends on the type of supervisor. The second subparagraph will discuss this relationship in more details.

### **2.2.1 Personality employee and performance evaluation**

This subparagraph discussed the factors that support my view on the relation between the personality of the employee and his/ her performance evaluation. These factors are impression, the intention to promote an employee, favoritism and avoidance of confrontation costs. These factors will be discussed in more details below.

#### **Impression**

As discussed in the literature review, Tziner et al. (2002) found the more extrovert an individual, the higher his/her performance was rated by the supervisor. The authors explained this finding by suggesting that extroverts are better in 'selling' their performances to supervisors and are also better skilled in creating good impression than introverts. Impression could play an important role in performance evaluations as performance ratings could be influenced by the overall impressions of the performer, leading to unintended biases in judgments and evaluations. This effect is so called the halo effect (Balzer and Sulsky, 1992). Since it has been found that introverts are shyer and scores higher on social anxiety compared to extroverts (Pilkonis, 1977), I do have the same assumption as Tziner et al (2002): extrovert are better skilled in creating positive impression. Because of the positive impression and the existence of the halo effect, I predict that the performance evaluation of the extroverts is higher than the performance ratings of introverts given similar level of performance.

#### **Intention promotion**

Next to unintended biases, intended biases might also exist. A number of studies found a positive effect of extroverts on promotion (Boudreau et al., 2001). Moreover, there has been found that extroverts have higher positions in management (Moutafi et al., 2007). However, none of the studies examined the relation between personality and performance evaluation; there is a possibility that extroverts were given high performance ratings just based on their personality. Specifically, from the perspective of supervisors, extroverts might be a better candidate for promotion as their personality traits fit the stereotype of leaders. The fact is that extroverts behave more assertively than introverts (Lobel, 1981) and there has been found that introverts are correlated with withdrawn, shy and reserved (John, 1990). (See previous section for correlated traits). Because of the personality, supervisors might therefore have more confident in extroverts than introverts and might perceive extroverts as potential managers in the future. The latter is supported by the study of Ployhart et al. (2001) who found that extraversion and openness were the most predictive of maximum leadership performance. Barrack and Mount (1991) also found that extraversion is related to job performance of managers. Moreover, it has also been found that the more a person talks, the more likely the person is perceived to hold leadership (Hayes and Sievers, 1972). Again, these results indicate that extroverts are more likely to be a potential leader as talkative (.85) is correlated to extraversion (John, 1990). In contrast, introverts are more silent, shy (John, 1990), less willing to communicate and are therefore perceived as less desirable as a leader (Richmond and Roach, 1992). I predict, therefore, extroverted will get higher scores, than introverts, for the purpose of promotion.

**Favoritism / relationship between supervisor and subordinates**

Favoritism could also play a role in explaining the performance ratings of an employee. Existing studies found the existence of favoritism in performance evaluation by showing that certain managers were being high rated not because of their performance but just because they are someone's favorite (Wayne and Ferris, 1990; Ittner et al. 2003). Staw, Sutton, and Pelled (1994) found that employee with high level of positive affectivity will receive more favorable supervisor evaluations. According Watson & Clark (1984) extroverts are likely to have higher positive affectivity than introverts. Taken the findings of the two studies together, extroverts receive more favorable supervisor evaluation because of the positive affectivity which means that extroverts are being high rated not because of their actual performance. Furthermore, Lawler (1990) found evidence that managers do not want to provide accurate performance ratings as it will have a negative influence on their relationships with subordinates. Moreover, Bol (2011) found that managers give less compressed and less lenient ratings when the employee-manager relationship is weaker. Based on these two studies and the existence of favoritism I assume the relationship between supervisor and his favorite subordinate is good or at least not bad.

Taken all the results together, I predict extroverts will be higher rated rather than introverts because supervisor does not want to damage the relationship with his favorite employee.

**Avoidance of confrontation costs**

When an employee perceives his performance ratings as unfair, he/ she will ask for feedback. However, it is not always easy to provide feedback as supervisor does not always have the complete information on the employee performance due to insufficient monitoring and observations. Supervisors should spend more time and effort to collect the information. To minimize the time and effort and to avoid discussion, managers will have a tendency to give higher ratings (Friedrich 1993). Similar findings have been found by Bernardin and Villanova (1986), who found that inaccuracy ratings will be given in order to avoid discussions with subordinates. A more recently study of Bol (2011) found that centrality and leniency biases exist when information-gathering is costly for the managers.

Despite no literature and studies can be found for the question whether extroverts and introverts will stand up for themselves by asking feedback with reference to their unfair, low and/ or inaccurate performance ratings I assume that extroverts will stand up for themselves rather than introverts. The main reason is because extraversion is significant positively correlated to ambition (.31) and competitive (.28) (Nettle, 2004) and according to McClelland et al. (1953) (who focused on the behavior of people with high need for achievement) people with high need for achievement are strongly asking for feedback on their work so that performance can be improved. Therefore the probability that extroverts ask for feedback with reference to his/her low/unfair ratings is high. Furthermore, it has been found that extroverts make significantly more contradictions and counterexamples in a small group discussion leading to a conflictual conversation (Nussbaum, 2002). This indicates that extroverts could make more contradictions during the performance evaluation. Because supervisors might not be able to refute due to the lack of information on the performance as found in existing studies, supervisor might have the desire to avoid discussion with extroverts and I predict therefore that extroverts are given high ratings.

In contrast, introversion is correlated with withdrawn and are less assertive. As mentioned before, studies found that introverts are less willing to communicate and are perceived as less talkative by supervisors. Because of this perception and the correlated behavior, I assume supervisor does not have the tendency to give introverts high ratings.

Taken all together, because existing studies found that extroverts (1) are better skilled at creating impression (2) being perceived as having more potential to be a manager and thus increase the probability to receive promotion, (3) are more favorable because of their personality and (4) are more ambitious, competitive and make more contradictions in small group discussion, I predict that, given similar level of performance, overall extroverts will be higher rated than introverts.

### **2.2.2 Performance evaluation and personality rater**

The differences in performance ratings between extroverts and introverts probably depend on the personality of the rater for several reasons.

Firstly, from the perspective of the introverted supervisor the factors favoritism and impression will not have a great influence on performance evaluation. Since the personality of the introverted supervisors is similar to the personality of introverted employees, an introverted supervisor understands how an introverted employee feels and how much effort an introverted employee has to exert to get the same level of performance of extroverts. As mentioned before, introverted employee has to put more effort and energy to exhibit extroverted behavior compared to extroverts (Fanning, 2000). Moreover, the study of Campbell and Hawley (1982) shows that introverts prefer location that minimize external stimuli, however, most of the organizations have an open office and thus to introverts it takes more energy to concentrate on his/her work. Because of these reasons, I expect introverted supervisor does not have the tendency to give introverts very low ratings. In contrast to introverted supervisor, extroverted supervisors will probably not understand the behavior/ characteristics of introverts and this could be probably the explanation for why they have the tendency to view introverted employee as a weakness, expendable, less talkative and less sociable (Richmond and Roach, 1992).

Secondly, from the perspective of the introverted supervisor there is no intention to promote an introvert over an extrovert and vice versa. To introverted supervisor, both type of employee could have the potential to perform as a manager in the future and have equal chance to be promoted, because the introverted supervisor itself is a supervisor/ manager. So in his point of view personality does not play a role in determining the likelihood to be promoted.

Thirdly, I assume that the relationship between employee and introverted supervisor is not too strong since introverts are not talkative and sociable as described by the theory of Eysenck (1967). Therefore introverted supervisor does not have the tendency to provide inaccurate ratings to extroverts or introverts in order keep their relationship.

Moreover, regarding the factor 'avoidance of confrontation costs' I do have the same assumption as in the previous subparagraph; I assume introverted supervisor will rate extroverts a bit higher to avoid confrontation costs as extroverts make more contradictions in small group discussion than introverts.

Overall, when looking from the introverted supervisor's perspective, the influence of the factors favoritism, impression and promotion on performance evaluation is not that great, therefore I predict introverted employee are less biased; although both introverted and extroverted supervisor will evaluate the extroverted employee higher than the introverted employee, the effect of the extroverted supervisor is stronger than the effect of the introverted supervisor on the performance evaluation of both introverts and extroverts.

Figure 1 illustrates the predicted relationship between the variables.

		Personality supervisor	
		Extrovert	Introvert
Personality employee	Extrovert	High rated >	High rated
	Introvert	Low rated <	Low rated

Fig.2 predicted relationship

In summary, based on the theories and studies above the hypotheses that will be tested in this thesis are as :

- H1: Given similar level of performance, the performance evaluation of extroverts is higher than the performance evaluation of introverts.
- H2: The effect of the extroverted supervisor is stronger than the effect of the introverted supervisor on the performance evaluation of both introverts and extroverts.

### 3. Research design

In this section the research design will be worked out step by step. In the first paragraph I will describe which research method is used, the sample selection and survey procedures. Then in the next paragraph I will provide the measures of the variables and explain those in more details.

#### 3.1 Sample selection and survey procedures

The target of sample of this research should be individuals who play the role of a supervisor to rate the performance of an employee; therefore this research is at individual level. The research method that will be used is a questionnaire survey in which scenario-based experiment is used. Two versions of questionnaire survey were created. Both surveys consist of two parts; the first part of the first version includes a scenario in which an employee is described as introvert, while in the other version a description of an extroverted employee is given. The second part of the two versions is the same which consist of some manipulation checks, a set of general question and some statements about the personality. The two versions were randomly distributed to the participants.

To approach participants, I asked the lecturers of the tutorial groups of the course Finance at the Erasmus University in the Netherlands the permission to hand out my survey to their students during class hours. A total of 132 undergraduate students filled in the survey. Furthermore, I made use of the website [www.thesistool.com](http://www.thesistool.com) and asked my family, friends and class mates through mail to fill in my survey. I also approached 15 respondents outside, however, since they were quite quick in completing the survey, the possibility of obtaining unreliable data is high, therefore these survey were disregarded for further analysis.

In total, the sample size is 171, whereof 88 of the first version and 83 of the second version. Around 75% comes from students at the University and the remaining 25% received through email. Participants were asked to answer a set of general questions which includes questions regarding their gender, age, level of education and year of work experience. Table 1 shows the statistics of the demographics. Since 75% of the surveys were distributed to first-years-students enrolled in a Finance course, the sample consists of 2/3 males and 1/3 females. Moreover, the average participant is 22 years old, has 3 years work experience and has completed high school which is the highest level of completed education.

**Table 1**  
**Demographic statistics**

Demographics		<u>N</u>	<u>%</u>			
Gender	Male	107	63%			
	Female	64	37%			
Education	Grammar	3	2%			
	High school	98	57%			
	Bachelor's degree	40	23%			
	Master degree	26	15%			
	Other	4	2%			
		<u>N</u>	<u>M</u>	<u>SD</u>	<u>Min</u>	<u>Max</u>
Age		171	22	3,22	17	33
Years of work experience		171	3	2,63	0	12

## 3.2 Measures

In this thesis the independent variable, which is the personality of the rater (participants) and dependent variable which is the performance rating of the ratee will be measured. The measures will be discussed in more details in the next subparagraphs.

### 3.2.1 Dependent variable: performance ratings

The survey starts with a description in which the role of a regional director is introduced, which is the same in both conditions:

Imagine that you are a regional director who is in charge of 4 department stores and has to supervise 4 branch managers. Next to your daily work, every two months you have to evaluate the performance of the 4 branch managers by filling in a performance appraisal. To provide accurate ratings, sometimes you walk through the office of the branch-stores to observe the managers. You have already evaluated Peter, Micheal and Kary. The next manager is Jason. Below you can find a description of your observations on Jason. Please read the description carefully.

Then as mentioned in the introduction, a description about the personality of an employee is provided. The description in the introverted condition is:

You have observed that Jason is a silent person. Every Monday morning when he walks in the organization his colleagues ask him how his weekend was and normally he only answers: “My weekend was ok” and he quickly starts to work. Then, when it is lunch time, his colleagues ask him if he wants to join them to have a lunch in the canteen, but he always says “no, thanks”. Moreover, when social events are organized for managers in order to improve their relationship, Jason is always absent. Also, when Jason has a discussion with colleagues, most of the time he withdraws or is convinced by his colleagues, while his suggestions and ideas are actually not always bad. You have also noticed that Jason does not always give his opinion during group meetings. At last, when it is Friday, all colleagues are very happy and are talking about their weekend’s plans while Jason is not enthusiastic and normally does not join the conversation.

While the description in the extroverted condition is:

You have observed that Jason is a social person. Every Monday when he walks in the organization he always asks his colleagues how their weekend was and he can keep talking for more than a half hour. Then, when it is lunch time, he always asks his colleagues if they want to join him to have a lunch in the canteen, he feels very comfortable with people around him. Moreover, when social events are organized for managers in order to improve their relationship, Jason is always present and has a lot of fun with his colleagues. You have also noticed that, when he has a discussion with his colleagues, he is very assertive and cannot easily be convinced. Also during group meetings, he always gives his opinion. At last, when it is Friday, Jason is very enthusiastic and always wants to share his weekend’s plans with his colleagues.

Then, I created a performance appraisal in which some actual performances and targets are shown of the employee. This performance appraisal is exactly the same in both conditions. The actual performances were scored on 7-point Likert scales with anchors 1 = very bad and 7 = excellent. The participants in both conditions were asked to rate the actual performances and to give a final overall grade in order to investigate whether the performance ratings of an introverted employee differ from an extroverted employee (given similar level of performances).

Performance Appraisal										
Employee name	Jason			Assessor	(You)					
Job Title	Branch manager			Date	08-08-2013					
Performance Measures				Evaluation						
		Actual	Target	Very bad					Excellent	
1.	Number of customer complaints	3	0	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	Number of new customers	24	20	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	Number of existing customer who has terminated his/her contract	4	0	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	Profit	2700	2500	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	Number of sold products	1050	1000	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	Cost savings	650	500	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Overall final grade										

Figure3. Performance appraisal

In order to provide confirmation and/or more evidence that there are differences in performance evaluation between the introverted employee and extroverted employee, I included an additional variable ‘promotion’; participants were asked to indicate to what extent they agree Jason is an appropriate candidate for promotion. The scores on this item indicate whether an extrovert is “better” than an introvert since only employees who outperform will be selected for promotion. This statement was scored on a 5-point Likert scale.

Table 2 shows the descriptive statistics of the performance measures, final grade and promotion. As displayed, the frequency of being rated “excellent” is higher for the extroverted employee than the introverted employee. As a result, the extroverted employee is rated higher on average on each items compared to the introverted employee, however, the mean values do not differ that much. In contrast, there is a clear difference in the final grade; the extroverted employee is higher rated than the introverted employee. The next chapter will discuss whether these differences are significant or not.

**Table 2**  
**Descriptive statistics on performance measures**  
**(N=171, whereof 88 rated the introverted employee and 83 the extroverted employee)**

Performance measures	Survey Version	Mean	1	2	3	4	5	6	7	S.D
Number of customer complaints	Introverted condition	3,08	6%	33%	26%	22%	10%	3%	0%	1,22
	Extroverted condition	3,49	7%	27%	24%	20%	19%	1%	1%	1,28
Number of new customers	Introverted condition	5,73	0%	0%	0%	3%	33%	51%	13%	0,72
	Extroverted condition	5,73	0%	1%	2%	5%	28%	42%	22%	1,02
Number of existing customers who has terminated contract	Introverted condition	2,53	19%	33%	28%	14%	6%	0%	0%	1,12
	Extroverted condition	3,61	12%	24%	22%	17%	18%	7%	0%	1,49
Profit	Introverted condition	5,59	0%	0%	0%	1%	42%	53%	3%	0,58
	Extroverted condition	5,88	0%	0%	2%	2%	27%	47%	22%	0,88
Number of sold products	Introverted condition	5,22	0%	0%	0%	10%	60%	27%	2%	0,65
	Extroverted condition	5,59	0%	0%	1%	10%	34%	43%	12%	0,87
Cost savings	Introverted condition	5,36	0%	1%	2%	6%	45%	41%	5%	0,85
	Extroverted condition	5,62	0%	2%	1%	8%	27%	47%	14%	1,04
Final grade	Introverted condition	6,86								0,74
	Extroverted condition	7,50				N/A				0,72
Promotion <sup>a</sup>	Introverted condition	2,88	7%	38%	39%	15%	1%		N/A	2,23
	Extroverted condition	3,64	0%	5%	36%	49%	10%		N/A	0,73

Displayed are the percentages of frequency of responses to the following question:

Please rate the actual performance of Jason and give him an overall final grade\*

1 = Very bad

5 = Good

2 = Bad

6 = Very good

3 = Below average

7 = Excellent

4 = Average

\* A grade between 0 -10

a= assessed through statement "Jason is an appropriate candidate for promotion" with anchors 1 =strongly disagree and 5 = strongly agree.

### 3.2.2 Independent variable: personality rater

I measured the personality of the participants by using the extraversion scale of the well-known NEO Five Factor Inventory (Costa & McCrae, 1992). This inventory composes of 60 items which are used to measure five personality dimension<sup>2</sup>; each dimension is measured by 12 items. I selected 6 positive items from inventory to measure the extraversion dimension, a sample item is: "I really enjoy talking to people". These items were scored on 5-point Likert scales with anchors 1 = strongly disagree and 5 = strongly agree.

According to the explanation of the NEO inventory, individuals who scored below average on the extraversion scale are characterized as introvert. In contrast, individuals are characterized as extroverts if they score above average on the extraversion scale. In other words, the higher the scores on the extraversion scale, the more extrovert (the less introvert) the individual is characterized.

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<sup>2</sup> The five personality dimensions of the NEO Five Factor are as follows: Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness



Table 3 shows the descriptive statistics on the six items of the extraversion scale. When looking at the percentages, most of the participants 'agreed' with the statements as the percentages of frequency of the statements are very high (except for the statement 'I often feel as if I'm bursting with energy'). Although there are variations in the statistics, the mean values are nearly the same. Most of the participants view themselves more extrovert as the percentages are skewed to the right. These items are reliable since the Cronbach alpha is 0,731.

These items are used to measure the independent variable: personality of the rater. The personality of the rater is calculated as the mean value of the six items.

**Table 3**  
**Descriptive statistic on items of extraversion scale**

<u>Items</u>	(N=171)						<u>S.D</u>
	<u>Mean</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	
I like to have a lot of people around me	3,65	0%	7%	32%	51%	11%	0,76
I really enjoy talking to people	3,86	0%	5%	19%	60%	16%	0,74
I like to be where the action is	3,75	1%	8%	25%	48%	18%	0,87
I often feel as if I'm bursting with energy	3,24	1%	16%	47%	29%	7%	0,85
I am a cheerful high-spirited person	3,49	2%	9%	37%	44%	8%	0,84
I am a very active person	3,59	0%	11%	36%	38%	16%	0,88
<u>Variable</u>							
Personality rater (mean of both conditions)	3,60			N/A			0,85

Displayed are the percentages of frequency of responses to the following question:

Please indicate to what extent you are agree or disagree with the following statements:

1 = Strongly disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly agree

## 4. Results

In this section the results will be discussed. First the manipulation will be checked in the first paragraph. Then, an overview of demographics and descriptive statistics of the variables will be given in the second paragraph. Also the correlation between variables and control variables will be shown. In the last paragraph I will discuss whether the hypotheses are rejected or accepted by showing and explaining the results of several tests.

### 4.1 Manipulation checks

To check whether participants had good understanding of the scenario, all participants were asked to not look back at the case and to indicate in what extent they agree or disagree with the following statements: ‘Jason is social and has a good relation with his colleagues’ and ‘Jason is an extroverted person’. These statements were scored on 5-point Likert scale with anchors 1 = strongly disagree and 5 = strongly agree. The results show that the manipulation checks were successful; for the first statement, the introverted condition had a mean of 1.50 while the extroverted condition had a mean of 4.31,  $p < 0,001$ . For the second statement the mean value of the introverted condition is 1.57, which is also significantly lower than that of the extroverted condition who had a mean of 4.13,  $p < 0,001$ .

### 4.2 Descriptive statistics and correlations

In this subparagraph, the descriptive statistics of the main variables and correlations between variables are provided. As shown in table 4, final grade in the introverted condition is ranging from 5 to 8,5 while the final grade in the extroverted condition is ranging from 6 to 9. The extroverted employee seems to be a “better” employee than the introverted employee as on average the extroverted employee was given a higher final grade and the introverted employee was given a lower final grade. The mean value of the additional variable promotion is higher as well in the extroverted condition than in the introverted condition. I will examine whether the differences in the mean value are significant in the paragraph 4.4.

<u>Main dependent variable</u>		<u>N</u>	<u>M</u>	<u>S.D.</u>	<u>Min</u>	<u>Max</u>
Final grade	Introverted condition	88	6,86	0,74	5	8,5
	Extroverted condition	83	7,49	0,72	6	9
<u>Additional dependent variable</u>						
Promotion	Introverted condition	88	2,88	2,23	1	5
	Extroverted condition	83	3,64	0,73	2	5
<u>Independent variable</u>						
Personality rater (extraversion)	Introverted condition	88	3,57	0,85	1	5
	Extroverted condition	83	3,62	0,84	1	5

When looking at the standard deviations, the standard deviation of promotion in the introverted condition is very high compared to the other standard deviations. This indicates that the scores of promotion (which was scored on a 5-point Likert scale) in the introverted condition are widely spread indicating that participants might have different view on introverted employee as a candidate for promotion. In contrast, the standard deviation of promotion in the extroverted condition is small indicating the scores are close to the mean value. It seems to most of

participants, the extroverted employee is an appropriate candidate for promotion as the mean value is above average. Furthermore, table 4 shows that the personality of a typical participant is more extrovert as the mean value is above average in both conditions.

Table 5 provides the correlations between the main and additional variables in this thesis. As shown, the personality of the employee is positive significantly correlated to final grade,  $r = .40$  and promotion  $r = .22$ ,  $p < 0.01$ .

**Table 5a**  
**Correlations Total (data from 2 conditions)**

Variables	Final grade <sup>b</sup>	Promotion <sup>c</sup>	Personality rater <sup>d</sup>
Personality employee <sup>a</sup>	0.398**	0.223**	0.051

<sup>a</sup> 0 = introverted employee, 1 = extroverted employee  
<sup>b</sup> Assessed through question: "Please give Jason a final grade between 0 – 10"  
<sup>c</sup> Assessed through statement: "Jason is an appropriate candidate for promotion"; mean value on 5-point Likert scale  
<sup>d</sup> Assessed through 6 statements of the extraversion scale of NEO five-factor inventory; mean value on 5-point Likert scale  
\*\* . Correlation is significant at the 0.01 level (2-tailed)  
\* . Correlation is significant at the 0.05 level (2-tailed).

In table 5c and 5b the correlations between final grade, promotion and personality of the rater are displayed separately for both conditions. In table 5b the Pearson test shows that final grade is positive significantly correlated to promotion,  $r = .40$ ,  $p < 0,05$  and also correlated to personality of the rater,  $r = .23$ ,  $p < 0,01$ . Inconsistent with the Pearson test, the Spearman test indicates no significant correlation between final grade and personality of the rater.

Table 5b				Table 5c			
Correlations extroverted condition				Correlations introverted condition			
Variables	1	2	3	Variables	1	2	3
1 Final grade		0.426**	0.207	1 Final grade		0.416**	-0.079
2 Promotion	0.403**		0.238*	2 Promotion	-0.077		-0.062
3 Personality rater	0.228*	0.224*		3 Personality rater	-0.090	-0.089	

Pearson correlations appear below the diagonal, non-parametric Spearman correlations appear above the diagonal.  
\*\* . Correlation is significant at the 0.01 level (2-tailed)  
\* . Correlation is significant at the 0.05 level (2-tailed).

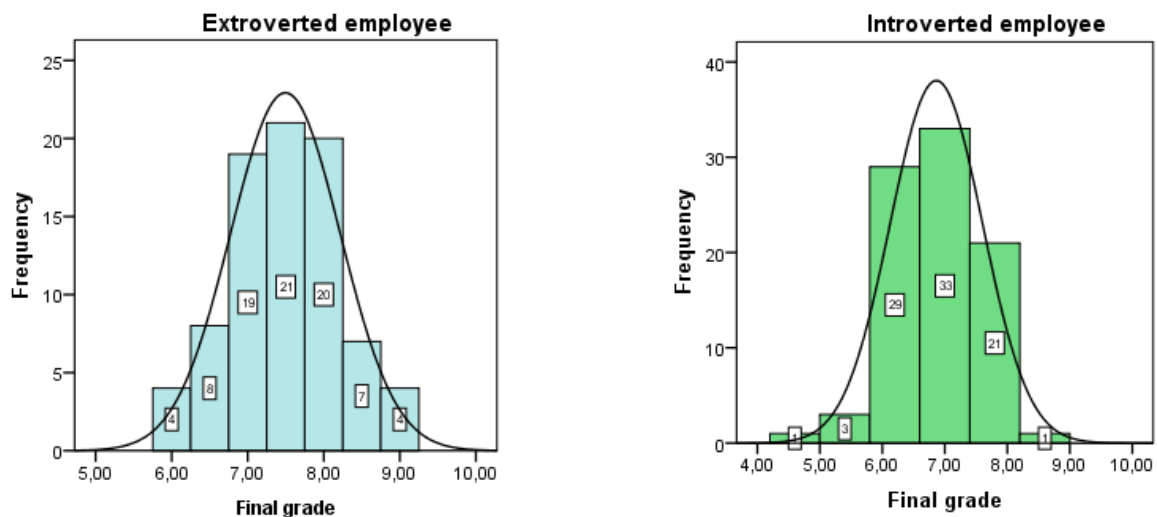
Furthermore, when looking at table 5c, for the introverted employee, final grade is negatively correlated to promotion,  $r = -.077$ , and negatively correlated to the personality of the rater,  $r = -.090$ , however, these correlations are very weak and not significant. Remarkably, according to the Spearman correlation test, final grade is positive significantly correlated to promotion,  $r = .416$ ,  $p < 0,05$  which is, again, inconsistent with the correlations of the Pearson test. The different outcomes could be explained by the differences between the two correlation tests. The Pearson correlation test is a parametric test and requires interval or ratio data while the Spearman correlation test is a rank-order non-parametric test and requires ordinal data. In the next paragraph I examine whether the data is normally distributed and, if so, parametric tests will be used to test the hypotheses. Moreover, since correlation test does not imply causal relationship between independent and dependent variable, I test my hypothesis using other statistical test in paragraph 4.4.

### 4.3 Preliminary analyses

A Moderated Regression test will be run to test the two hypotheses. There are some assumptions of the Regression test that should be checked before running test. If the Regression is used when assumptions are violated, the results are likely to be inaccurate. Since Regression test is a parametric test, the assumption of normal distribution and homogeneity of variance will be checked. Also the outlier analysis will be addressed below in more details.

#### Outliers and normal distribution

Since some data could be very different from the rest of the dataset, it is important to detect such outliers as outliers influence the outcomes (mean value). If outliers are included, results are likely to be inaccurate. Below two histograms are shown with frequency on the y-axis and final grades on the x-axis. As can be seen clearly in both histograms, the final grade is ranging from 5 to 9 indicating no existence of outliers.



When looking at the above histograms, the frequency of final grades seems to have an approximately normal distribution as the bars follow a pattern similar to the curve in both histograms. However, for both scores of both condition, the Kolmogorov-Smirnov is highly significant indicating the data points regarding the final grade of the extroverted employee,  $D(83) = 0.13$ ,  $p < 0.05$ , and the final grade of the introverted employee,  $D(88) = 0.18$ ,  $p < 0.001$  are not normally distributed. Since Regression is a parametric test based on normal distribution, regression test is not appropriate to test the hypotheses since data are not normally distributed. An alternative is to run the Regression based on 1000 bootstrap samples; the original sample ( $N=171$ ) is treated as population from which 1000 samples are taken, these smaller samples are so called the bootstrap samples (Field, 2009). In this way, the results are more accurate as size of sample is larger and the confident-interval is broader.

### 4.4 Hypotheses testing

In this subsection the two hypotheses will be test through a Moderated Regression test. As discussed in the theoretical section, I predict, given similar level of performance, the performance evaluation of the extroverted employee is higher than the performance evaluation of the introverted employee. The second hypothesis predicts the effect of the extroverted supervisor is stronger than the effect of the introverted supervisor on the performance evaluation of both introverts and extroverts.

The Moderated Regression test represents the effect of the personality of employee on the final grade where the value of personality of rater is zero. However, since the personality of the rater is measured through items which were measured on the 5-point Likert scale, the value of personality of rater cannot be equal to zero as the scale starts with 1 = strongly disagree. Therefore I standardized the value of personality of each participant (which is the mean value of the scores of the six items). So the standard deviation of the personality of each participant is used as input for the Moderated Regression. A standard deviation that is equal to zero is in fact equal to the mean value of the personality rater, which is 3.60 (see table 2 ‘Descriptive statistic on items of extraversion scale’). Mean value of 3,60 indicates, on average, the participant is more extrovert as the mean value is above average. So in other words, the Moderated Regression represents the effect of the personality of employee on the final grade given a supervisor with high level of extraversion.

Obtained from the coefficient table of the regression test, the overall regression equation to predict final grade is as follows:

<b>Table 6</b>				
<b>Regression equation with final grade as dependent variable<sup>a</sup></b>				
Final grade	=	6.853	+	0.633PE
		(0.001)		(0.001)
			-	0.067 PR
				(0.376)
			+	0.236 (PE x PR)
				(0.040)

<sup>a</sup> Bootstrap results are based on 1000 bootstrap samples (population =171)  
 PE = Personality of employee, 0 = introverted employee 1= extroverted employee  
 PR= Personality of rater, standardized values (z-scores)  
 PE x PR = interaction effect of personality employee and personality rater  
 P values between brackets

To facilitate the interpretation I separated the regression equation for both conditions. For introverted employee, the personality of employee was coded as 0. Obtained from the above regression, the regression equation to predict final grade for introverts is as follows:

<b>Table 7</b>				
<b>Regression equation for introverted employee</b>				
Introverts: Final grade	=	6.853	+	0.633 x 0
				- 0.067 PR
				+ 0.236 (0 x PR)
Final grade	=	6.853	-	0.067 PR

An introverted employee would be predicted to score a 6.85 as (starting) final grade for PR = 0. As explained before, since personality of rater was standardized, ‘PR = 0’ is in fact equal to the mean value of the personality rater, which was 3.60. So given supervisors with a high level of extraversion (PR=0), an introverted employee would be predicted to score a 6,85 as (starting) final grade. For each additional point increase in the extraversion

scale (which is an increase in the level of extraversion), there is a decrease of 0.067 points in the final grade. In other words, the higher the level of extraversion of the supervisor, the lower the final grade was given to introverted employee.

For extroverts, the personality of employee was coded as 1. Obtained from the overall regression equation in table 6, the regression equation for extroverts is as follows:

**Table 8**  
**Regression equation for extroverted employee**

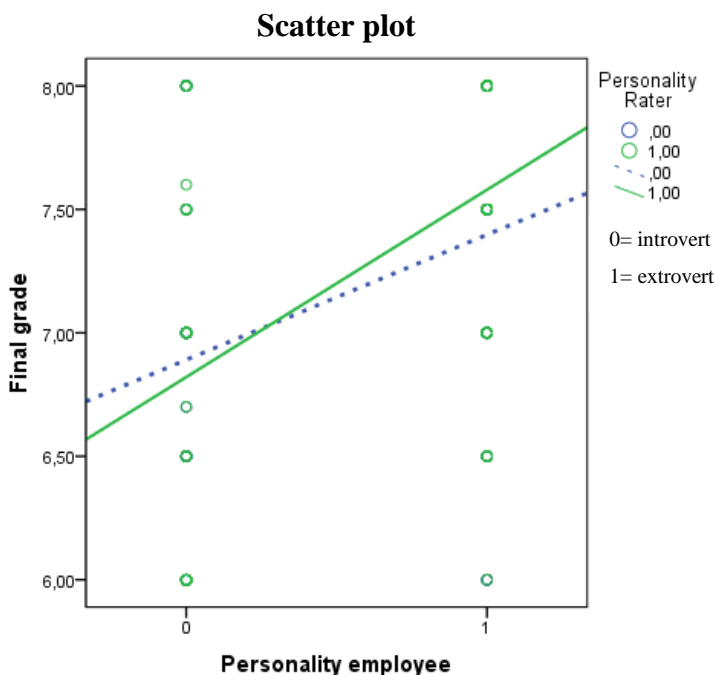
$$\begin{aligned} \text{Extroverts: Final grade} &= 6.853 + 0.633 \times 1 - 0.067 \text{ PR} + 0.236(1 \times \text{PR}) \\ \text{Final grade} &= 7.486 + 0,169 \text{ PR} \end{aligned}$$

Given supervisor with high level of extraversion (PR=0), an extroverted employee would be predicted to score a 7.49 as (starting) final grade. For each additional point increase in the extraversion scale (which is an increase in the level of extraversion), there is an increase of 0.17 points in the final grade. In other words, the higher the level of extraversion of the supervisor, the higher the final grade was given to the extroverted employee.

When comparing the 2 regression equation (table 7 and table 8), the (starting) final grade of the introverted employee is 6.853 while the final grade of the extroverted employee is 7.49. These results support the first hypothesis; the extroverted employee was significantly higher rated than the introverted employee (given PR = 0),  $t(167) = 5.629, p < .01$ .

To test the second hypothesis, I look at the interaction term of the regression in table 8. The coefficient for the interaction term is significant,  $b = .236, t(167) = 2.107, p < .05$ , indicating the slope that predicts the change in final grade as points increase differs significantly between the introverts and extroverts.

The graph below shows the interaction of personality of the employee and personality of the rater on the final grade.



**Fig. 4 Average grade**

		Personality supervisor	
		Extrovert	Introvert
Personality employee	Extrovert	Grade: 7.6	Grade: 7.3
	Introvert	Grade: 6.7	Grade: 6.9

The upper line shows the regression to predict the final grade for the extroverted employee and the dotted line shows regression to predict the final grade of the introverted employee. Introverted participants who scored below average ( $M < 3.60$ ) were coded as 0 and extroverted participants who scored average or above average ( $M \geq 3,60$ ) were coded as 1. Figure 4 shows the average final grade that was given by extroverted participants and by introverted participants

When looking at the upper line in the scatter plot, extroverted participants gave the extroverted employee a higher grade compared to introverted participants; however the average grade does not differ that much as shown in figure 4. The dotted line on the other hand indicates that extroverted participants gave the introverted employee a lower grade than introverted participants who gave a somewhat higher grade, and again, the average grade does not differ that much as shown in figure 4.

Taken all together, these results support the second hypothesis that predicts an significant interaction effect; both introverted supervisor and extroverted supervisor evaluated the extroverted employee higher than the introverted employee, however the effect of the extroverted supervisor is stronger as the grade that was given to the extroverted employee was higher and the grade that was given to the introverted employee was lower compared to the grades that were given by the introverted supervisor. This indicates extroverted supervisors are more biased than introverted supervisors as the average grades given by extroverted participants deviate more from the total mean value of final grade of both condition ( $M = 7,17$ ) than the averages grades given by introverted participants.

#### 4.5 Additional statistical tests

As shown in the previous paragraph, the moderated regression with final grade as dependent variable indicated a significant interaction effect of personality of employee and personality of rater on performance evaluation. Since final grade is significantly correlated to promotion at  $p < 0.01$  for both conditions ( see Spearman test in table 5b and 5c) I strongly believe that participants who gave a high grade, also scored high on the promotion scale. Because of this significant correlation, I was wondering whether promotion is also influenced by the interaction effect of personality of both employee and supervisor. So in this subparagraph a moderated regression with promotion as dependent variable will be run to check whether the results are consistent with the results deducted from the regression in the previous paragraph.

Obtained from the coefficients of the regression test, the regression to predict whether Jason is an appropriate candidate for promotion is displayed in table 9.

**Table 9**  
**Regression equation with promotion as dependent variable<sup>a</sup>**

$$\text{Promotion}^b = 2.864 + 0.767PE - 0.220 PR + 0.386(PE \times PR)$$

(0.001)            (0.047)            (0.374)            (0.186)

a. Bootstrap results are based on 1000 bootstrap samples (population =171)

b. Assessed through statement: "Jason is an appropriate candidate for promotion"; mean value on 5-point Likert scale

PE = Personality of employee, 0 = introverted employee 1= extroverted employee

PR= Personality of rater, standardized values (z-scores)

PE x PR = interaction effect of personality employee and personality rater

P values between brackets

The interaction term is not significant indicating no interaction effect of personality of the employee and personality of the rater on promotion,  $b = .386$ ,  $t(167) = 1.487$ ,  $p = .186$ . In other words, the effect of personality of employee on promotion does not depend on the personality of the rater. The coefficient for the personality of the employee is, however, significant,  $b = .767$ ,  $t(167) = 2.107$ ,  $p < .05$ , indicating that given an average value of personality of the rater, the extroverted employee was perceived to be a more appropriate candidate for promotion than the introverted employee.

The above findings are inconsistent with the findings derived from the main test (Regression test with final grade as dependent variable) and do not support the second hypothesis that predicts an interaction effect. The results show promotion is influenced by the personality of the employee (given participants with high level of extraversion), while final grade is influenced by the interaction effect of personality of both employee and rater. The different findings could be attributed to the fact that promoting an employee is a more essential decision than giving a grade as promotion has more consequences on the organization and employees (e.g. small reorganization might take place within the department as the promoted person might perform (more) other tasks, or extra costs will be made to train the promoted person. There is also a possibility that an inappropriate candidate is selected for promotion which may lead to more costs as mistakes will be made by the inappropriate candidate due to insufficient knowledge etc.) Therefore, supervisors are careful when selecting an appropriate candidate as they are responsible for their decision. Therefore they might not let their personality influence the selection.

On the other hand, supervisors might take the personality of employee into account when selecting a candidate for promotion. An appropriate candidate should be able to work independently and also to cooperate with colleagues. Sociability is therefore an important characteristic to keep relationship between colleagues. This could be the explanation for the significant effect of personality of employee on promotion given an average value of the personality of the rater.



## 5. Discussion and conclusion

This thesis examined the difference in performance evaluation between extroverted employee and an introverted employee. This thesis also examined whether these differences, if significant, depend on the interaction effect of the level of extraversion of both the ratee and the rater. The two hypotheses have been tested through a Moderated Regression, which result in the following conclusions. Firstly, the final grade of the extroverted employee is significantly higher than final grade of the introverted employee. Then, the second hypothesis has also been supported by the results which show a significant interaction effect of the personality of employee and personality of the rater on final grade; although both introverted supervisor and extroverted supervisor evaluated the extroverted employee higher than the introverted employee, the effect of the extroverted supervisor is stronger as the grade that was given to the extroverted employee was higher and the grade that was given to the introverted employee was lower than the grades that were given by the introverted supervisor. This indicates that extroverted supervisor are more biased.

Since the results of my thesis establish the existence of personality bias in performance evaluation, even though the mean final grade of the extroverted employee does not differ that much from the introverted employee, organization should pay attention on this problem. Employees may feel harmed since they are treated unfairly by means of receiving unfair performance ratings. The whole performance appraisal system will be perceived as unfair and thus ineffective. Because of the unfair ratings, employees are not motivated and react against the incentive system as compensation is based on (the inaccurate) ratings provided in performance evaluation (Cohen-Charash and Spector 2001; Colquitt et al. 2001). Thus, it is recommend to pay more attention on the problem of personality bias in performance evaluation as the problem has consequences on the effectiveness of performance evaluation system and the effectiveness of incentive systems. A possible solution is to print out the performance appraisal without the name of the performer. In this way, personality bias could probably be prevented since the supervisor does not know who the performer is.

The results of my thesis are consistent with existing studies who also found that extroverts were higher rated than introverts (Furnham and Stringfield, 1992; Tziner et al.,2002). However, the settings of my thesis differed from those studies in an important way. Most of the studies found that extroverts were getting higher scores on their performances. However, these studies did not reveal the actual performances of extroverts and introverts. Supervisors might probably be biased when filling in the performance appraisals. It is therefore not clear whether extroverts outperformed introverts or did extroverts receive high scores just because of their personality/ To answer this question, I used a scenario-based experiment in which the level of performance of the employee is the same in the conditions. Moreover, by providing similar level of performances, the grades between an extroverted employee and introverted employee are comparable.

Although my research method differed from existing studies, there are some considerable limitations. Firstly, since the performance appraisal in my survey is provided after the description about the personality of the employee, there is a probability that some participants were biased as it might be quite obvious what I want to examine. However, participants do not know there are two versions of the survey and might not know what the dependent variable is as I include several performance measures. Therefore, although the probability of biased participants exists, this probability is small. Secondly, the sample of my research consists of 75% students who

do not have much work experience and/or experience in evaluating someone's performances. Perhaps it would be better to distribute my surveys to managers in real world, which makes the results more reliable.

Further research could try to distribute fictive performance appraisals to managers in real world. In this way, more reliable results could be obtained since managers/ supervisors have the experience in performance evaluations. Moreover, the problem of biased participants does probably not exist since no description about the subordinate is provided in the performance appraisal. Managers could not guess the hypotheses.

Furthermore, in my thesis I used bootstrap samples to test the hypotheses because the sample in this thesis is small and data is not normally distributed. However, the original sample might not represent the population, so results based on bootstrap samples may not be accurate. Therefore further research should try to approach a larger sample.

Further research could also examine the effect of other personalities (e.g. neuroticism, openness, agreeableness, conscientiousness etc.) of employees and supervisors on performance evaluation. The more personalities are included in the research, the more we know which types of employees are being treated unfairly in organizations by means of receiving low/inaccurate performance ratings. Every employee should be treated fairly, otherwise incentives systems will not work effectively since personality biases in performance evaluation disrupt the link between performance and pay/desire outcome. As consequences, employees will not behave in line with the objective of the organizations.

## 6. References

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