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FACULTEIT ECONOMIE EN BEDRIJFSKUNDE

ACADEMIEJAAR 2013 – 2014

**Attractiveness over conscientiousness:
Discrimination based on perceived
attractiveness and personality traits in
the Flemish labor market -
A correspondence test**

Masterproef voorgedragen tot het bekomen van de graad van

Master of Science in de Algemene Economie

Anke Penninck

onder leiding van

Dr. Stijn Baert

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PERMISSION

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Anke Penninck

DUTCH SUMMARY

In deze masterproef staat discriminatie op basis van observeerbare schoonheid en persoonlijkheidskenmerken centraal. De bestaande literatuur alludeert dat beide een grond vormen voor discriminerende praktijken in de arbeidsmarkt. We kozen ervoor om beide elementen samen te behandelen, deze zijn immers verregaand met elkaar gecorreleerd. Bovendien is deze aanpak vooralsnog eerder uniek binnen de bestaande literatuur. Deze invalshoek is vanzelfsprekend één van de hoofdzakelijke merites van deze thesis.

Wij hebben een veldexperiment, meer bepaald een correspondentie onderzoek, opgezet met oog op het beantwoorden van onze onderzoeksvragen. Dientengevolge zijn onze conclusies beperkt tot de eerste fase van het aanwervingsproces. Verder is ons onderzoek beperkt tot mannelijke sollicitanten en werd enkel de Vlaamse arbeidsmarkt onder de loep genomen.

Een eerste conclusie heeft betrekking op het effect van observeerbare schoonheid op de kans op positieve callback in navolging van een sollicitatie. De bestaande literatuur wijst op het bestaan van schoonheidspremies voor zij die beschouwd worden als meer aantrekkelijk dan gemiddeld alsook sancties voor zij die beschouwd worden als minder aantrekkelijk. Onze resultaten bevestigen dit niet. De kansen op een positieve reactie na een sollicitatie is voor aantrekkelijke mannelijke sollicitanten niet significant verschillend van deze van mannelijke sollicitanten die als minder aantrekkelijk worden beschouwd. Schoonheid lijkt dus in de Vlaamse arbeidsmarkt de eerste fase van het aanwervingsproces niet te beïnvloeden, dit ongeacht het scholingsniveau van de sollicitant en het geslacht van de aanwerver.

Onze tweede bevinding betreft het effect van persoonlijkheidskenmerken op de kansen op positieve callback na een sollicitatie. Extraversie, emotionele stabiliteit, mildheid en openheid bleken geen invloed te hebben op de eerste fase van het aanwervingsproces voor mannelijke sollicitanten in Vlaanderen. Betrouwbaarheid daarentegen heeft hierop zowel een significant positief alsook een vrij persistent effect. Hoewel dit niet het is geval voor de hogeschoolden, is het effect van betrouwbaarheid op de kansen op een positieve reactie op een sollicitatie van een mannelijke sollicitant in de Vlaamse arbeidsmarkt zeer duidelijk aanwezig bij de middelgeschoolde sollicitanten alsook over het geslacht van de aanwerver heen.

We kunnen niet stellen dat persoonlijkheid zwaarder weegt op de beslissingen van de aanwervers dan de schoonheid. Wat we wel kunnen besluiten op basis van ons onderzoek is dat betrouwbaarheid een veel uitgesprokener effect heeft dan schoonheid op de eerste fase van het aanwervingsproces in de Vlaamse arbeidsmarkt.

PREFACE

The past few months have been a challenging journey, both intellectually and emotionally. I have discovered that simple things are quite often more complex than they seem at first sight, but also the opposite is true. I would like to thank dr. Stijn Baert, my promoter, who has inspired my interest for labor economics and guided me splendidly through the process of this masters' thesis. Subsequently, I want to thank Nick, for going through my drafts. I would also like to thank my mom and my dad, who granted me the opportunity to pursue a second masters' degree. Finally, I want to thank Cindy, Lieven, Zoë, Louise and, especially, my partner in crises Stéphanie.

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1. INTRODUCTION

Newspapers are filled with articles that bring up discriminatory practices on, for instance, ethnicity in the real estate sector or discrimination based on gender or sexual orientation in the education sector. Discrimination is a problem at hand that requires underpinned research in order to unravel the issue decently. This is certainly the case when it comes to discriminatory practices in the labor market, since they don't have economic grounds. Discrimination, however, is not sustainable in a perfectly competitive product or labor market (Becker, 1957; Cahuc & Zylberberg, 2004). Employers that discriminate would see their profit fall due to the fact that the discriminated workers would turn to those companies that are willing to pay a wage that is equal to their marginal productivity. Giving the reality of free entry, this would eventually drive the discriminatory firms out of the market. Nonetheless, Manning (2003) has shown that nowadays employers do exercise discriminatory practices, even if the labor market is characterized by a substantial degree of competition. This is due to the fact that employers enjoy a degree of monopsony power, which is positively related to the employers' costs that are linked to the search of the ideal candidate¹; as well as to the search costs for an employee. The higher the latter, the less likely it is for employees to change positions, the more monopsony power the employer has. This allows firms to discriminate against specific groups without being driven out of the market. In order to optimize welfare, these discriminatory grounds must first be identified and subsequently be removed. This is highly relevant in the Flemish labor market given the economic crisis and the employment-related issues regarding the ageing of the Belgian population.

In this thesis, we focus upon two plausible grounds for discrimination in the labor market, namely perceived attractiveness and personality traits. Investigating the effect of perceived attractiveness on labor market outcomes is highly relevant since it seems as if the good, the brave and the beautiful continuously defeat the bad, the sly and the ugly. This is not limited to fairytales, also in reality, especially in the entertainment sector, it seems as if attractiveness is worshipped. Think about all those beauty pageants, commercials and reality shows that feed the impression that looks are all that matter. We are constantly judged upon our looks. People who are considered as attractive, are associated with a different array of characteristics compared to the less attractive ones. While this happens automatically, it is interesting to figure out whether this causes a differential treatment of people who are considered as attractive, respectively less attractive. For instance people's

¹ We want to point out that the higher the search costs for the employer, the more expensive it becomes to discriminate. We will not, however, focus upon whether employers discriminate less if vacancies are harder to fill. We refer here to the sound article written by Baert, Cockx, Geyhle & Vandamme (2014) that addresses this issue thoroughly.

popularity, success in the mating selection and social status are clearly positively affected by their perceived attractiveness. The same accounts for personality traits. Each of them is valued as being preferable or rather not and people tend to be more comfortable around people with a specific set of personality traits.

Given the relevance of discrimination in the labor market, our belief that perceived attractiveness as well as personality traits might be plausible discriminatory grounds and our assumption that both are highly correlated, we want to cover both their combined effect and their independent effects on labor market outcomes. Since the empirical research on that matter is scarce, this master's thesis is an attempt to fill up the gap. This approach, where perceived attractiveness and personality traits are addressed jointly, has up till now rarely been used², which adds to the merit of our research.

In this masters' thesis we want to answer three research questions. Our research questions take into account both perceived attractiveness and personality traits. The questions that are to be answered are the following:

- *Do men that are perceived as more attractive than the average, have a larger, smaller or equal chance of being hired than their less attractive counterparts who have the same work-related profile?*
- *Do men that are attributed more favorable personality traits, have a larger, smaller or equal chance of being hired than their counterparts with the same work-related profile?*
- *Is the effect on the hiring chances of perceived attractiveness of a male job applicant more outspoken than the effect on hiring chances of the perceived personality traits of this applicant?*

We will also look at two elements that might affect discrimination in the labor market based on perceived attractiveness and personality traits. The first element focusses upon skill-level of the applicant and the second element takes into account the gender of the recruiter. We will study whether these have an impact on the discriminatory practices concerning perceived attractiveness and personality traits and the subsequent differences in labor market outcomes.

While there exists a plethora of possible scientific methods that are used to address issues of discrimination, we chose to set-up a field experiment, that is a correspondence test, in order to formulate a sound answer to our research questions. A correspondence test implies that matched pairs of resumes, that only differ as far as goes perceived attractiveness and personality traits and

² Baert and Decuyper (2014) studied the effect of both on labor market outcomes as well.

details that are not relevant for the recruiter, are sent out to vacancies that are made public. After sending them out, the callback is registered. These results, which we split up based upon several variables to accurately cover the occurrence of the discrimination, allow us to formulate some well-founded statements about discrimination based upon perceived attractiveness and personality traits in the first stage of the hiring process.

This master's thesis is structured as follows: after the introduction, we extensively outline what the existing body of literature says about discrimination in the labor market based on perceived attractiveness and personality traits. This proves to be essential in order to set up our research and interpret the results we obtain. The third section focusses upon the methodology that was used. Then we present our data and results. We also discuss them and try to formulate answers to our research question. The final section concludes.

2. LITERATURE

Before setting up our research, a thorough understanding of the subject matter is indispensable. Therefore, in this segment we will discuss what the existing literature has to say about discrimination in the labor market based on perceived attractiveness and personality traits. We first shed light upon discrimination in the labor market as such. More specifically, we both address theories that touch upon this issue and give a brief overview of Belgian anti-discrimination legislation. Then we focus upon what is found in the existing literature concerning the effect of perceived attractiveness on labor market outcomes. The next paragraph summarizes what is found in the existing literature about how personality traits affect these outcomes. Then we outline how perceived attractiveness and personality traits are correlated and give an overview of the existing, yet small, scientific research that addresses both variables jointly while studying their independent as well as their combined effect on labor market outcomes. Next, we concentrate upon whether the gender of the recruiter has any effect on these forms of discrimination in the labor market. Finally, we conclude this section by formulating hypotheses related to our research questions.

2.1. THE ECONOMICS OF DISCRIMINATION

In this subsection we focus on the economic relevance of discrimination. First we consider the different forms of discrimination in the market place as covered by the neoclassical literature. Later on we briefly outline the current laws concerning discrimination in the labor market in Belgium.

2.1.1. The neoclassical approach: forms of discrimination

In Becker's well renowned book 'The economics of discrimination' (1957), he states that economic discrimination³ occurs when wage differentiation or association with some persons rather than others, characterizes the market place. This implies that equal productivity, does not always lead to equal pay nor equal opportunities. While Becker concludes that this can be based on apparent, yet mistaken, differences in productivity between groups, he states that this can also be based on differences in taste. None of both are economically reasonable and the latter even seems irrational. The author defines three forms of discrimination. First, there is *employer discrimination*. This occurs when an employer does not hire someone who has a greater marginal value product than its marginal cost. Also employees discriminate, which is called *employee discrimination*. This occurs when an employee's utility decreases if he has to work with people who belong to a minority group. This can lead to self-selection, hoarding and, worst case scenario, segregation of the market place.

³ Discrimination in this context refers to group discrimination. In-group or individual discrimination is inevitable, yet beyond the scope of this master thesis.

Finally, Becker makes a distinction between *consumer and government discrimination*. The first refers to the fact that for consumers, not only the economical features of a service are relevant for their behavior; also the personal features of the employees seem to matter. This leads to the idea that discrimination will be more ubiquitous in occupations that are depicted by intense contact with the consumer. The latter form of discrimination reflects the disproportionate influence of specific groups on policy. A final element worth mentioning is that taste-based discrimination does not immediately imply that the minority group is discriminated against, sometimes it is the other way around and they get treated preferentially compared to the majority group.

Subsequently Arrow (1971) and Phelps (1972) add the concept of statistical discrimination to this literature. Since obtaining correct figures about one's productivity is both costly and time-consuming, hiring decisions are based on imperfect information (Spence, 1973). Employers need to cope with this lack of knowledge. This, in opposition to Becker's taste for discrimination, accounts as rational behavior. Several explanations of how this problem of imperfect information may lead to discrimination in the labor market are put forward. We mention two of them. First, an employer might be keen to use a specific feature, such as sex or skin-color, as a proxy variable for unobservable productivity characteristics, this, irrespective of whether this proxy is valid or not, causes discrimination (Phelps, 1972). A second explanation is put forward by Altonji and Blank (1999) as well as by Aigner and Cain (1977). Their research suggests that since employers are risk-averse and the individual productivity scores of majority groups are both more extensive and more reliable, minority groups tend to be economically discriminated against.

Economical discrimination is clearly a relevant problem. In the next paragraphs we focus more specifically on discrimination based on perceived attractiveness and personality traits, but first we briefly sketch the jurisdictional framework concerning discrimination in Belgium.

2.1.2. Anti-discrimination legislation in Belgium

The *International Labor Organisation* (ILO) is a pioneer when it comes to discrimination in the labor market. Already in 1958, the ILO established convention 111 aiming at the reduction of discrimination (ILO, 1977). This was ratified by the Belgian Government in 1977.

In November 2000, Council Directive 2000/78/EC was passed by the European Council. This directive is also known as *the Employment Equality Directive* and creates a framework with regard to equal treatment in employment and occupation for the European member states (European Council, 2000). The main focus of these guidelines is discrimination based on religion or belief, disability, age

and sexual orientation. Discrimination based on grounds of racial or ethnic origin was already prohibited by Directive 2000/43/EC.

With the *Anti-Discrimination Law of 10 May 2007*, The Employment Equality Directive is transposed to Belgian Legislation. The act condemns discrimination based on the following protected criteria: age, sexual orientation, disability, faith or personal belief, union belief, civil status, birth, wealth, political belief, language, current or future health condition, a physical or genetic characteristic and social origin (Dupont & Onkelinx, 2007). This law is further elaborated and adjusted by CAO 95 (Nationale Arbeidsraad, 2008). Consequently discrimination in the labor market in Belgium is illegal as well as penal. Since our research focusses on how perceived attractiveness and personality traits influence labor market outcomes, it is worth mentioning that the Belgian jurisdiction framework does not address either of these discriminatory grounds directly.

2.1.3. Conclusion

In this section, we briefly addressed the theoretical approaches towards discrimination in the labor market. We found that the existing literature acknowledges two types of discrimination, namely taste-based discrimination and statistical discrimination. While the first is merely founded on differences in preferences, the latter incites discrimination through the link that is made between specific features as well as majority groups and productivity. Discrimination in the labor market can also be categorized by the discriminator; this can be the employer, the employee, the customer and the government. Following, we discussed the current state of affairs of the anti-discrimination legislation in Belgium. The convention of the ILO, the Employment Equality Directive of the European Council and the Belgian Anti-Discrimination Law of May 2007 are the most noteworthy. However, neither perceived attractiveness nor personality traits are directly tackled by legislation so far.

2.2. PERCEIVED ATTRACTIVENESS AND LABOR MARKET OUTCOMES

In this section we summarize the literature on discrimination based on perceived attractiveness and labor market outcomes. We first demarcate the concept perceived attractiveness, followed by an outline of the relevant theories and some empirical evidence.

2.2.1. What?

Beauty is a hard to define concept. It is highly subjective and it differs over cultures and over time, even within the same culture. Yet the standards of beauty evolve rather slowly and seem to be largely agreed upon in a specific culture at one point in time. Nowadays, the same facial features are preferred across several cultures. This development has widely been ascribed to the increasing

internationalization of the media. We conclude that since in the present-day society, standards of beauty are both commonly agreed upon and stable over people's professional careers, we are able to research its effect on labor market outcomes.

2.2.2. The labor market and the beauty premium

Since perceived attractiveness is associated with sociability, dominance, sexual warmth, mental health and social skills, it tends to be linked to success in numerous domains in life (Feingold, 1992). On top of that, it is the most apparent feature of a person, so one might suspect that this affects the outcomes in the labor market. The standard work of Hamermesh and Biddle (1994) is the first to demonstrate this relationship. They study the ties between looks and earnings. They conclude that more attractive people are paid more than their less attractive coworkers. This, although the result is not statistically significant, suggests the idea of a beauty premium in the labor market. On the other hand, penalties for bad looks are significant and considerably larger than the estimated beauty premium, respectively an hourly wage penalization of 9% and a beauty premium of 5%. Fletcher's (2007) research supports these findings. Furthermore he adds that if one enhances his human capital, for instance by following work-related classes, it will more likely lead to increases in wages for very attractive persons.

Perchance counterintuitively, none the previously mentioned elements are more substantial for women than they were for men. This implies that men's looks have a somewhat more pronounced effect on their labor market outcomes. A possible explanation put forward by Hamermesh and Biddle (1994) is the fact that women with below-average looks, are not only penalized in the form of lower hourly wages, but also see their chances on success in marriage as well as working outside the house reduced by their less appealing appearance. The equivalence cannot be found for men that are perceived as less attractive, nor does a parallel beauty premium exist for men and women with above average looks. Ruffle and Shtudiner (2010) even state that attractive women are better off when they omit their picture from their CV. Gender-related jealousy is a likely explanation for this finding (infra).

The foregoing proves the idea that perceived attractiveness does have an impact on labor market outcomes. The question that immediately rises is what the driving sources behind these premia and penalties are. While Hamermesh and Biddle (1994) do not consider occupational crowding as a major explanation for their results, they do find some evidence of appearance-based differences in productivity⁴, consumer as well as employer discrimination. This is particularly relevant since it

⁴ e.g. good-looking attorneys are more likely to convince the jury, compared to their less appealing colleagues.

suggests that look differentials in the labor market outcomes, are not solely productivity-related, but might also be based on taste, which accounts as discrimination. In the next paragraphs we attempt to capture the main grounds that emerge in the existing literature.

First of all, in some occupations, more attractive workers are more productive due to consumer discrimination. These rewards for perceived attractiveness are larger in the private sector. Hamermesh and Biddle's (1998) analysis of the looks of attorneys in the public and the private sector, endorse this. They mention two reasons why consumers might support the beauty premium. First, they prefer spending time with better-looking people and second, they link the perceived attractiveness to their abilities. The differences in labor market outcomes that are based on consumers' tastes, are to be understood as productivity-related. Although these effects are meaningful in occupations with a lot of interaction between customers and the staff, they hardly explain the gross of the differentials in labor market outcomes based on looks.

Bearing this in mind, Mobius and Rosenblat (2006) estimate the effect of the so called confidence channel. They find clear evidence that people that are considered as physically attractive, tend to be markedly more self-confident, which feeds the employer's belief that good looking employees will perform better than their less attractive peers. While perceived attractiveness does enhance the workers' as well as the employers' productivity estimates, it does not enhance their actual productivity. They find that between 15% and 20% of the beauty premium can be ascribed to this confidence channel.

A final ground for looks-based differentials in labor market outcomes, is employer discrimination. The employers' willingness to pay a job applicant is affected by three elements: their resume, statistical and taste-based discrimination. The first element refers to the employee's cognitive skills, this does not require further clarification, the other two, however, do. Statistical discrimination based on perceived attractiveness and personality traits refer to the idea that people that are considered as more attractive than average are seen as more productive and self-confident which feeds their productiveness even further. Regardless of the beliefs the employers hold on perceived attractiveness and productivity and, consequently, regardless of marginal cost and marginal productivity of the job applicant, taste-based discrimination states that employers might simply prefer to be surrounded by attractive people. Although the theoretical distinction is clear-cut, figuring out what type of discrimination takes place in reality is a particularly difficult task.

Several studies further investigate the relationship between looks and labor market outcomes. Most of them focus on a particular aspect of the big picture. Such as Benzeval, Green and Macintyre (2013), who test the persistence of these differentials over ones career using longitudinal data. They

find clear evidence of the persistence of the beauty premium over time. Others examine the effect of height (e.g. Jæger (2011)) or weight (e.g. Caliendo, Gehrsitz (2014), Chang and Weng (2012)). Also variances across countries as well as between different occupations are studied. The previously outlined phenomenon is constantly, although sometimes only modestly, found.

2.2.3. Empirical research: perceived attractiveness and hiring decisions

Some studies focus solely on discrimination in the earliest stage of job search. For instance Boo, Rossi and Urzua, Watkins and Johnston as well as Ruffle and Shtudiner examine the effect of perceived attractiveness on callbacks. They all find that despite equivalent qualifications, attractive people receive considerably more callbacks than unattractive people. We now throw light on each of these studies.

Following the current debate of making resumes compulsory anonymous, so that every plausible discriminatory element such as the name, the gender, a photograph et cetera, has been deleted from the resume. Boo, Rossi and Urzua (2013) design a field experiment, set up in Argentina, to measure whether physical appearance is to be considered as a discriminatory ground in the labor market. They add fictitious pictures that are either made less appealing or, the in opposite case, are beautified, to fictitious resumes. These are then sent out to real job vacancies. Their results show that perceived attractiveness causes differences in hiring decisions. Not only are the more attractive job applicants significantly more frequently invited for a job interview -the callback rate was 36 percent higher compared to their less attractive counterparts-, they are also contacted faster. They conclude that the labor market does in fact discriminate against the less attractive.

Watkins and Johnston (2000) study both the effect of the quality of the resume and the physical appearance of the job applicant. Participants are asked to play the role of a recruiter. They have to evaluate the resumes and pictures and decide whether this candidate would be invited to a job interview, what his starting salary should be and they had to rate the quality of the application. We only mention their results concerning physical appearance. They find that attractiveness is not relevant in case of high-quality applications. When these are only mediocre, perceived attractiveness does have a significant impact. Comparing to mediocre applications with no photograph or a less appealing one, it is clear that an attractive photograph boosts the evaluation of the application. They state that discrimination based on perceived attractiveness does exist in the hiring process. This means that in spite of equivalent abilities, job applicants may encounter different occupation opportunities.

Finally we address Ruffle and Shtudiner's (2010) research on the effect of perceived attractiveness on hiring decisions. They answer more than 2500 job vacancies in Israel. To each of them they send two almost identical resumes, but only one them has a picture attached to it. In half of the cases they send a CV with a picture of an attractive male or female, in the other cases the CV contained a picture of plain-looking man or woman. Their results show clearly that attractive men enjoy almost a double amount of callbacks compared to plain-looking men and a significantly higher callback rate than CV's without a picture. The beauty premium clearly exists and this across industries. As previously mentioned the same does not account for women.

2.2.4. Conclusion

Perceived attractiveness is highly subjective, nonetheless, literature suggests that it has a substantial impact on labor market outcomes. Hamermesh and Biddle, pioneers in this research area, refer to a beauty premium and a wage penalty for the less attractive. The main grounds for these differentials in earnings based on perceived attractiveness are consumer discrimination, the confidence channel as addressed by Mobius and Rosenblat and employer discrimination. The impact of perceived attractiveness is not limited to earnings, it also tends to be persistent and shapes one's career. Focusing upon how perceived attractiveness affects hiring decisions, the existing empirical work suggests that perceived attractiveness enhances the chances of receiving a positive callback quite drastically. This is found despite of equivalent cognitive abilities and across occupations. Applications of a high quality, however, seem to be less affected by perceived attractiveness.

2.3. THE BIG FIVE AND LABOR MARKET OUTCOMES

The Big Five taxonomy represents a substantial body of literature in psychological research and in the field of labor economics. In the following, we solely focus on the latter, which embraces the connection between personality and labor market outcomes. First, we give a short summary of these five personality traits, then we outline the relevance of the big five for job performance and the recruitment process and finally we give an overview of the most striking empirical findings concerning personality traits and labor market outcomes.

2.3.1. What?

One's personality consists of several personality traits, which can be defined as habitual tendencies of thought, emotion and behavior that are both to a large extent genetically inherited and stable over the life cycle⁵ (Saudino, Pedersen, Lichtenstein, McClearn & Plomin, 1997,). Trait theorists

⁵ Yet this is contested, e.g. by Srivastava et al (2003)

believe that these evoke *'recurrent patterns of acting and reacting that simultaneously characterize individuals and differentiate them from others'* (McCrae & Costa, 1999, p. 140). This ought to be interpreted as followed: traits, often represented as a continuum of two opposing characteristics, make a specific kind of behavior more likely what implies that across several observations, this behavior will recur frequently. While there is an infinite number of plausible traits to describe a personality, the Five Factor Model, also known as the Big Five, is the most commonly used and, frankly, nowadays the least contested framework. The five included dimensions are Openness to Experience, Conscientiousness, Extraversion, Agreeableness and Neuroticism. In what follows we briefly discuss these dimensions.

People who are **open to experience** tend to be creative, flexible, imaginative, cultured, curious, original, broad-minded, artistically sensitive and intelligent. The opposite of this continuum refers to those who appreciate norms and conventions and are generally more narrow-minded. **Conscientiousness**, as opposed to lack of direction, is associated with competence, efficiency, order, sense of duty, thoroughness, responsibility, self-discipline and deliberation. It reflects both dependability and volition. **Extraversion** encompasses gregariousness, assertiveness, adventurousness, enthusiasm, warmth and activeness. This dimension is opposed by introversion. A fourth personality trait is **agreeableness** or likeability. This includes altruism, trust, compliance, modesty, cooperativeness and tender-mindedness. Antagonism, characterized by coldness, disagreeableness, is situated on the other side of this continuum. The final dimension, **neuroticism**, as opposed to emotional stability, is commonly linked to a worrying nature, anxiety, anger and hostility, self-consciousness, impulsiveness and vulnerability.

A combination of these traits forms a quite comprehensive idea of one's personality. Having explained the general idea behind the Big Five, we now turn to the relevance of these for labor market outcomes.

2.3.2. Relevance of personality traits in the labor market

For a long time, success in the labor market was believed to be exclusively attributed to cognitive skills, above all the intelligence of a person, since this was supposed to be directly linked to one's productivity. Yet, recently, more attention has been granted to the effect of an individual's personality on labor market outcomes (Heineck & Anger, 2010). Personality traits affect both employers' and employees' labor market decisions. Bowles et al. (2001) state that the employer is, alongside the intelligence of the employees, sensitive to the so-called incentive-enhancing qualities associated with personality traits. These qualities are based on 1) the degree of orientation towards the future, 2) personal efficacy and 3) the discrepancy between marginal disutility from effort and

utility from work. Furthermore they will reward those characteristics that they -possibly unjustly- consider as increasing productivity directly (Nyhus & Pons, 2006). The reality that employers find personality tests useful in the hiring process, endorses these findings. Heckman, Stixrud and Urzua (2006) and Mueller and Plug (2006) focus on how personality traits affect employees' labor market decisions. They advocate that this happens both directly, through the individual's set of productive traits that adds up to his education –e.g. efficacy in jobsearch- and indirectly, through the type of education and occupation that he chooses. Consequently accounting for personality traits is crucial when studying differences in labor market outcomes.

We find that in the existing literature differences in labor market outcomes based on personality traits are most often related to the supposed link between these traits and productivity. This means that the studied differences are based on assumed variances in skills. Yet Mueller and Plug (2006) offer two other possible explanations for these labor market outcomes. First they mention differencing preferences, which is similar to Becker-like taste based discrimination. Also some evidence for occupational sorting was found. For instance they came across a positive association between openness and artistic or investigative jobs. The same accounts for extraversion and enterprising or jobs in the social sector. Another plausible explanation for the differences in labor market outcomes could be mere statistical labor market discrimination based on personality traits. Although this most certainly is the case, it is rather hard to empirically measure the extent to which this causes differences in labor market outcomes (Bertrand & Hallock, 2001).

Hitherto the literature suggests that the traits that are being rewarded, differ across the vast variety of occupations, gender, ethnic or language groups. While a thorough analysis of these differences would lead us too far, we do want to have a general idea of which personality traits are related to premia or penalties. Therefore, in the following we outline the main theoretical and empirical findings concerning the effect of personality traits on respectively job performance, earnings, job stability and unemployment and hiring decisions.

2.3.2.1. The big five and job performance

In this paragraph we first outline some theory. In order to do so, we use the findings of Barrick and Mount, whose study focusses on American men and is widely referred to, and, subsequently, we compare their results with Saldago's and Hertz and Donovan's figures. Afterwards, more empirical research is touched upon.

Barrick and Mount (1991) run a meta-analysis in order to investigate the impact of the Big Five personality traits on three types of job performance in five occupational groups. The three types of

job performance consist of one's job proficiency, training proficiency and personnel data, while professionals, police, managers, sales and skilled/semi-skilled are the analyzed occupational groups. Their results are remarkable. Only conscientiousness is found to be a valid forecaster for all occupational groups as well as for all types of job performance. This is consistent with their hypothesis. The characteristics that are ascribed to this personality trait (supra) are all crucial qualities for carrying out tasks fruitfully in every occupation. Neuroticism was expected to yield the same effect on all job performance types and occupational groups since the traits associated with it are likely to inhibit one's ability to accomplish the work-related tasks. Yet no robust evidence for that matter is found. The same accounts for agreeableness, which, rather unexpectedly, seems to be a bad predictor for the examined job performance criteria. On the contrary, both openness to experience and extraversion prove to be a trustworthy indicator for training proficiency. Extraversion is also of significant relevance when it comes to job proficiency and personnel data, yet only in two of the analyzed occupation groups, namely manager and sales. This does not come as a surprise, since contact with customers or co-workers form a major component of the job, which makes social skills a precondition for accomplishments. The other occupational groups do not require a lot of customer interaction, which makes extraversion far less important. This makes that this trait as such is not a good predictor for job proficiency and personnel data in the occupational groups professionals, police and skilled/semi-skilled. Wrapping up Barrick and Mount's results, conscientiousness is the most valid predictor of job performance; extraversion proves to be a good predictor of job proficiency and personnel data in sales and managers as well as training proficiency across all occupational groups. Training proficiency is also predictable by openness to experience. The other two personality traits, agreeableness and neuroticism, did not lead to conclusive results.

Saldago (1997) carried out a similar study that is limited to Europe, which was not included in the study of Barrick and Mount. The sample of his meta-analysis is considerably smaller, which means that one ought to be cautious in comparing their respective results. Nonetheless two elements become apparent when comparing these studies. First, the correlation between both studies is low and secondly, there appear to be noteworthy differences between their findings (table 1). While similar results are found for conscientiousness, Salgado suggests that neuroticism is an equally valid predictor of job performance in Europe. Also agreeableness proves of significant relevance when it comes to predicting training proficiency. This asserts to the idea that whether personality traits will lead to rewards or penalties in the labor market, differs between cultures.

The meta-analysis of Hurtz and Donovan (2000) generally confirms Barrick and Mount's findings when it comes to conscientiousness. They, too, find that this trait has the highest correlation with overall job performance, but do point out that however the impact of this trait is consistent over all

job performance parameters and occupational groups, its impact is still moderate. People who believe they score high on these personality traits, effectively seem to perform somewhat better than their less conscientious counterparts. Oposed to Barrick and Mount's results, Hurtz and Donovan suggest that emotional stability does have an impact on job performance. This was smaller than the impact of conscientiousness, but appears to be consistent over the different job performance indicators as well as the different occupational groups envisaged. Agreeableness only has an impact on jobs that required interpersonal contact, which is not in line with Barrick and Mount's findings either. Extraversion and openness both have only a minor influence on job performance, consistent with Barrick and Mount's results. The first is only relevant in the occupational category managers and sales while the latter is a predictor for training proficiency.

	Barrick & Mount (1991)	Salgado (1997)	Hurtz and Donovan (2000)
Emotional Stability			
• job proficiency	0.07	0.12	0.15
• training proficiency	0.07	0.18	0.09
• personnel data	0.09	0.08	
Extraversion			
• job proficiency	0.10	0.09	0.09
• training proficiency	0.26	0.02	0.19
• personnel data	0.11	0.08	
Openness			
• job proficiency	-0.03	0.01	0.06
• training proficiency	0.25	0.17	0.14
• personnel data	0.01	0.07	
Agreeableness			
• job proficiency	0.06	-0.01	0.12
• training proficiency	0.10	0.19	0.21
• personnel data	0.14	0.01	
Conscientiousness			
• job proficiency	0.23	0.16	0.24
• training proficiency	0.23	0.24	0.03
• personnel data	0.20	0.07	

Table 1: Comparison between the meta-analysis results of personality traits and job performance criteria from Barrick and Mount (1991), Salgado (1997) and Hurtz and Donovan

2.3.2.2. The big five and earnings, job stability and unemployment

Several scientists further investigate the relations between personality traits and specific features of the labor market. All find clear evidence for the positive association of conscientiousness and labor market outcomes. The effect of the other traits varies across the features studied by the authors. Nyhus and Pons (2006) focus on differences in earnings that might be attributed to personality traits in the Netherlands and mapped these effects for men, women, and different educational groups

separately. We only mention their general conclusions. They figure that conscientiousness tends to be rewarded during the hiring process and is reflected in a higher initial wage. Furthermore emotional stability is positively related to earnings and also agreeableness has a negative effect on wages, especially for women. The fact that agreeable people would be less likely to ask for a raise or have less bargaining power during wage negotiation, is put forward as a probable explanation. Similar results are found in Heineck and Angers' (2010) research on the effects of personality traits on wages in Germany. They perform a joint analysis of cognitive skills, personality traits and earnings. They find significant relationships between cognitive abilities and personality and earnings, which differ across gender. While the cognitive skills mainly affect the wages of the males, the personality is linked to wages of both genders as well as persistent over one's career. Especially the positive relation between conscientiousness and male wages stands out: being very conscientious can lead up to a wage-increase of 5 percent. Also a wage penalty of 6 percent is found for males that are extremely extravert as well as the negative relation between agreeableness and all wages. Mueller and Plug (2006); who study earning differentials based on personality traits in Wisconsin; derive somewhat different findings. They find that openness to experience has the biggest positive effect on male earnings, the same accounts to a lesser extent for emotional stability, while conscientiousness and extraversion do not have any effect at all. Uysal and Pohlmeier (2011) study the effect of personality traits on unemployment duration and job stability. They find that high scores for conscientiousness and low scores for neuroticism are the most important drivers for getting and maintaining a job. This is obviously linked to the conclusion of Schmit, Amel and Ryan (1993) that conscientiousness and openness promote efficient job search, while neuroticism hinders it.

2.3.2.3. The big five and hiring decisions

As the previous shows, a lot of scientific research has been done on understanding the relationship between personality traits, job performance and differences in the labor market. We now narrow our scope and focus on the effects that these traits have on hiring decisions. This is a relevant issue, since it has been shown that recruiters estimate a job applicant's job effectiveness using the predefined categories knowledge, skills, abilities and personality (Cascio, 1995,). The latter takes place both unintentionally and explicitly by using personality tests. We focus upon three studies that address the impact of personality traits and hiring decisions.

Jones, Co, Harter and Yun (2011) study whether personality traits have an effect on recruiters hiring decisions and, if so, what their relative relevance is. First, they show that traits do matter and that they appear to be especially useful when recruiters have a pool of similarly schooled applicants. Furthermore, they find robust evidence that managers put more weight on personality traits than on cognitive skills. These results are consistent with earlier research that pointed out the fact that

employers rank the attitude of the applicants over the years of schooling (first findings, 1995). Also, the weight that recruiters attach to personality traits hardly varies with factors such as the company's financial future, the recruiters' own educational attainment and so on. This is not the case when it comes to cognitive skills since their importance varies quite substantially over the different analyzed factors. An explanation they put forward for the constant and weighty role of personality traits in the hiring process, is the idea that by employing people with the desirable personality traits⁶ the monitoring, termination or quit cost are minimized. Besides that, openness is highly relevant when it comes to acquire the required firm-specific skills.

Also Cole, Field, Giles and Harris (2009) address the issue of personality traits and hiring decisions. They confirm earlier findings that state that recruiters deduct apparent characteristics from the resumes of job applicants. These inferences, however, appear not to be highly reliable nor valid. This means that the perceived personality traits hardly corresponded with the applicants' true Big Five personality scores, except for extraversion and openness. Despite the lack of validity and reliability, the perceived personality traits do affect the recruiters' hiring decisions. Especially perceived extraversion, openness to experience and conscientiousness of the job applicant are sound predictors of the recruiters' subsequent hiring decisions.

Following a conjoint analysis from Moy and Lam (2006), conscientiousness tops the list when it comes to being invited to a job interview and being hired. This means that, in analyzing the recruiters' information process, they find that candidates that looked as if they are well organized, have high standards and are keen on achieving goals, have the best chances in getting invited for a job interview. With an estimated relative importance of 45.41 percent of the recruiters' information processing, conscientiousness appears to be the main predictor of hiring decisions. The trade-off with other attributes of the process is stunning. It outshines cognitive abilities such as communication skills and academic results, which respectively only represented 17.68 percent and 12.17 percent. Their results suggest that the weight that recruiters assign to conscientiousness is vast. The same does not account for the other personality traits that are considered, however, some have a more modest but significant impact on the recruiters' decisions process. These are openness to experience, which seems to matter more in highly complex occupations, and agreeableness, which is especially rewarded when the job consists of quite some team-work.

⁶ In their research these desirable traits consist of responsibility, persistence, initiative, open-mindedness and self-confidence, which largely corresponds with three big five traits, namely conscientiousness, openness and emotional stability.

2.3.3. Conclusion

In the existing literature that addresses the effect of personality traits on labor market outcomes, the Big Five taxonomy is used recurrently. When we consider how these Big Five personality traits affect job performance, we find that Barrick and Mount, Saldago and Hurtz and Donovan agreed upon the relevance of conscientiousness. It seems to be a valid predictor across the considered occupational groups and the indicators for job performance that are used. Hurtz and Donovan do state that this effect remains rather modest. This, however, is the only trait that generates comparable results across the three studies. The effect of personality traits on earnings, unemployment and maintaining a job are highly similar. Only conscientiousness seems to have a significantly positive effect on these elements in all but one study we reviewed and again, the other personality traits do not lead to conclusive results. When we look at how personality traits affect hiring decisions, we find that personality traits matter, especially when the job applicants have equivalent cognitive abilities. Again, conscientiousness has the most outspoken effect. In the existing literature on this subject, conscientiousness has both a significantly positive and a substantial effect on the recruiters hiring decisions. Also some evidence is found for the other personality traits. Extraversion would enhance your chances on being hired; the same accounts for openness but only for complex occupations and agreeableness would do the same for jobs that require teamwork.

2.4. INTERACTION BETWEEN PERCEIVED ATTRACTIVENESS & PERSONALITY TRAITS

In the previous paragraphs we have assessed why both perceived attractiveness and personality traits are relevant when it comes to differences in labor market outcomes. The scope of most studies is limited to the effect of one of these two elements rather than addressing them jointly. There is, however, scientific support that perceived attractiveness and perceived personality traits are correlated. The theories that are relevant for our thesis are the implicit personality theory, which says perceived personality traits are to a large extent based on one's appearance –among which perceived attractiveness accounts as the most prominent feature- and the 'what is beautiful is good'-theses from Dion, Berscheid and Walster (1972). The former implies that due to the possible cross-pollination⁷ between both, foregoing results might be partially picking up the effect of the unaddressed variable. In order to measure the independent impacts as well as make a well-founded comparison between the magnitudes of their effects, it is vital to understand how this correlation works. In the following we first outline the implicit personality theory and the 'what is beautiful is good'-concept. Later prevailing empirical evidence is summarized.

⁷ Cross-pollination means the influence between diverse elements. In this case both perceived attractiveness and personality traits influence labor market outcomes independently, but they also influence each other which affects labor market outcomes as well.

2.4.1. Implicit personality theory

Langlois, Kalakanis, Rubenstein, Larson, Hallam and Smooth (2000) point out that socialization and social expectations are of weighty importance when it comes to judging one by their appearance⁸. More specifically, they state that we automatically link one's appearance to certain personality traits which affects our behavior towards this person. This is most certainly the case when it comes to one's immediately apparent perceived attractiveness. The implicit personality theory throws light on these experiences. The theory is conceptualized by Ashmore and Tuma (1980) in order to query the gender-specific stereotypes and not in order to explain the nature of stereotypes based on perceived attractiveness. Yet up to now it has frequently and moreover successfully been used to understand perceivers' judgments and behavior based on perceived attractiveness. We will briefly outline their main discoveries.

The implicit personality theory refers to the fact that memory schemes are used in dealing with people we do not know. When we encounter a stranger for the first time, we will immediately, with the little empirical information we receive, form several expectations about this person's personality and behavior. The perceivable features upon which we establish these judgments encompass one's gender, posture, attitude, clothing, neatness, speech and perceived attractiveness. Each of these features is interpreted by the perceiver based on his own experiences, the information sources he uses as well as born or socialized associations. The links that exist between perceivable features and personality traits are called memory schemes. We use them in order to, in spite of the limited available information, be able to interact with them appropriately. We are not fully aware of using these schemes; it happens automatically (Bargh & Chartrand, 1999).

Although this theory has proven to be valid since people base their judgments of persons and behavior towards them on the perceivable features, it has been widely criticized. Critics have mainly focused on the fact that how we perceive people based on memory schemes is only seldom a sound representation for the individual's personality. We mention the fact that quite often erroneous or unfounded associations are made as well as the fact that some generalization problems occur, this can both happen over one's lifespan as by treating people alike based on solely one feature (Berk & Anderson, 2000; Secord, 1954). Snyder, Tanke and Berscheid (1977) counter previous criticism to some extent with their self-fulfilling-prophecy. They point to the fact that people adjust their interaction pattern to their perceptions; the target will be treated as if he actually possesses these

⁸ They also mention the lack-of-fit model, which refers to the fact that people that are considered as less attractive, are more likely to be associated with health issues. This is of a particular relevance in case of mate-selection, but has proven to be relevant in explaining differences in labor markets as well, especially when controlling for the effect of weight as mentioned earlier (supra).

specific personality traits. Since interaction is accustomed to the perception, it might well evoke a reaction by the target that is in consistence with the adjusted treatment which means that expected behavior might well be confirmed. The perceiver then sees his initial impression of the target fulfilled, while this might solely be a consequence of his own behavior towards him.

This theory clearly shows an interaction between perceived attractiveness and personality traits. The specific traits that are associated with a person as a rule depend on their attractiveness. From this we can gather that this will certainly be the case in the labor market. Recruiters will review the pictures of the job applicants using memory schemes, assigning personality traits, which will influence their overall judgments of the candidates. This causes differences in labor market outcomes ascribed to interdependence between perceived attractiveness and personality traits. In the next paragraph we show how attractiveness is associated with personality traits, how this affects peoples' life and whether this is well-founded.

2.4.2. What is beautiful is good

Dion et al. (1972) wonder whether Sappho's famous saying 'what is beautiful is good' can nowadays be considered as a truth. Since physical beauty has previously been linked to inner, spiritual and moral beauty (Schiller, 1882), the questions they pose is if individuals do have stereotyped notions of the personality traits owned by people based on their perceived attractiveness, to what extent this is accurate and what causes this correlation. Their research zooms in on two elements. First they try to figure out whether persons that are considered as more physically attractive are assumed to possess more socially desirable personality traits than their less attractive counterparts. This includes likeability, honesty and competence and excludes laziness and low productivity. Secondly, they study whether this implied that better looking people lead better lives. Their conclusions are robust: good-looking people are definitely evaluated as more socially desirable than the unattractive ones. Also support for their second hypothesis is found. More attractive people are presumed to have a happier and more successful life. For instance beautiful men and women are likely to conquer more high-status jobs. The thesis 'what is beautiful is good' is, considering the confirmation of the existence of stereotype that physical attractiveness points towards sociably desirable personality traits, still very much pertinent in the current society.

Eagly, Ashore, Makhija and Longo (1991) put these findings to a test. Their meta-analysis used Rosenberg's evaluative personality categories as a starting point. This means that they examined the correlation between perceived attractiveness and social competence, intellectual competence, concern for others, integrity, adjustment and potency. They find that attractive people were indeed perceived as more socially competent. There is also some evidence of associations between

attractiveness and potency, adjustment and intellectual competence and near zero correlation for integrity and concern for others. Still they argue that the phrase *what is beautiful is good* might be overrated, since perceived attractiveness also has a dark side. It is proven to be correlated with vanity and selfishness.

We continue this paragraph with Feinhold's (1992) findings. He finds a significant relation between attractiveness, lower general social anxiety, popularity, several indicators of mental health and sexual activity. He also discovers a relation between attractiveness and intelligence, this, however, appeared insignificant whereas Jackson, Hunter and Hodge (1995) find a significant relationship between the two. In addition, the links between attractiveness and sociability, locus of control⁹, manipulateness and freedom from self-absorption are non-significant too.

After assessing this, the main question remains: which personality traits are associated with attractiveness. In order to answer this, we appeal to the scientific research of Noor and Evans (2003) and Fink, Neave, Manning and Grammer (2005). They both investigate which personality traits are linked to perceived attractiveness, which is operationally defined by facial symmetry. Noor and Evans, whose study was limited to females, find that the asymmetrical pictures are rated as being significantly less agreeable, more neurotic and less conscientious. Fink et al. figures suggest that Neuroticism is negatively but not significantly associated to facial symmetry. Facial symmetry and extraversion correlate significantly positively, while facial symmetry and both openness and agreeableness are significantly negatively correlated. No significant interaction between perceived attractiveness and conscientiousness is found.

2.4.3. Empirical research

Up till now, empirical research that addresses both perceived attractiveness, personality traits and their interlinkage while studying differences in labor market outcomes, is rare. Only recently this approach has been used to study the labor market. We will subsequently summarize the studies of Scholz and Sicinski, Fletcher and Baert and Decuyper.

Scholz and Sicinski (2011) use the Wisconsin Longitudinal Study to assess whether men's perceived facial attractiveness, based on high school yearbook pictures, is positively correlated with their earnings at the age of 30 and 50 and, if this is the case, what mechanisms could explain these looks-based differences in labor market outcomes. They find a robust and positive correlation between perceived beauty and earnings at both ages, even when IQ and family backgrounds are conditioned, what proves that the beauty premium has a persistent effect on wages in the long run. Several

⁹ This refers to the notion that a person feels that he is in full control of his life. This means he makes the decisions that shape his life and does not feel like a rolling stone whose path is paved by others.

plausible drivers of this positive correlation were tested. They do not find a significant relationship between attractiveness and cognitive skills nor health. They do find three significant links that might explain the life-time effect of attractiveness on earnings. First, there is a significant link between beauty and extracurricular activities. The latter fosters abilities that might be rewarded by the labor market. Second, they find evidence of a positive correlation between attractiveness and confidence which confirms the findings of Mobius and Rosenblat. Finally, a significant correlation between attractiveness and some of the Big Five personality traits is apparent. Their figures show that attractiveness is positively associated with extraversion and negatively with neuroticism. Also a positive correlation between attractiveness and conscientiousness and openness to experience is found, yet these figures are only significant at the 10%-level. Their figures show that mainly extraversion and emotional stability are rewarded by the labor market. The combined effects of the covariates mentioned above (high school experiences, confidence and the big five) account for a portion of the gross attractiveness premium, the other portion is possibly caused by pure employer discrimination, the intrinsic productivity that is related to attractiveness and the fact that attractive men enjoy a greater labor market mobility than their less attractive colleagues.

Fletcher (2013) studies the effect of personality traits on labor market outcomes using sibling differences which allows him to control for a variety of sources of heterogeneity such as perceived attractiveness and family backgrounds. This means that his results map the independent effect of personality traits. Overall his findings suggest that personality traits have a significant impact on labor market outcomes. Most of the effects that he lays bare were already mentioned above. However, the impact of extraversion in his study was striking. This appears to have a significant and positive impact on earnings.

Recently, Baert and Decuyper (2013) set up a lab experiment in order to measure the impact of perceived attractiveness and personality traits on hiring decisions. By addressing this jointly, they are able to identify both the independent and the relative effects. In this experiment students are asked to perform the role of a recruiter. They have to rate the attractiveness and the personality traits of fictitious male job candidates based on photographs and the likeliness of inviting each of them for a job interview. They find that perceived attractiveness has a highly significant and a positive impact on the likelihood of getting invited to a job interview. One standard deviation increase in perceived attractiveness amplifies this probability with approximately a 29% standard deviation. Also highly significant for the chance of invitation are perceived conscientiousness, openness to experience, extraversion and emotional stability. Noteworthy is the fact that their results suggest that conscientiousness is the personality trait that is most highly valued on the labor market and that its impact on hiring decisions is even bigger than the effect of perceived attractiveness; nonetheless

both are to some degree substitutes for each other. Furthermore their research shows that for highly attractive job applicants conscientiousness is rewarded to a lesser extent.

2.4.4. Conclusion

As the implicit personality theory states, one's appearance is automatically linked to a set of personality traits. This means that perceived attractiveness and personality traits are highly correlated. In combination with the 'what is beautiful is good'-theses, we conclude that people who are perceived as more attractive generally are ascribed more favorable personality traits than the less attractive ones. Research shows that attractiveness that is perceived as more than average is more likely to be negatively associated with neuroticism and positively with extraversion. While there are some indications that it is positively correlated with conscientiousness, the correlation between both remains unclear up till now. The empirical studies that address perceived attractiveness and personality traits separately were roughly in line with the findings in the previous sections when it comes to the independent effects of perceived attractiveness and personality traits on labor market outcomes. An important finding is that, perhaps contra-intuitively, conscientiousness seems to have a more outspoken effect on labor market outcomes than perceived attractiveness.

2.5. CAN THE EMPLOYER'S GENDER ENHANCE DISCRIMINATION?

Beauty is in the eye of the beholder as Morrow, McElroy, Stamper and Wilson (1990) have shown. Accordingly it makes sense to inquire into the nature of these beholders, in our case recruiters and employers. Keeping in mind that attractiveness is judged upon subjectively and the ratings are to be treated in that perspective, we want to know whether the characteristics of our beholders influence how job applicants are rated. In this paragraph we focus on one specific characteristic, namely gender. Since research in evolutionary psychology has shown that the weight that is granted to physical attractiveness in mate selection differs of gender, there is ground to believe that even in the labor market interviewer characteristics may systematically bias how attractiveness is judged upon (Buss & Smith, 1993). We illustrate this with the work of Marcus and Miller as well as Nedelec and Beaver. They focus on differences in perception of perceived attractiveness based on the interviewers' sex. Later on, this literature is expanded with some empirical evidence of Baert and Decuyper who study how this characteristic influences the rewards of attractiveness.

Using a live interaction technique Marcus and Miller (2003) find substantial levels of consensus when judging attractiveness irrespective of the sex of the rater. Yet, besides this level of agreement, there appears to be a significant difference between how males and females rate beauty as well as

between how they rate applicants of the same versus opposite sex. More specifically their findings suggest a broad consensus among male raters rating females and bigger variance when males have to rate other men. While discrimination between levels of attractiveness among women is largely agreed upon by the male raters, the male ratings exhibit more idiosyncrasies. This was not found in the female ratings. The consensus amongst the female raters is significant both when rating men and women. They conclude that while both male and female raters generally agree upon levels of attractiveness of targets of the opposite sex, males tend to be more consistent in rating females than women in rating men due to evolutionary pressure¹⁰.

Nedelec and Beaver (2011) further investigate the relevance of the gender of both the interviewer and the applicant in rating attractiveness. They find that the perception of the attractiveness of male respondents is influenced by the gender of the interviewer. More specifically their results indicate that female raters are more likely than male raters to rate a male respondent as physically attractive. This does not apply to the female job applicants. Women's attractiveness is judged in a similar way by both male and female raters. Furthermore, the interviewer's gender also influences the evaluation process of the physical attractiveness of males which might explain why their physical attractiveness is rated differently across gender. Female raters tend to be more eager to use extremes when judging a man's attractiveness: they are both more likely to describe a man as very unattractive and as very attractive. They offer some possible underlying mechanisms of this finding. First, male raters could be simply less accurate in judging the attractiveness of other men. Another plausible argument is that men are indifferent to the physical attractiveness of men. A final explanation they offer is that male raters do not like to use extremes when estimating male attractiveness, since they do not want to feed the idea that they are somewhat interested in the physical attractiveness of another man. All their findings taken into consideration, the authors argue that no such thing as a consensus when rating physical attractiveness irrespective of sex exists, this in contrast to what Marcus and Miller state, and that judgments on perceived attractiveness are always biased by gender.

In their recent study *Better Sexy than Flexy?*, Baert and Decuyper (2014) briefly address the relation between the gender of the students who perform the recruiter's rating tasks and how attractiveness and personality traits are rewarded. Three elements caught their attention. First, male students are more likely to reward both conscientiousness as well as perceived attractiveness. Second, they find a weak yet significant impact of apparent agreeableness among female respondents, whereas there is

¹⁰ We refer to literature on mate selection which shows that for males looks are of a bigger importance than for women. The latter are more influenced by success, status and resources of their possible partners.

no such effect among the male respondents. Finally, a similar pattern is found for openness. This is significantly positively rewarded by the female subject, but not by their male counterparts. Furthermore, when they study the interaction between Big Five personality traits and a low respectively a high index for attractiveness, their figures suggest that only among female subjects that are rating less attractive candidates, perceived extraversion was positively correlated with the probability of getting invited for a job interview. Perceived agreeableness has a negative effect only for highly attractive applicants rated by women and also emotional stability has a more manifest effect in this context.

The gender of the recruiter clearly has an impact on labor market outcomes. First, the gender affects how job applicants are judged, especially when it comes to perceived attractiveness. The literature suggests that recruiters are more accurate at rating the attractiveness of applicants of the opposite sex and states that male recruiters are less likely to use extremes while rating other men. When we consider how perceived attractiveness and personality traits are rewarded, it seems that male recruiters are more prone to being affected by the perceived attractiveness of the applicant as well as by his conscientiousness than female raters. The latter, however, tend to reward agreeableness and openness in general, extraversion if the applicant is considered as less attractive and emotional stability while penalizing agreeableness if the applicant is considered as attractive.

2.6. GENERAL CONCLUSION

After assessing the existing literature, we are now able to formulate founded hypotheses to our research questions. As research on the relationship between perceived attractiveness and labor market outcomes suggests, our first hypothesis is the following:

Hypothesis 1: Men that are perceived as more attractive than average, have a large chance on being hired than their less attractive counterpart that have the same work-related profile.

This implies that we expect to find a significant positive correlation between perceived attractiveness and the chances on getting hired in our research. The second research question addresses the effect of personality traits on hiring chances. The existing literature remains indecisive on the impact of neuroticism. We do, however, expect to find a positive, yet small, correlation between extraversion and hiring decisions. Since the existing body of literature provides some indications that openness and agreeableness also have a positive impact, yet only in specific contexts, we might find some evidence for that matter as well. Nonetheless, the personality trait with the most outspoken effect on hiring decisions appears to be conscientiousness. We expect to find the latter to pop out distinctly in our figures. Keeping in mind what literature states, we formulate our second hypotheses:

Hypothesis 2: Conscientiousness has an outspoken significant and positive effect on men's chances on getting hired. This, to a far lesser extent, also accounts for men who are perceived as more extravert, more open and more agreeable. Neuroticisms does not affect these chances.

Our final hypothesis refers to the literature that focusses on how perceived attractiveness and personality traits are correlated. Mainly by focusing on how these jointly affect hiring decisions, we think that:

Hypothesis 3: Conscientiousness has a bigger impact on hiring decisions than the other personality traits and also than perceived attractiveness.

3. METHODOLOGY: CORRESPONDENCE TEST

In this section, we outline the method we used in order to study unequal treatment in the labor market based on perceived attractiveness and personality traits. The scope of our study is limited to detecting discrimination in the first stage of the hiring process among men who finished their study and enter the labor market.

There is an array of methodological options in order to measure this type of discrimination. As outlined by Pager and Sheperd (2008), we could have relied on perception. This method gives fruitful insight, but due to its personal emphasis, it tends to over- or underestimate the real degree of discrimination. Other methods that are used to measure discrimination are interviews or focus groups with recruiters. Here, the same problem emerges, people tend to answer socially desirable which biases the results. Also legislation could be studied, but neither attractiveness nor personality traits are explicitly mentioned in the Belgian anti-discrimination legislation (*supra*). Therefore this method is not suitable. Statistical analysis of existing administrative data, such as reviewing complaints relating to discrimination in the labor market, copes with some severe limitations as well since these generally do not address attractiveness or personality directly. The method we use is the field experiment. This method combines field-based research with commonly used experimental methods (Pager, 2007). The two types of field experiments that are most often used to study discrimination in the labor market, are audit or situation tests and correspondence tests. After briefly theoretically addressing both and explicating why we chose to use a correspondence test, we thoroughly outline how our test was set up. Finally we point out some limitations to our research.

3.1.FIELD EXPERIMENTS: AUDIT VS. CORRESPONDENCE TESTS

3.1.1. Audit tests

An audit test, or situation test, uses a personal approach in researching the labor market. In this methodology pairs of testers that are sent out to job interviews are matched: all probable job-relevant qualifications and characteristics are harmonized as closely as possible, except for the distinctive feature that, in that specific study, is considered as a plausible discrimination ground. This means, for instance, that when studying gender related discrimination in the labor market, the profile of male and female job applicants need to be identical, except for their gender. These pairs are given a highly comparable resume and are trained to respond to the interviewers' questions so that they give an equivalent impression. The data-collection happens under close supervision in order to guaranty maximum comparability. There are always several matched pairs in each study, to prevent biased results (Pager, 2007).

This form of field experiment is used in three ways. This first manner of audit testing consists of applications to a job vacancy by phone. This implies that applicants only differ when it comes to accent or tone of the voice. In this case, the research is limited to discrimination in the first stage of hiring. A second approach consists of direct contact with the recruiter by responding to advertisements in the newspaper that require personal attendance of as a spontaneous query vis-à-vis job availability. A final way of performing an audit test focusses both on discrimination in the first stage of the hiring process by sending out matched applications and reporting the callback, followed by sending out those candidates that were invited to a job-interview. The latter approach encompasses all stages of discrimination in the hiring process (Riach and Rich, 2002; Pager, 2007; McGinnity et al., 2009).

This methodology has up till now proven to lead to rewarding insights when it comes to discrimination in the labor market. Nonetheless some severe criticisms have been raised about this personal approach. First, although matching pairs is celebrated in theory, it is particularly difficult to match two testers in reality (Heckman and Siegelman, 1993). Questions about which criteria to match, the notion that making candidates fully equivalent is unfeasible, even when professional actors are used, and the likelihood of positive discrimination in case of successful matching, prove to be weak spots of this research method (Riach & Rich, 2002; Bassanini & Saint-Martin, 2008). Also, even when testers are given a careful training, minority applicants might –consciously or unconsciously- be keen on proving the existence of discrimination and by doing this, biasing the results (Heckman, 1998; Bertrand & Mullainathan, 2004). A final objection is that, given these lacunas, performing an audit test is costly and time intensive (Pager, 2007).

3.1.2. Correspondence test

A second way to perform field experiments in the labor market is by carrying out a correspondence test. This systematically improved method gained popularity during the last ten years when it comes to studying discrimination in the labor market. It is widely used to study differences in labor market outcomes based on race and racial discrimination as well as labor market discrimination based on gender or sexual orientation. This method is also successfully applied in other contexts, such as discrimination in the housing market (Riach & Rich, 2002; Foster et al., 2002).

This method involves creating prudently matched pairs of resumes and cover letters that are perfectly equivalent, except for the one characteristic that is focused upon in the study. In order to avoid detection, there must be some differences between the applications of both candidates, e.g. the used font, the lay-out or the sports they prefer to play in their spare time. All of which are irrelevant for the job they are applying to. To prevent that these irrelevant details do bias the results,

the resumes and cover letters are alternately assigned to an application by the minority respectively the majority group. The resumes and cover letters of both applicants are then sent, with an interval of maximum two days, to publicized job openings. These callbacks, which are promptly declined in case of a positive reaction to minimize inconvenience, are the core of the research. They are carefully registered and once the data-collection is completed, analyzed in order to detect discrimination based on the studied feature in the labor market (Riach & Rich, 2002).

The main advantage of this method is that no real job applicants are required. This implies that researchers can carefully match the pairs of applications without having to deal with the complexities concerning matching that occurs when sending out testers. The researchers thus have far more control over their experimental set-up, which lowers the chances of biased results. Furthermore this method is cheaper and to some extent less time-consuming than in-person audits. However, there are also some downsides. First, only the initial stage of the hiring procedure can be studied using a correspondence test. This means that if discrimination in labor market occurs in a later stage, it will be completely overlooked in studies that solely rely on this kind of method (Bovenkerk, 1992). The researcher needs to bear this important limitation in mind when drawing conclusions and sketching policy implications. Second, it has proven to be quite challenging to design resumes that differ so that discrimination in the labor market can be captured (Riach & Rich, 2002). This means that it is challenging to translate the theoretical discrimination grounds into the CV's: some authors opt to use race-specific names when studying racial discrimination. Yet this is not always an adequate strategy, since some discriminatory grounds cannot be operationalized through applicants' names. Others choose to make the discriminatory ground explicit by incorporating it in the job applicants' interest. Pretesting the applications is therefore vital. A final restraint Pager (2007) recognizes is that the sample of jobs is limited. She refers to the fact that some occupations, especially low-wage or first-entry jobs, require in-person applications. McGinnity, Nelson, Lunn and Quinn (2009) confirm the latter finding.

3.1.3. Ethical aspects

Field experiments like audit tests and correspondence tests raise ethical questions. These methodologies are characterized by deception and the impossibility to make use of the idea of informed consent which generates criticism. This deception refers to the fact that recruiters, the test-subjects, are made to believe that the applications that are sent out are real and more importantly that the candidates are genuinely interested in the job and are willing and able to accept a potential job offer. In the past, some studies were even banned due to ethical complaints, e.g. the ILO-field experiment on discrimination that was halted by the Social Research Council of Sweden (Riach &

Rich, 2004). While acknowledging the existence of the ethical grounds that the critics put forward, there are several weighty arguments that do justify the use of these field experiments. We enlist them in the following paragraph.

The first and foremost argument is methodological. When the employers would be informed about the set-up of the research, the whole idea behind the correspondence test would be undermined. This is due to the fact that informed recruiters would change their behavior, which would lead to biased results that are not scientifically valid. Moreover, no other method is capable of collecting this kind of data that is fundamental to study discrimination in the labor market. In order for the results to be transparent, objective and accurate, deception and the lack of informed consent are prerequisites. Second, the level of inconvenience for the recruiter is limited to the minimum by promptly declining invitations for job interviews. Also the personal records of the recruiters and their companies are not made public. No company will be pilloried individually nor will there be any form of prosecution following the data-collection (Bovenkerk, 1992). Furthermore, as Fix et al. (1993) point out, our test-subjects cannot refer to violations of privacy since their actions are commercial and the vacancies are made public. Another argument that is put forward by Riach and Rich (2004) is that the market segment itself is characterized by deception. Bok (1978) adds that this reputation as such is not a sufficient ground for setting up experiments that use deception. Nonetheless, she states that exceptions can be made when these market segments potentially cause damage to the society, which on the occasion of discrimination in the labor market is clearly the case (McGinnity et al., 2009).

The ethical problems that come about with field experiments, are nuanced by the fact that these methodologies are the best when it comes to studying discrimination in the labor market and these problems are prerequisites in order to obtain reliable results, as well as by the point that the inconvenience for recruiters is minimal, the reality that the market segment itself uses deception and by doing so causes harm to the society and the fact that no test-subject will be personally scorned. The merits of field experiments clearly outweigh their costs.

3.1.4. Why did we use a correspondence test?

As was already mentioned above, field experiments are the first-rate method to study discrimination in the labor market. In this master's thesis we chose to set up a correspondence test, since this, given the limited amount of time and resources, grants us the vastest playing field. We can control all elements in the applicants' profiles carefully, we are fully in charge of the data collection and we are able to register and report our findings transparently. Furthermore the correspondence test is not

considered as a complex methodology and, moreover, if it is set up and carried out accurately, it generates sound and robust information about discrimination in the labor market.

3.2. THE SET-UP

After assessing the most commonly used field-experimental method to study discrimination in the labor market, the ethical aspects and clarifying why we chose to perform a correspondence study, we now zoom in on the experimental set-up used in order to collect the data necessary for this thesis. We respectively discuss the resumes we sent out, the photographs we used, the vacancies we applied to and the application itself.

3.2.1. Resumes

As was addressed in the previous section, we need to design pairs of carefully matched resumes in order to run a valid correspondence test. For this study, two pairs of resumes are created. The first pair is aimed at applying for high-skilled jobs; the second pair is made to send out to middle-skilled vacancies. In both cases CV A and CV B (Appendix 1.1, 1.2, 1.3, 1.4) are equal in human capital, yet differ in lay-out, letter type, address, date of birth and extracurricular activities. Since we have full control of what is mentioned in the resumes, all the information that employers use to make their hiring decisions is made rigorously equivalent for each pair of resumes. This in order to guarantee that the resumes would not be to blame for differences in employers' behavior: CV A and CV B needs to be generated such that they are judged upon identically, both when it comes to the high-skilled and the middle-skilled applicants.

The high-skilled applicants are all males born in 1991, who went to the same school, Lessius Hogeschool Antwerpen, and studied the same subject, namely a master in Business Management. Furthermore they graduated at the same time with identical honors. The middle-skilled applicants are all males born in 1995. They all graduated in June 2013 and hold the same secondary education degree. The degrees that are encompassed in our research are a secondary degree in commerce, accounting, tourism, informatics or office management-languages. Type-A and Type-B applicants went to a different secondary high school. Nonetheless, since both schools belong to the same type of education and have an analogous reputation, this can hardly form a ground for discrimination in the labor market.

Both in the high-skilled and the middle-skilled resumes, a fictional name is included. For each pair of resumes we have four different names, this means that in total eight names are used. By using different names for the high and the middle-skilled, we limit the risk of being detected. Nonetheless,

we decide not to apply to the same employer, which is assured by enlisting all the employers in a black list. The names of our applicants¹¹ are all typically Flemish sounding names for men born in the nineties. Each of these assigned names is linked to an email address from a popular mail-operator and a mobile phone number that is registered with a common provider and has a personalized voicemail message recorded by four different men in their mid-twenties.

Also between the pairs of resumes, equivalence is necessary to a large extent in order to validly compare the collected data. We already mentioned that all applicants are males. They all have the Belgian nationality and reside in the suburbs of Antwerp¹². None of them is ever confronted with grade retention. The marital status 'unmarried' is included in all resumes. They all mention the possession of a driver's license and basic computer skills. Dutch is in all cases stated as the mother tongue as well as a proficient knowledge of English and French. Finally, each of the resumes refer to similar extra-curricular activities, both creative and athletic and to an identical number of months of work experience in comparable student jobs.

The resumes are always combined with a cover letter (Appendix 2.1, 2.2, 2.3, 2.4). Different cover letters for the different levels of schooling are used. Each of these cover letters add up to the general notion already apparent in the resumes: the applicant is motivated and skilled for the specific job.

3.2.2. Photographs

The job applicants' perceived attractiveness and personality traits are revealed through a photograph that is attached to the resume. In total we use four pictures that show the facial features and the upper body of the fictitious candidate. Since we have eight profiles, four middle-skilled and four high-skilled (*supra*), each of the chosen pictures corresponds with two assigned names, one name that belongs to the high-skilled applicant and another one that belong to the middle-skilled applicant. Every picture depicts a specific posture, facial expression and differs as regards attractiveness, which correlates to an identifiable perceived attractiveness and personality traits. In the next paragraphs we will explain how these pictures were chosen and identify their characteristics.

Since attractiveness is highly subjective¹¹, it is a tough task to find pictures which facial features and body structures are generally interpreted as more attractive than average, respectively less attractive than average. This accounts, to lesser extent, to personality traits as well. Yet, in order to answer our research question, we need pictures that are conclusive when it comes to perceived attractiveness

¹¹ The four names that were used in the high-skilled resumes are Dieter De Bruyne, Hans Van Damme, Joris Roman and Rob De Schutter. The middle-skilled applicants' names were Peter Baert, Thomas De Groot, Sven De Clerck en Bart De Sutter. These names were all checked for name-related stereotypes.

¹² This was a fictional postal address. In total, four of these were used: the A-type and B-type in both high-skilled and middle-skilled profiles all contained a different address.

and personality traits. We use pictures that are previously used in a study performed by Baert and Decuyper (2014), in which 195 students, in the role of a recruiter, have to judge both the attractiveness and the personality traits based on a '10-item TIPI'-test of 22 pictures of male job applicants they are shown. Of these set of pictures, four are chosen for our research.

The first picture (appendix 3.1) scores good at both perceived attractiveness as personality traits. The latter is especially apparent in the positive ratings of this person's extraversion, agreeableness, emotional stability and openness. In Baert & Decuyper (2014) this picture is granted the highest probability of invitation to a job interview. The second picture's (appendix 3.2) perceived attractiveness is rated as mediocre. On the other hand, globally its perceived personality traits scores well. Especially conscientiousness gets a good rating. His chances of getting invited for a job interview are also quite high. Picture number three (appendix 3.3) gets a good rating for perceived attractiveness, but globally a mediocre one when it comes to personality traits. For this picture likelihood of getting invited to a job interview is high, yet significantly smaller than is the case for the first two pictures. The final picture we use (appendix 3.4) gets a bad global rating in both cases. His perceived attractiveness scores poorly and negative scores for extraversion, openness and emotional stability are found. Of the whole sample, this picture is the least likely to get a positive reaction when it comes to getting an invite for a job interview. This last picture is set as the reference picture in our research.

These pictures all have a distinct and unique combination of rating of perceived attractiveness and personality traits. This makes it possible for us to study both the relative and the independent effect of perceived attractiveness and personality traits on labor market outcomes.

3.2.3. Vacancies and application

From November 2013 till March 2014, we scanned the website of the Flemish public employment service VDAB. In their extensive job database, we searched for vacancies that matched our resumes as closely as possible. Therefore we were restricted to jobs which did not explicitly require work experience. Moreover we solely applied to jobs that were recently posted¹³. In order to find vacancies that matched the high-skilled resume, we primarily searched for vacancies that requested their master's degree in Business management. We expanded our search area by applying to vacancies that solely required a bachelor's degree in Business management and we also used search terms such as Human Resources, Accountant, Assistant-Accountant, Insurance & Law, Marketing Management, Finance and Fiscality in their search engine. In the latter case, we only applied to those vacancies that requested a high-skilled degree. We geographically limited the scope of our

¹³ This in order to prevent applying to vacancies that are already filled, but not yet removed.

applications to Antwerp, Limburg and the Brussels-Capital Region. For the middle-skilled resumes, analogous vacancy-search methods were used. We searched the database for jobs that corresponded with a secondary degree in commerce, accounting, tourism, informatics or office management-languages and extended our search by using search terms such as Sales, General Administration, Human Resources, ICT & Internet, Finance, Insurance & Law, Management, Marketing and Logistics and Transport in the VDAB search engine. We then selected those vacancies that did not require a high-skilled degree. In order to find enough vacancies in our limited amount of time, the geographical scope was enlarged. Next to Antwerp, Limburg and the Brussel-Capital Region, we also applied to job vacancies located in Flemish Brabant and East Flanders.

We responded to each of these vacancies by sending out two e-mails or by filling out two application forms. Both contained a resume, the corresponding cover letter and one of the four photographs. These were alternately assigned to a Type A and a Type B application in order to ensure independence of callbacks (figure 1). These were sent out to vacancies –or respectively filled out– with an interval from minimum 8 up to maximum 36 hours. This means that when the first application contained a resume and a corresponding cover letter from the A-type, the second one that contained the B-type and vice versa was sent out with a delay of approximately one day. This implies that we had a set of eight different applications per schooling level, which we all sent out 66 times. In each case we registered the date we sent out the application, the name of the firm, their postal address, the date on which the application was submitted and adapted for the last time. We also mentioned whether our applicants profiles were fully consistent with the vacancy, whether the vacancy referred to a full-time or part-time position and finally whether this job offer had a temporary nature or a unspecified duration.

Vacancy 1	TYPE A picture 1	Interval of 8 to 36 hours	TYPE B Picture 2
Vacancy 2	TYPE A Picture 2		TYPE B picture 1
Vacancy 3	TYPE B Picture 2		TYPE A picture 1
Vacancy 4	TYPE B picture 1		TYPE A Picture 2
Vacancy 5	TYPE A picture 1		TYPE B Picture 3
Vacancy 6	TYPE A Picture 3		TYPE B picture 1
Vacancy 7	TYPE B Picture 3		TYPE A picture 1
Vacancy 8	TYPE B picture 1		TYPE A Picture 3
Vacancy 9	TYPE A picture 1		TYPE B Picture 4
Vacancy 10	TYPE A Picture 4		TYPE B Picture 1
Vacancy 11	TYPE B Picture 4		TYPE A picture 1
Vacancy 12	TYPE B picture 1		TYPE A Picture 4
Vacancy 13	TYPE A Picture 2		TYPE B Picture 3
Vacancy 14	TYPE A Picture 3		TYPE B Picture 2
Vacancy 15	TYPE B Picture 3		TYPE A Picture 2
Vacancy 16	TYPE B Picture 2		TYPE A Picture 3
Vacancy 17	TYPE A Picture 2		TYPE B Picture 4
Vacancy 18	TYPE A Picture 4		TYPE B Picture 2
Vacancy 19	TYPE B Picture 4		TYPE A Picture 2
Vacancy 20	TYPE B Picture 2		TYPE A Picture 4
Vacancy 21	TYPE A Picture 3		TYPE B Picture 4
Vacancy 22	TYPE A Picture 4		TYPE B Picture 3
Vacancy 23	TYPE B Picture 4		TYPE A Picture 3
Vacancy 24	TYPE B Picture 3		TYPE A Picture 4

Figure 1: application procedure that was used for both high-skilled & middle-skilled data-collection

3.3.CALLBACK

Responses to our applications, the so-called callback, were received through two different channels: e-mail and voicemail box that belonged to each of our assigned names. Since we used fictional postal addresses, all callbacks that were sent out by regular mail, are not accounted for in this study, but, as Baert, Cockx, Gheyle and Vandamme (2014) mention, this channel is hardly used by recruiters nowadays. We registered the date, the name and gender of the recruiter and the exact content of their reactions, which are available on request, and in order to minimize the inconvenience we immediately declined all forms of positive callback. In the following paragraph we discuss how callback was registered and the two types of positive callback we use in this thesis.

The callback we received was carefully coded after the registration. Five codes were used (table 2). Ranging from no reaction over invitation for a job interview, other positive reactions or the promise to get in touch in the near future to a rejection. Other positive reactions encompassed requests for more information from the applicant, request to get in touch with the recruiter or alternative job proposals by the recruiter. The code that encompassed the promise to get in touch in near future was later on, depending on whether this promise was met, changed to the code invitation for a job interview or the code other positive reactions or the code rejection. The latter code was used when this promise was not yet met when finalizing our data-collection. Responses that were received over 30 days after sending out the application were neglected and accordingly coded as no response.

Callback codes	Meaning
0	No response
1	Invitation for a job interview
2	Other positive reactions (request to submit more information, fill out forms or send documents, request to call back, an alternative job offer)
3	Promise to get back in touch in the near future
4	Rejection

Table 2: Callback codes

It is important to mention that we consider two types of positive callback in this Master's thesis. The first one is positive callback sensu stricto. In this case only reactions where candidates are invited to a job interview for the job they applied to are considered as positive callback. Positive callback sensu

lato encompasses besides positive callback *sensu stricto*, also other positive reactions such as an alternative job proposal, a request to call back or to give more information or specific documents as relevant.

A final key matter concerning the reporting and interpreting of callback is the definition of discrimination we use in this thesis. If the type-A and the type-B applicant receive a different kind of callback, we consider this as an expression of discrimination in the labor market based on perceived attractiveness and personality traits. However we recognize the idea put forward by Heckman and Siegelman (1993), that other random elements might generate a differential treatment by an employer. We interpret an identically coded callback of both applicants as a symmetrical treatment by the recruiter. That is no apparent discrimination took place. Opposed to McIntosh and Smith (1974) who do not take into account those cases where both candidates were rejected since there might be a plethora of other reasons why applicants are not invited for a job interview, we do consider these events as a useful indicator of discrimination in the labor market because both applicants are still treated equally.

3.4.LIMITATIONS

As addressed in the first paragraph of this methodology section, two central limitations to correspondence tests are the problem of creating resumes that signalize the key plausibly discriminatory characteristics of the applicants and the limited sample of jobs. While the first is largely controlled for, the second issue remains highly relevant. Not only are we limited to entry-level jobs, we also solely focus on specific categories of occupations and only used the job-database that is provided by the Flemish public employment service VDAB. It is possible that discrimination based on perceived attractiveness and personality traits manifests itself differently in other sectors. It is important to signal that our results could be over- or even underestimating the real discrimination patterns in the Flemish labor market.

A second limitation is also inherent to a correspondence test. This methodology refrains us from investigating the complete hiring procedure which implies that our conclusions are limited to the first stage of the hiring decision, namely the invitation to a job interview. While Bertrand and Mullainathan (2004) claim that this stage is crucial since discrimination in the initial stage is a preamble for discriminatory in the following phases. Nonetheless, our research does not allow to posture statements about discrimination in the Flemish labor market based on perceived attractiveness and personality traits in later stages of the selection process, in job offerings, in opportunities during one's career nor in wages. This is an important limitation since the literature

suggest that in later stages of the hiring process this form of discrimination is apparent and perceived attractiveness and personality traits seem to correlate with job opportunities and wages.

Finally two other limitations that are specific for our research must be mentioned. First, our research only focused on males. This means that we cannot make any statement about how the Flemish labor market treats females that differ in perceived attractiveness and personality traits. Second, our research does not allow making distinctions between Becker-like taste-based discrimination and statistical discrimination (Heckman, 1998).

4. RESULTS AND DISCUSSION

In this section we first discuss the descriptive statistics of the data set we used, which encompasses a general overview and the net discriminatory rate. Second, we thoroughly address the results of our regression analyses. The final paragraph discusses our findings and tries to formulate answers to our research questions.

4.1. DESCRIPTIVE STATISTICS

The following paragraphs sketch the main findings of the descriptive statistics of our data set. We first give a general overview in which some facts and figures are pointed out. Then we address the issue of the net discrimination rate, which, due to the limited scope of our data set, is merely used as descriptive.

4.1.1. General overview

Before reporting the results of our research, we briefly discuss the data set we use. In total, we sent out 1056 applications to 528 vacancies. As mentioned in the methodology section above, each vacancy was responded to with a matched pair of resumes. This implies that each picture was sent out just as much as the others, namely 264 times each, as well as that each of the 6 matched pairs was sent out just as much, namely 88 times each. In the table below, we summarize how these applications are distributed, covering both the absolute and relative numbers (table 3).

We sent out 528 applications to 264 vacancies that required a middle-skilled profile and 528 applications to 264 vacancies that required a high-skilled profile. This allows us to check whether discrimination based on perceived attractiveness and personality traits differs over the skill-level. Since we had full control over how many applications we sent out of respectively middle-skilled and high-skilled candidates, we decided to evenly divide our total number of applications over these two categories.

We also took account of the recruiter's gender in our data set. The latter can be split up into three sub-sets. One set that only consists of male recruiters, which contains 368 applications to 184 vacancies, another set that solely encompasses the female recruiters, which involves 602 applications to 301 vacancies, and a final set which contains those recruiters whose gender is unclear or not mentioned. We will not use the third set, but the others might reveal useful information about how the gender of the recruiter affects discrimination in the labor market based on perceived attractiveness and personality traits. The data set was not equally distributed over the male and the female sub-set since we did not have control over the recruiters' gender.

Number of applications sent	Absolute	Relative
Total	1056	100 %
Schooling-level		
Middle-skilled	528	50 %
High-skilled	528	50 %
Gender of the recruiter		
Male	368	35 %
Female	602	57 %
Unknown	86	8 %

Table 3: Characteristics of the data set used

4.1.2. Net discrimination rate

The net discrimination rate measures the behavior of the recruiter. More specifically this rate is to be interpreted as the expected probability that discrimination occurs per vacancy for which at least one of the two job applicants received positive callback. While the recruiter can treat both applicants for the same vacancy equally -for instance rejecting both, inviting both or sending out the positive callback *sensu lato* to both -, he might also differentiate in their treatment. The latter can take several forms. The first candidate can receive a positive reaction *sensu strictu*, while the second applicant is rejected, or vice versa. The same accounts when the first candidate receives a positive callback *sensu lato*, while the other doesn't, or the other way around. While there are arguments at hand that consider the case where one of the candidates gets a positive callback *sensu strictu* and the other receives a positive callback *sensu lato* as a differential treatment, we will not discuss this differential below. Furthermore, we consider the cases where both applicants did not receive any response as a non-observation.

In the following two tables, we summarize the response that our applicants received. We do this by comparing the pictures pairwise and by cataloguing their callback in four categories, namely 'none of both invited', 'both invited', 'only first picture invited' and 'only second picture invited'. While the first two categories point to a symmetrical treatment of both pictures, the other two suggest a differential treatment. The first table only takes into account positive callback *sensu stricto* (table 4), while in the second table the scope of the positive callback is enlarged to *sensu lato* (table 5). The two remainder columns in both tables contain the calculated net discrimination rate, in which case a minus sign suggests discrimination as to the first picture whereas a plus sign indicates discrimination towards the second picture, and the χ^2 -test that measures the statistical significance of the net-discrimination rate.

Applications	Number of vacancies	None of both invited	Both invited	Only first picture invited	Only second picture invited	Net discrimination rate	χ^2
Picture 1 vs picture 2	88	81	3	0	4	-0.571**	4,000
Picture 1 vs picture 3	88	84	2	2	0	0.500	2,000
Picture 1 vs picture 4	88	76	7	4	1	0.250	1,800
Picture 2 vs picture 3	88	78	9	1	0	0.100	1,000
Picture 2 vs picture 4	88	79	3	5	1	0.444	2,667
Picture 3 vs picture 4	88	83	1	3	1	0.400	1,000

Table 4: Callback details and Net-discrimination rate – sensu stricto

As table 4 shows, by comparing the callback sensu stricto of the pictures two by two, only one case in which the net discrimination rate is different from zero and, moreover, appears statically significant at the 5%-level. This implies that recruiters prefer picture 2 over picture 1. This preference is likely to be ascribed to the higher score for conscientiousness and is also depicted in our computations of all the other net discrimination rates. The comparison of the callback of picture 1 and picture 2 do produce a net-discrimination rate of -0.571, but in this case, giving the value of the χ^2 -test, the zero-hypothesis cannot be rejected. The other pairwise comparisons do not lead to any significant results either. This is probably due to the fact that our sample is too small.

The table below addresses the same issue using the identical techniques, but this time callback sensu lato is considered. Here, no net-discrimination rate that differs from zero pops up. Also in this case, the small size of our data set might be the culprit of the lack of significant results.

Applications	Number of vacancies	None of both invited	Both invited	Only first picture invited	Only second picture invited	Net discrimination rate	χ^2
Picture 1 vs picture 2	88	65	12	3	8	-0.217	2,273
Picture 1 vs picture 3	88	71	9	6	2	0.235	2,000
Picture 1 vs picture 4	88	64	14	6	4	0.083	0,400
Picture 2 vs picture 3	88	78	9	1	0	0.100	1,000
Picture 2 vs picture 4	88	65	18	3	2	0.043	0,200
Picture 3 vs picture 4	88	73	8	5	2	0.200	1,286

Table 5: Callback details and Net-discrimination rate – sensu lato

We conclude this paragraph by stating that both when we consider callback *sensu stricto* and *sensu lato*, no net discriminations rates are found that allude upon a preferential rank where picture 2 is preferred above picture 1, which is in turn preferred above picture 3 that is then preferred above picture 4. We do, however, find a significant net discrimination rate of -0.571 when we study the *sensu stricto* and are comparing picture 1 and picture 2. Due to the small size of our sample, we interpret these results as merely descriptive, which implies that we will not draw any conclusions concerning our research questions just yet. In the following paragraphs we step up our game and use regression analyses in order to formulate sound answers.

4.2. REGRESSION ANALYSES

In the following paragraphs, we first outline how perceived attractiveness and personality traits are correlated in our research. Second, some guidelines regarding our regression analyses are formulated. Then we outline the results that came out of the regression analyses on our data set. We start with the basic regressions, followed by the regressions on the sub-sets that contained respectively the middle- and the high-skilled applications and finally we refer to the results that came out of the regressions on the sub-sets of male and female recruiters.

4.2.1. Correlation between perceived attractiveness and personality traits

A first element we consider is how our independent variables are correlated with each other. It immediately becomes clear that perceived attractiveness of men is highly correlated with all of the Big Five personality traits (table 6).

	Attractiveness (standardized)	Conscientiousness (standardized)	Extraversion (standardized)	Emotional stability (standardized)	Agreeableness (standardized)	Openness (standardized)
Attractiveness (standardized)	1.000					
Conscientiousness (standardized)	0.382	1.000				
Extraversion (standardized)	0.712	0.891	1.000			
Emotional stability (standardized)	0.928	0.464	0.814	1.000		
Agreeableness (standardized)	0.669	0.592	0.856	0.893	1.000	
Openness (standardized)	0.817	0.722	0.956	0.941	0.947	1.000

The values of attractiveness and the Big Five Personality traits are standardized by subtracting their median value from the four used pictures and by dividing this result by the standard deviation of these pictures.

Table 6 Correlation between perceived attractiveness and each the Big Five personality traits and the correlation between these traits

Especially the correlations between perceived attractiveness and emotional stability and perceived attractiveness and openness stand out. Also the interdependent correlation between the Big Five personality traits is striking. In order to prevent the problem of multi-collinearity, we persistently leave several of the reference categories out of our regression analyses. Nonetheless, we need to keep this in mind while interpreting our results.

4.2.2. Regression analyses: some guidelines

Before turning to the actual regression analyses, we clarify which regression models we use and explain the choices we made concerning the variables that are addressed by these models. Also some clarification with respect to the problem of multicollinearity and the F-tests is incorporated in this paragraph.

First, we run several regressions in which we used different data sets, that is we regress both the complete data set, the sub-sets that differ in skill-level and the sub-sets in which the recruiters' gender differs. In all the regression analyses, the same set of regression models is used. Each of these models uses a different combination of variables. We summarize these in the table below (table 7). It is important to stress that the depending variable alters according to whether callback *sensu stricto* or callback *sensu lato* is considered.

Number in table	Regression model
(1)	$\alpha + \beta_{11} \text{ Picture 1} + \beta_{12} \text{ Picture 2} + \beta_{13} \text{ Picture 3} + \epsilon$
(2)	$\alpha + \beta_{21} \text{ Attractiveness} + \epsilon$
(3)	$\alpha + \beta_{31} \text{ Conscientiousness} + \epsilon$
(4)	$\alpha + \beta_{41} \text{ Attractiveness} + \beta_{42} \text{ Conscientiousness} + \epsilon$
(5)	$\alpha + \beta_{51} \text{ Attractiveness} + \beta_{52} \text{ Conscientiousness} + \beta_{53} \text{ Extraversion} + \epsilon$
(6)	$\alpha + \beta_{61} \text{ Attractiveness} + \beta_{62} \text{ Conscientiousness} + \beta_{63} \text{ Emotional Stability} + \epsilon$
(7)	$\alpha + \beta_{71} \text{ Attractiveness} + \beta_{72} \text{ Conscientiousness} + \beta_{73} \text{ Agreeableness} + \epsilon$
(8)	$\alpha + \beta_{81} \text{ Attractiveness} + \beta_{82} \text{ Conscientiousness} + \beta_{83} \text{ Openness} + \epsilon$

Table 7: Regression models used in our regression analyses

As stands out in the table above, conscientiousness and attractiveness are both included in most of the regression models we use. We consider conscientiousness to be a counterpart of attractiveness, since the current literature (*infra*) puts this trait, amongst all the other personality traits, forward as the soundest predictor of productivity as well as of the chances of getting hired. By including them both, we are able to measure their relative relevance and check whether the relative weight of attractiveness tops that of conscientiousness, or, if it's the other way around.

A third element worth mentioning is that due to the fact that we only use four pictures, we cannot include attractiveness and all personality traits in the same regression model. This makes that we are limited to, alongside attractiveness, include only two personality traits in order to prevent multicollinearity. This is due to the fact that, as we use only four pictures and thereby all characteristics do only vary over four values. The value of a fourth variable can then be written as a linear combination of the constant, the value of attractiveness and the values of the two included personality traits.

A final element that we mention here is that based on the regression results of the first regression model we use, we cannot deduct whether there is a significant difference between picture 1, picture 2 en picture 3. In order to solve this issue, we carry out extra F-tests.

4.2.3. Basic regressions

We start our regression analyses with two regressions analyses on the full data set, this means that in the following all our observations are encompassed. The first regression analysis we focus upon, uses the sensu stricto definition of positive callback, whereas the second regression analysis we discuss follows the sensu lato definition of positive callback. While reviewing the results of the latter, we also compare our findings of the regression on both definitions.

4.2.3.1. Regression analysis: callback on all observations sensu stricto

When we look at the first column of table 8, we see that picture 4, which counts as our reference picture, has a chance on positive callback sensu stricto of 5.3 percentage points. When picture 1 is added to the resume instead of picture 4, the chance on positive callback sensu strictu increases with 1.5 percentage point. Yet, this effect is not significantly different from zero. When picture 2 would replace picture 4, the odds on getting an invite for a job interview enhances with 4.2 percentage points. This effect is significant on the 5%-significance-level, which implies that by using this picture, the chance to get a positive callback sensu stricto rises from 5.3% to 9.5%. This is an increase with appromixately 80%, which is stunning. This can be explained by the fact that picture 2 has the highest score on conscientiousness. When our reference picture would be replaced by picture 3, no significant change would occur. As our F-test suggests, there's only a significant difference in effect between picture 2 and picture 3.

The second column tells us something about how attractiveness alters the chances on getting invited to a job interview. The mean odds on getting a positive callback sensu stricto, when attractiveness is standardized, is captured by the constant α and amounts to 6.8 percentage points. This constant α is used in all the other regression models as well. The value that comes out of this regression model suggests that when perceived attractiveness is enhanced with a one standard deviation, the chances

on getting a positive callback *sensu stricto* rise by barely 0.2 percentage points, which, furthermore, is not significantly different from zero. The beauty premium when it comes to getting invited for a job interview is not confirmed by these results.

Regression analysis: odds on positive callback *sensu stricto* (all observations)

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Picture 1	0.015 (0.016)							
Picture 2	0.042** (0.021)							
Picture 3	0.004 (0.019)							
<i>Picture 4 (reference)</i>								
Attractiveness (standardized)		0.002 (0.006)		-0.005 (0.006)	-0.007 (0.017)	-0.007 (0.019)	-0.006 (0.008)	-0.007 (0.014)
Conscientiousness (standardized)			0.016** (0.007)	0.018** (0.008)	0.015 (0.030)	0.017* (0.009)	0.017* (0.010)	0.016 (0.014)
Extraversion (standardized)					0.004 (0.036)			
Emotional stability (standardized)						0.002 (0.021)		
Agreeableness (standardized)							0.001 (0.012)	
Openness (standardized)								0.002 (0.020)
Constant alpha	0.053*** (0.014)	0.068*** (0.010)	0.068*** (0.010)	0.068*** (0.010)	0.068*** (0.010)	0.068*** (0.010)	0.068*** (0.010)	0.068*** (0.010)
F-test effect Picture 1 = Picture 2 (p-value)	0.230							
F-test effect Picture 1 = Picture 3 (p-value)	0.565							
F-test effect Picture 2 = Picture 3 (p-value)	0.029							
Observations	1056	1056	1056	1056	1056	1056	1056	1056
<p>The dependent variable in this regression analysis is whether positive callback was received <i>sensu stricto</i>. The values of attractiveness and the Big Five Personality traits are standardized by subtracting their median value from the four used pictures and by dividing this result by the standard deviation of these pictures. The figures in this table display the estimated effect of this variable on the odds of receiving an invitation for a job interview. The standard deviations are in between brackets and were clustered on vacancy-level. *** refers to significant on the 1%-significance-level, ** on the 5%-significance-level and * on the 10%-significance-level.</p>								

Table 8: Regression analysis positive callback *sensu stricto* (all observations)

In the third column, we measure the effect of conscientiousness on the chances of getting positive callback *sensu stricto*. We see that a one standard deviation increase in this personality trait, augments these chances with 1.6 percentage points to 8.4%. This result is significant at the 5%-significance-level and reflects an increase with approximately 24%.

The fourth column takes the effect of perceived attractiveness and conscientiousness on the chance to get a positive callback *sensu stricto* into account at the same time. While perceived attractiveness has, again, no significant effect, a one standard deviation increase in conscientiousness, increases the odds of a positive callback by 1.8 percentage points. This effect is significant at the 5%-significance-level and generates a chance of 8.6%, which reflects an increase of over 26%.

In each of the following columns, one of the other personality traits is added to perceived attractiveness and conscientiousness. As mentioned before, this gravely affects the significance of the effect of especially conscientiousness due to the fact that the traits are closely correlated. This explains why the values that are calibrated for conscientiousness are only significant at the 10%-significance-level in case of adding emotional stability and agreeableness, or not significant at all in case of the other two traits. Yet, the measured value of the effect of conscientiousness remains relatively constant over all our regression models used. None of the other personality traits seem to significantly affect the chances of getting a positive callback *sensu stricto*. The same accounts for perceived attractiveness, which, once again, does not affect hiring decisions.

When we link these findings to the research questions we posed earlier, we do not find any significant evidence of a beauty premium when using the *sensu stricto* definition of positive callback. Our results suggest that during the first stage of the hiring decision, perceived attractiveness does not seem to influence the recruiter at all in deciding which applicant to invite for a job-interview. The same accounts for four of the five personality traits we examined: nor extraversion, nor emotional stability, nor agreeableness, nor openness had a significant effect on positive callback *sensu stricto*. Conscientiousness, however, had both a significant positive and a quite persistent effect on the chances of getting invited to a job interview. While our figures suggest that a one standard deviation increase in conscientiousness, raises chances of getting a positive callback *sensu stricto* with up to 26%, our regression model that made use of the pictures even suggests that the picture that was rated highly for conscientiousness, sees its chances on getting invited for a job interview enhanced up to 80%. Thus, we conclude this regression analysis by stating that our results do not suggest that the effect that perceived attractiveness has on callback *sensu stricto* are larger than the effect of personality traits. While four out of five traits do not seem to have any effect on getting invited for a

job interview, the impact of conscientiousness is significantly positive. Conscientiousness thus has a more substantial effect on positive callback *sensu stricto* than attractiveness.

4.2.3.2. Regression analysis: callback on all observations *sensu lato*

When running an identical regression using a different definition of positive callback, namely *sensu lato*, we obtain the figures depicted in the table below (table 9). What immediately stands out is that our constant α both in the first regression model as in the other models is substantially bigger than in our previous regression analysis. This makes perfect sense, since positive callback was redefined from *sensu stricto* to *sensu lato* which implies a widening.

A first element worth mentioning is the fact that picture 2, has an effect of 5.6 percentage points at the 10%-significance-level. This means that the chance of receiving a positive callback *sensu lato* increases from 14,8 percentage points that corresponds with the reference picture to 20.4 percentage points. This represents an increase with nearly 38%. The F-tests, however, do not reflect any significant difference between the three used pictures.

Also, as opposed to the figures that pop out of our first regression analysis, all the values of attractiveness are positive. Nonetheless, in none of our regression models, the zero-hypothesis can be dismissed. This means that even when it comes to callback *sensu lato*, perceived attractiveness does not seem to have a significant effect.

The final element we want to discuss are the values that are calibrated for conscientiousness. By using our third regression model, the effect of this trait on the chances of receiving a positive callback *sensu lato* is measured. This appears to have a significant effect at the 10%-significance-level of 2.0 percentage points per standard deviation. This implies that the odds of receiving any kind of positive reaction after an application rise from 18.2 percentage points to 20.2 percentage points. An increase of 11%. Similar values for conscientiousness are found when the regression models that included other variables were found, yet, in these cases the zero hypothesis could not be dismissed. We once more refer to the fact that this is probably to blame to the high correlation between the personality traits.

Linking back to our research questions, we find that perceived attractiveness does not have any significant effect on the positive callback *sensu lato*. This also accounts for extraversion, emotional stability, agreeableness and openness. The only trait that has a significant and positive effect on the chances of getting a positive response to an application is conscientiousness, which increased these chances by 11%. While this personality trait does have an effect, it is rather small and it is not significant in those regression models that use more than one variable. We can clearly state that

even when focusing on positive callback *sensu lato*, perceived attractiveness does not have a larger effect than personality traits. However, our figures make it hard to state that conscientiousness has a substantially larger impact on getting a positive callback *sensu lato* than perceived attractiveness does, though a more outspoken effect as such is alluded upon in our figures.

Regression analysis: odds on positive callback *sensu lato* (all observations)

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Picture 1	0.042 (0.028)							
Picture 2	0.056* (0.030)							
Picture 3	0.038 (0.029)							
<i>Picture 4 (reference)</i>								
Attractiveness (standardized)		0.014 (0.010)		0.008 (0.010)	0.013 (0.025)	0.014 (0.023)	0.010 (0.014)	0.012 (0.021)
Conscientiousness (standardized)			0.020* (0.010)	0.017 (0.011)	0.026 (0.041)	0.018 (0.012)	0.018 (0.014)	0.020 (0.019)
Extraversion (standardized)					-0.013 (0.053)			
Emotional stability (standardized)						-0.007 (0.031)		
Agreeableness (standardized)							-0.004 (0.017)	
Openness (standardized)								-0.007 (0.030)
Constant alpha	0.148*** (0.022)	0.182*** (0.015)	0.182*** (0.015)	0.182*** (0.015)	0.182*** (0.015)	0.182*** (0.015)	0.182*** (0.015)	0.182*** (0.015)
F-test effect Picture 1 = Picture 2 (p-value)	0.625							
F-test effect Picture 1 = Picture 3 (p-value)	0.902							
F-test effect Picture 2 = Picture 3 (p-value)	0.506							
Observations	1056	1056	1056	1056	1056	1056	1056	1056
<p>The dependent variable in this regression analysis is whether positive callback was received <i>sensu lato</i>. The values of attractiveness and the Big Five Personality traits are standardized by subtracting their median value from the four used pictures and by dividing this result by the standard deviation of these pictures. The figures in this table display the estimated effect of this variable on the odds of receiving an invitation for a job interview or another positive response. The standard deviations are in between brackets and were clustered on vacancy-level. *** refers to significant on the 1%-significance-level, ** on the 5%-significance-level and * on the 10%-significance-level.</p>								

Table 9: Regression analysis positive callback *sensu lato* (all observations)

4.2.4. Middle-skilled versus High-skilled applicants

After running our basic regressions, we now focus upon whether the schooling level of our applicants has an effect on the measured callback. We first discuss the regressions we ran, respectively callback *sensu stricto* and *sensu lato*, using the middle-skilled observations in our data set. Following, we do the same for the high-skilled observations in our data set. We conclude this section by comparing these results. An important element worth mentioning is that by narrowing our scope, our data set becomes smaller which in turn affects the significance of the values found. We stress that one should be careful when interpreting our results.

4.2.4.1. Middle-skilled: callback *sensu stricto* and *sensu lato*

As tables 11 & 12 below show, only picture 2 has a significant positive effect on the chance of receiving a positive callback for the middle-skilled applications. In case of positive callback *sensu stricto*, the use of picture 2 instead of our reference picture would enhance this chance with 5.3 percentage points at the 5%-significance-level (table 9). This implies that the chance of getting invited for a job interview rises from 4.5 percentage points to 9.8 percentage points, which is an increase of nearly 118%. When we look at callback *sensu lato*, the effect of using picture 2 is even bigger, namely an increase of 10.6 percentage points at the 1%-significance-level (table 10). This implies that the chances on getting a positive callback *sensu lato* increase from 7.6 percentage points to 18.2 percentage points, or an increase with 139%. In both regressions, the F-tests report a significant difference between picture 2 and picture 3. Only in case of callback *sensu lato*, the F-test suggests significant difference between picture 1 and picture 2 as well.

When we look at the other regression models we use, we find no clear evidence that perceived attractiveness affects the callback of our middle-skilled applicants, not when we look at the values that pop up in our regressions that uses the *sensu stricto* definition of callback nor in the ones that focus upon callback *sensu lato*.

We do find an effect of conscientiousness on the chance of getting a positive callback for the middle-skilled profiles. When we consider the third column, a one standard deviation increase in conscientiousness, leads to an increase in chances of 2.1 percentage points when we consider callback *sensu stricto* and an increase of 3.8 when it comes to callback *sensu lato*. Both are significant, respectively at the 5%-significance-level and the 1%-significance level. This implies that the chances rise from 5.7 percentage points to 7.8 percentage points in the case of callback *sensu stricto* and a rise from 11.7 percentage points to 15.5 percentage points, or respectively an increase in the chance of getting a positive callback of respectively 37% and 32%. While the absolute numbers are somewhat different, the relative size of the effect of conscientiousness on both callback *sensu*

stricto and sensu lato is similar. This effect proves to be significant in nearly each regression model that was used, even when other personality traits were included. This implies that the effect of conscientiousness on the chances of getting a positive callback for our middle-skilled applicants is substantial and persistent. The other personality traits that we consider do not have a significant effect on the chances of the middle-skilled on getting a positive callback, irrespective of the definition we apply.

Regression analysis: odds on positive callback sensu stricto (middle-skilled observations)

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Picture 1	0.008 (0.020)							
Picture 2	0.053** (0.026)							
Picture 3	-0.015 (0.045)							
<i>Picture 4 (reference)</i>								
Attractiveness (standardized)		-0.005 (0.007)		-0.015 (0.009)	-0.023 (0.021)	-0.024 (0.024)	-0.018 (0.011)	-0.021 (0.017)
Conscientiousness (standardized)			0.021** (0.009)	0.027* (0.010)	0.014 (0.037)	0.025** (0.012)	0.024* (0.013)	0.022 (0.018)
Extraversion (standardized)					0.017 (0.045)			
Emotional stability (standardized)						0.011 (0.026)		
Agreeableness (standardized)							0.006 (0.014)	
Openness (standardized)								0.010 (0.025)
Constant alpha	0.045*** (0.018)	0.057*** (0.013)	0.057*** (0.013)	0.057*** (0.013)	0.057*** (0.013)	0.057*** (0.013)	0.057*** (0.013)	0.057*** (0.013)
F-test effect Picture 1 = Picture 2 (p-value)	0.121							
F-test effect Picture 1 = Picture 3 (p-value)	0.356							
F-test effect Picture 2 = Picture 3 (p-value)	0.005							
Observations	528	528	528	528	528	528	528	528

The dependent variable in this regression analysis is whether positive callback was received sensu stricto. The values of attractiveness and the Big Five Personality traits are standardized by subtracting their median value from the four used pictures and by dividing this result by the standard deviation of these pictures. The figures in this table display the estimated effect of this variable on the odds of receiving an invitation for a job interview. The standard deviations are in between brackets and were clustered on vacancy-level. *** refers to significant on the 1%-significance-level, ** on the 5%-significance-level and * on the 10%-significance-level.

Table 10: Regression-analysis sub-set middle-skilled - callback sensu stricto

Regression analysis: odds on positive callback sensu lato (middle-skilled observations)

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Picture 1	0.038 (0.029)							
Picture 2	0.106*** (0.037)							
Picture 3	0.023 (0.033)							
<i>Picture 4 (reference)</i>								
Attractiveness (standardized)		0.006 (0.010)		-0.010 (0.010)	-0.004 (0.030)	-0.003 (0.036)	-0.008 (0.015)	-0.005 (0.026)
Conscientiousness (standardized)			0.038*** (0.013)	0.042*** (0.014)	0.051 (0.053)	0.043*** (0.015)	0.044** (0.017)	0.045* (0.025)
Extraversion (standardized)					-0.013 (0.066)			
Emotional stability (standardized)						-0.007 (0.039)		
Agreeableness (standardized)							-0.004 (0.021)	
Openness (standardized)								-0.007 (0.037)
Constant alpha	0.076*** (0.023)	0.117*** (0.019)	0.117*** (0.019)	0.117*** (0.019)	0.117*** (0.019)	0.117*** (0.019)	0.117*** (0.019)	0.117*** (0.019)
F-test effect Picture 1 = Picture 2 (p-value)	0.066							
F-test effect Picture 1 = Picture 3 (p-value)	0.686							
F-test effect Picture 2 = Picture 3 (p-value)	0.008							
Observations	528	528	528	528	528	528	528	528
<p>The dependent variable in this regression analysis is whether positive callback was received sensu lato. The values of attractiveness and the Big Five Personality traits are standardized by subtracting their median value from the four used pictures and by dividing this result by the standard deviation of these pictures. The figures in this table display the estimated effect of this variable on the odds of receiving an invitation for a job interview or another positive response. The standard deviations are in between brackets and were clustered on vacancy-level. *** refers to significant on the 1%-significance-level, ** on the 5%-significance-level and * on the 10%-significance-level.</p>								

Table 11: Regression-analysis sub-set middle-skilled - callback sensu lato

Just like in our basic regressions, we see that the constant α 's are substantially bigger when we look at the callback sensu lato, namely 7.6% and 11.7% versus respectively 4.5% and 5.7% when considering callback sensu stricto. The reason for this has already been explained above.

When we link back to the research questions, we conclude that in our sub-set that included only the middle-skilled applications, no evidence for a beauty premium is found. Perceived attractiveness does not affect the chances on receiving a positive callback, both defined as sensu stricto and sensu lato. This is also the case for four of the big five personality traits. Conscientiousness, however, does have a persistent significantly positive and also substantial effect on these chances. Our figures suggest that the use of the picture that scored high on this trait, raises the chances by 118% when

callback is defined *sensu stricto* and by 139% when it is defined as *sensu lato*. Our other regression models suggest a raise by approximately 35%. We conclude that in our middle-skilled sub-set, the personality trait conscientiousness clearly has a more outspoken and larger effect on hiring decisions.

4.2.4.2. High-skilled: callback *sensu stricto* and *sensu lato*

When we look at the results that came out of the regressions we ran with a data set that is limited to the applications of high-skilled profiles, what stands out both when considering callback *sensu stricto* and *sensu lato*, is that, except for the constant α , none of the values are significant (table 12 and table 13). While both an analysis of callback *sensu stricto* and *sensu lato* suggest a small, yet positive effect of perceived attractiveness on the chance of getting a positive reaction, the zero-hypothesis cannot be dismissed in any of our regression models. The same accounts for the effect of conscientiousness on the callback *sensu stricto* of our high-skilled applicants. There seems to be a small positive effect of approximately 1 percentage point, yet again, the zero-hypothesis cannot be dismissed. The effect of conscientiousness in the callback *sensu lato* does not suggest to any persistent nor significant effect. The same accounts for the other personality traits. This suggests that both perceived attractiveness and personality traits do not affect the chances of the high-skilled applicants of receiving a positive reaction to their application.

Linking back to our research questions, we do not find any significant effect of one of the variables we consider. This means that perceived attractiveness does not affect the high-skilled applicants' chances of a positive callback, both defined as *sensu stricto* as *sensu lato*, nor does the personality traits seem to affect these chances. We cannot distinguish which of both has the biggest impact, since our figures suggest that none of them have any.

Regression analysis: odds on positive callback sensu stricto (high-skilled observations)

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Picture 1	0.023 (0.025)							
Picture 2	0.030 (0.033)							
Picture 3	0.023 (0.030)							
<i>Picture 4 (reference)</i>								
Attractiveness (standardized)		0.008 (0.009)		0.005 (0.009)	0.009 (0.026)	0.010 (0.030)	0.007 (0.013)	0.008 (0.022)
Conscientiousness (standardized)			0.010 (0.011)	0.008 (0.011)	0.016 (0.046)	0.009 (0.014)	0.010 (0.016)	0.011 (0.022)
Extraversion (standardized)					-0.009 (0.056)			
Emotional stability (standardized)						-0.006 (0.033)		
Agreeableness (standardized)							-0.003 (0.018)	
Openness (standardized)								-0.006 (0.032)
Constant alpha	0.061*** (0.021)	0.080*** (0.015)	0.080*** (0.015)	0.080*** (0.015)	0.080*** (0.015)	0.080*** (0.015)	0.080*** (0.015)	0.080*** (0.015)
F-test effect Picture 1 = Picture 2 (p-value)	0.820							
F-test effect Picture 1 = Picture 3 (p-value)	1.000							
F-test effect Picture 2 = Picture 3 (p-value)	0.758							
Observations	528	528	528	528	528	528	528	528
<p>The dependent variable in this regression analysis is whether positive callback was received sensu stricto. The values of attractiveness and the Big Five Personality traits are standardized by subtracting their median value from the four used pictures and by dividing this result by the standard deviation of these pictures. The figures in this table display the estimated effect of this variable on the odds of receiving an invitation for a job interview. The standard deviations are in between brackets and were clustered on vacancy-level. *** refers to significant on the 1%-significance-level, ** on the 5%-significance-level and * on the 10%-significance-level.</p>								

Table 12: Regression-analysis sub-set high-skilled - callback sensu stricto

Regression analysis: odds on positive callback sensu lato (high-skilled observations)

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Picture 1	0.045 (0.046)							
Picture 2	0.007 (0.047)							
Picture 3	0.053 (0.046)							
<i>Picture 4 (reference)</i>								
Attractiveness (standardized)		0.021 (0.016)		0.025 (0.018)	0.030 (0.040)	0.031 (0.046)	0.027 (0.022)	0.029 (0.033)
Conscientiousness (standardized)			0.001 (0.016)	-0.009 (0.017)	0.000 (0.064)	-0.008 (0.019)	-0.007 (0.021)	-0.005 (0.030)
Extraversion (standardized)					-0.013 (0.083)			
Emotional stability (standardized)						-0.008 (0.049)		
Agreeableness (standardized)							-0.004 (0.027)	
Openness (standardized)								-0.007 (0.047)
Constant alpha	0.220*** (0.036)	0.246*** (0.024)	0.246*** (0.024)	0.246*** (0.024)	0.246*** (0.024)	0.246*** (0.024)	0.246*** (0.024)	0.246*** (0.024)
F-test effect Picture 1 = Picture 2 (p-value)	0.441							
F-test effect Picture 1 = Picture 3 (p-value)	0.877							
F-test effect Picture 2 = Picture 3 (p-value)	0.327							
Observations	528	528	528	528	528	528	528	528
<p>The dependent variable in this regression analysis is whether positive callback was received sensu lato. The values of attractiveness and the Big Five Personality traits are standardized by subtracting their median value from the four used pictures and by dividing this result by the standard deviation of these pictures. The figures in this table display the estimated effect of this variable on the odds of receiving an invitation for a job interview or another positive response. The standard deviations are in between brackets and were clustered on vacancy-level. *** refers to significant on the 1%-significance-level, ** on the 5%-significance-level and * on the 10%-significance-level.</p>								

Table 13: Regression-analysis sub-set high-skilled - callback sensu lato

4.2.4.3. Middle-skilled versus high-skilled

Our results suggest that middle-skilled profiles, see their chances on getting a positive callback significantly enhanced if they are considered as being more conscientious. This is depicted by the positive effect that picture 2 has on the odds of getting both a callback sensu stricto as a callback sensu lato and by the persistent positive effect that conscientiousness has on receiving a positive reaction. This is not the case when we look at the regression results of our high-skilled observations.

Both middle-skilled and high-skilled observations do not suggest any significant effect of perceived attractiveness on the chances of getting a positive callback. Though the high-skilled regressions do suggest a small but non-significant positive effect of attractiveness on both callback *sensu stricto* as *sensu lato*. The other personality traits do not affect the positive callback chances of the middle-skilled, nor of the high-skilled.

A final element that catches our attention while comparing our results, is the fact that constant α 's are substantially bigger in our high-skilled observations than those that appear in our middle-skilled observations. While this is an interesting finding, it exceeds the scope of this thesis.

4.2.5. Male versus female recruiters

In the following, we split up our data set in three groups. The first sub-set contains the vacancies in which the recruiters are males, a second sub-set contains the vacancies with female recruiters and a final sub-set contains those vacancies where the gender of the recruiter was unclear or was not mentioned. The latter sub-set is obviously not used. We first discuss the results that came out of our regressions on the male sub-set, both *sensu stricto* as *sensu lato*, followed by an equivalent discussion of the female sub-set. We will finish by briefly comparing both. Again, we must stress that due to the small size of our data set, interpretation should be done carefully.

4.2.5.1. Male recruiters: callback *sensu stricto* and *sensu lato*

When we look at the results that come out of the regression on the male sub-set using the definition of callback *sensu stricto* (table 14), we do not find a significant effect of changing the pictures attached to the resumes. Nonetheless, the F-test suggests that there exists a significant difference between the use of picture 2 and picture 3. In this regression, a small but significant effect of conscientiousness on chances of getting invited to a job interview is found. For instance as is depicted by the third column, a one standard deviation increase in conscientiousness leads to an increase in odds by 1.7 percentage points, which means that chances of getting invited rise from 4.9 percentage points to 6.6 percentage points. This is an increase by 35%. None of these effects are found in our regression of the male sub-set that used the *sensu lato* definition of positive callback (table 15). In both cases, no significant effect of attractiveness is found nor does any other personality trait affect the chances of getting a positive reaction.

When we link back to our research questions, we do not find any indication that male recruiters would be affected by the applicant's perceived attractiveness, nor by personality traits as extraversion, emotional stability, agreeableness or openness. Some evidence for a small effect of conscientiousness on chances of getting a positive callback *sensu stricto* was found. We think that

male recruiters are more affected by personality traits than by perceived attractiveness; yet, this idea must be treated with caution.

Regression analysis: odds on positive callback sensu stricto (male recruiters)

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Picture 1	0.014 (0.023)							
Picture 2	0.042 (0.021)							
Picture 3	-0.018 (0.025)							
<i>Picture 4 (reference)</i>								
Attractiveness (standardized)		-0.002 (0.008)		-0.012 (0.010)	-0.027 (0.023)	-0.030 (0.027)	-0.018 (0.012)	-0.025 (0.019)
Conscientiousness (standardized)			0.017* (0.050)	0.022* (0.012)	-0.004 (0.042)	0.019 (0.014)	0.017 (0.015)	0.012 (0.020)
Extraversion (standardized)					0.036 (0.050)			
Emotional stability (standardized)						0.022 (0.030)		
Agreeableness (standardized)							0.012 (0.016)	
Openness (standardized)								0.020 (0.029)
Constant alpha	0.040*** (0.020)	0.049*** (0.014)	0.049*** (0.014)	0.049*** (0.014)	0.049*** (0.014)	0.049*** (0.014)	0.049*** (0.014)	0.049*** (0.014)
F-test effect Picture 1 = Picture 2 (p-value)	0.426							
F-test effect Picture 1 = Picture 3 (p-value)	0.265							
F-test effect Picture 2 = Picture 3 (p-value)	0.046**							
Observations	368	368	368	368	368	368	368	368
<p>The dependent variable in this regression analysis is whether positive callback was received sensu stricto. The values of attractiveness and the Big Five Personality traits are standardized by subtracting their median value from the four used pictures and by dividing this result by the standard deviation of these pictures. The figures in this table display the estimated effect of this variable on the odds of receiving an invitation for a job interview. The standard deviations are in between brackets and were clustered on vacancy-level. *** refers to significant on the 1%-significance-level, ** on the 5%-significance-level and * on the 10%-significance-level.</p>								

Table 14: Regression-analysis sub-set male recruiters - callback sensu stricto

Regression analysis: odds on positive callback sensu lato (male recruiters)

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Picture 1	0.022 (0.044)							
Picture 2	-0.008 (0.048)							
Picture 3	0.017 (0.048)							
<i>Picture 4 (reference)</i>								
Attractiveness (standardized)		0.009 (0.016)		0.013 (0.017)	0.006 (0.042)	0.006 (0.049)	0.010 (0.023)	0.008 (0.036)
Conscientiousness (standardized)			-0.003 (0.016)	-0.008 (0.018)	-0.018 (0.067)	-0.009 (0.020)	-0.010 (0.022)	-0.012 (0.031)
Extraversion (standardized)					0.013 (0.087)			
Emotional stability (standardized)						0.002 (0.021)		
Agreeableness (standardized)							0.004 (0.028)	
Openness (standardized)								0.007 (0.049)
Constant alpha	0.150*** (0.036)	0.158*** (0.025)	0.158*** (0.025)	0.158*** (0.025)	0.158*** (0.025)	0.158*** (0.025)	0.158*** (0.025)	0.158*** (0.025)
F-test effect Picture 1 = Picture 2 (p-value)	0.531							
F-test effect Picture 1 = Picture 3 (p-value)	0.915							
F-test effect Picture 2 = Picture 3 (p-value)	0.582							
Observations	368	368	368	368	368	368	368	368
<p>The dependent variable in this regression analysis is whether positive callback was received sensu lato. The values of attractiveness and the Big Five Personality traits are standardized by subtracting their median value from the four used pictures and by dividing this result by the standard deviation of these pictures. The figures in this table display the estimated effect of this variable on the odds of receiving an invitation for a job interview or another positive response. The standard deviations are in between brackets and were clustered on vacancy-level. *** refers to significant on the 1%-significance-level, ** on the 5%-significance-level and * on the 10%-significance-level.</p>								

Table 15: Regression-analysis sub-set male recruiters - callback sensu lato

4.2.5.2. Female recruiters: callback sensu stricto and sensu lato

When we consider the results that come out of the regression we ran on the female subset using the sensu stricto definition of callback, none of the variables considered seem to have a significant effect on the chances of getting an invitation for a job interview, nor do the values of the pictures suggest a plausible effect (table 16). We do think that due to the size of the sample, we might overlook a positive effect of conscientiousness. The results suggest a small effect of approximately 1,5 percentage point, yet this lacks to be significant.

Regression analysis: odds on positive callback sensu stricto (female recruiters)

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Picture 1	0.018 (0.025)							
Picture 2	0.039 (0.032)							
Picture 3	0.016 (0.028)							
<i>Picture 4 (reference)</i>								
Attractiveness (standardized)		0.005 (0.009)		0.000 (0.009)	0.003 (0.025)	0.004 (0.029)	0.001 (0.013)	0.003 (0.021)
Conscientiousness (standardized)			0.014 (0.010)	0.014 (0.011)	0.020 (0.045)	0.015 (0.013)	0.015 (0.015)	0.016 (0.021)
Extraversion (standardized)					-0.009 (0.054)			
Emotional stability (standardized)						-0.005 (0.032)		
Agreeableness (standardized)							-0.018 (0.018)	
Openness (standardized)								-0.005 (0.031)
Constant alpha	0.069*** (0.021)	0.088*** (0.015)	0.088*** (0.015)	0.088*** (0.015)	0.088*** (0.015)	0.088*** (0.015)	0.088*** (0.015)	0.088*** (0.015)
F-test effect Picture 1 = Picture 2 (p-value)	0.517							
F-test effect Picture 1 = Picture 3 (p-value)	0.923							
F-test effect Picture 2 = Picture 3 (p-value)	0.324							
Observations	602	602	602	602	602	602	602	602
<p>The dependent variable in this regression analysis is whether positive callback was received sensu stricto. The values of attractiveness and the Big Five Personality traits are standardized by subtracting their median value from the four used pictures and by dividing this result by the standard deviation of these pictures. The figures in this table display the estimated effect of this variable on the odds of receiving an invitation for a job interview. The standard deviations are in between brackets and were clustered on vacancy-level. *** refers to significant on the 1%-significance-level, ** on the 5%-significance-level and * on the 10%-significance-level.</p>								

Table 16: Regression-analysis sub-set female recruiters - callback sensu stricto

Regression analysis: odds on positive callback sensu lato (female recruiters)

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Picture 1	0.057 (0.040)							
Picture 2	0.102** (0.042)							
Picture 3	0.056 (0.039)							
<i>Picture 4 (reference)</i>								
Attractiveness (standardized)		0.018 (0.014)		0.006 (0.015)	0.020 (0.034)	0.023 (0.040)	-0.011 (0.018)	0.018 (0.029)
Conscientiousness (standardized)			0.034** (0.015)	0.033** (0.016)	0.058 (0.057)	0.036** (0.017)	0.037** (0.019)	0.042 (0.026)
Extraversion (standardized)					-0.034 (0.074)			
Emotional stability (standardized)						-0.020 (0.044)		
Agreeableness (standardized)							-0.011 (0.024)	
Openness (standardized)								-0.019 (0.042)
Constant alpha	0.153*** (0.030)	0.207*** (0.021)	0.207*** (0.021)	0.207*** (0.021)	0.207*** (0.021)	0.207*** (0.021)	0.207*** (0.021)	0.207*** (0.021)
F-test effect Picture 1 = Picture 2 (p-value)	0.290							
F-test effect Picture 1 = Picture 3 (p-value)	0.994							
F-test effect Picture 2 = Picture 3 (p-value)	0.249							
Observations	602	602	602	602	602	602	602	602
<p>The dependent variable in this regression analysis is whether positive callback was received sensu lato. The values of attractiveness and the Big Five Personality traits are standardized by subtracting their median value from the four used pictures and by dividing this result by the standard deviation of these pictures. The figures in this table display the estimated effect of this variable on the odds of receiving an invitation for a job interview or another positive response. The standard deviations are in between brackets and were clustered on vacancy-level. *** refers to significant on the 1%-significance-level, ** on the 5%-significance-level and * on the 10%-significance-level.</p>								

Table 17: Regression-analysis sub-set female recruiters - callback sensu lato

Considering callback sensu lato on the female subset, we find a significant effect of using picture 2 instead of the reference picture (table 17). This effect is valued at 10.2 percentage points at the 5%-significance-level. This increases the chances of receiving a positive callback sensu lato from 15.3 percentage points to 25.5 percentage point, or an increase by nearly 67%. The F-tests however do not suggest any difference between the pictures used. Also a persistent and significant effect of conscientiousness is found over the most regression lato models we use to study callback sensu lato in the female sub-set. Our results suggest that one standard deviation increase in conscientiousness leads to an increase in chances on a positive callback of approximately 3.4 percentage points. This is

significant at the 5%-significance-level and raises the odds from 20.7 percentage points to 24.1 percentage points, which is an increase by 16%.

No significant effect of attractiveness nor of one of the other personality traits is found, both when we consider callback *sensu stricto* and *sensu lato*.

Linking back to our research questions, our results suggest that female recruiters are not influenced by the perceived attractiveness of the applicants nor by extraversion, emotional stability, agreeableness or openness. There is an indication that conscientiousness does affect the chances on receiving a positive callback, yet only when this is defined *sensu lato*. In this case an increase with 67% is put forward. Our results suggest that the effect of one personality trait, namely conscientiousness, is bigger than the effect of attractiveness. Yet, again, this should be interpreted with caution.

4.2.5.3. Male versus female recruiters

What immediately stands out is that both genders reward conscientiousness, though not in the same way. While this trait has a significant and positive effect on positive callback *sensu stricto* of men, the positive effect that is found in the female sub-set is not significant. When we consider the role of conscientiousness in callback *sensu lato*, we see a substantial difference between the male and the female recruiters. This trait only seems to have a significant and positive effect on the female recruiters, while it does not seem to affect male recruiters at all.

A second element that is worth mentioning is that neither men's nor women's responses are significantly affected by perceived attractiveness of the applicant. Also, regardless the gender of the recruiter, the other personality traits do not seem to interfere with the chances of getting a positive callback.

A final element that catches our attention is that in general the female recruiters tend to be more eager to give a positive callback to the male applicants than their male counterparts. This is shown by the substantial differences in the constant alpha's in both sub-sets.

4.3. DISCUSSION

After assessing our data and the results, we now discuss these in the light of the research questions. Since our empirical research is limited to the vacancies posted on the jobsite VDAB, we want to stress that all of the following only applies to the Flemish labor market and the occupational categories that are included in our research. Also it is important to point out that due to the characteristics of a correspondence test, we can only discuss how perceived attractiveness and personality traits affects

the first stage of the hiring process. This implies that we cannot make any statements about discrimination based on these two criteria in later stages of the hiring process, let alone discrimination during one's career. Also, the standard errors are manifestly bigger from the fifth regression model onwards. This is due to the earlier mentioned high correlation between the different personality traits. This especially affects the figures of conscientiousness so that its effect is no longer statistically significant. A final element to stress is that all of our findings only apply to male applicants. We first discuss how perceived attractiveness affected the chances of getting a positive reaction to a job application, whether this is affected by the schooling level and whether this depended on the gender of the recruiter. We then analogously discuss the effect of personality traits. While we consider all of the Big Five personality traits, we mainly focus on the effect of conscientiousness. This is legitimated by the existing literature which clearly states that this personality trait has the biggest impact on labor market outcomes and by our own results that only generate significant values for this specific personality trait. By the end of this section, a sound answer to all our research questions will be formulated.

Looking at the estimated values of the independent effect of perceived attractiveness in the regressions, it is safe to say that the results are to a large extent surprising. While we expected to find a significant positive effect of attractiveness, the so called beauty premium, our data does not confirm what is suggested in the existing literature. This implies that in the Flemish labor market, perceived attractiveness does not seem to affect the recruiters' decision in the first stage of the hiring process. A man that is considered as more attractive than average will not have a significant advantage over his less attractive counterpart.

When we take a closer look at our results, we find no significant effect of perceived attractiveness when considering only middle-skilled respectively high-skilled vacancies and male respectively female recruiters. Regardless of the gender of the recruiter and the schooling level of the applicant, no proof of discrimination in the Flemish labor market based on perceived attractiveness in the first stage of the hiring process is found. We do want to add that our sample might be too small to detect a beauty premium, especially when considering our analyses that look at positive callback *sensu lato*: we find a very small persistent, yet insignificant, effect of attractiveness on the whole sample and an even more pronounced small persistent but insignificant effect on the sub-set of the high-skilled. This, however, might be coincidental, nonetheless further research is recommended.

The effect of the Big Five personality traits of the first stage of the hiring process are more in line with our hypothesis. Only one of the five traits appears to play an important, persistent and foremost highly significant role in the Flemish labor market, this is, just like the literature predicts,

conscientiousness. Our sample suggests that a one standard deviation increase in conscientiousness increases the chances of getting a positive reaction *sensu stricto* by approximately 1.6 percentage point and *sensu lato* by nearly 4.0%. These represent an increase of 80% respectively 11%. This is endorsed by the fact that picture 2 that scores high on this personality trait, got a significant bigger chance on getting a positive callback than the other ones. How conscientious a job applicant appears clearly seems to affect his chances of getting hired. The other personality traits, however, do not lead to any significant conclusions. They do not appear to play any role in the Flemish labor market. This limited variation over the different personality traits, however, might be a consequence of the limited set of four pictures we use for our data-collection. Thus, further research on that matter is necessary.

When we zoom in on the relevance of the Big Five using the sub-sets of the middle and the high-skilled applicants, some peculiar elements comes to hand. While conscientiousness has a significant effect on the first stage of the hiring process of the middle-skilled, this trait does not seem to have any significant effect on the high-skilled applicants. Also the estimated values that are obtained in the sub-sets of the male and female recruiters are stunning. While conscientiousness only has a significant effect on the callback *sensu stricto* of the male recruiters, it only had a significant effect on the callback *sensu lato* of the female recruiters. Since this is probably due to the small sample we used, we think that the hiring decisions of both male and female recruiters in the Flemish labor market are influenced by how conscientious the applicant appears to be. The other personality traits do not have any significant effects on either of the sub-sets we considered. We conclude by stating that of all the Big Five personality traits, only conscientiousness plays a role in the Flemish labor market. As our figures have shown, differential treatment in the first stage of the hiring process based upon this personality trait is highly likely, except for the high-skilled. This is in line with what we learned from the existing literature. The other personality traits do not seem to have any effect, which might surprise to some extent since other authors do find effect in other countries or using different methodologies.

Finally, when we compare both the independent effect of attractiveness and personality traits and compare them, we find that conscientiousness has clearly a more outspoken effect on an applicant's chances on being hired than attractiveness, which is in line with our hypothesis.

5. CONCLUSION

In this masters' thesis, we address the issue of discrimination in the labor market based on perceived attractiveness and personality traits. As the existing body of literature suggests, this is a highly relevant issue since both perceived attractiveness and personality traits are grounds for discriminatory practices in the labor market. We chose to address perceived attractiveness and personality traits jointly, which, since they are highly correlated but up till now hardly any study has considered them at the same time, is the main merit of this thesis.

The methodology we use in this masters' thesis is a field experiment, more specifically a correspondence test. This allows us to formulate sound answers to our research questions. This, however, implies that we were only able to search discrimination based on perceived attractiveness and personality traits in the first stage of the hiring process. Furthermore, the scope of our research is limited to male job applicants in the Flemish labor market.

Our first finding is that, nonetheless the existing literature states that beauty premia and penalties for the less attractive ones affect labor market outcomes, in the Flemish labor market perceived attractiveness of the male applicants does not have any significant effect on the chances on getting a positive callback. This is found regardless of the skill-level of the job applicant and the gender of the recruiter.

Our second finding addresses the effect of personality traits on the chances of male applicants in the Flemish labor market to receive a positive callback. Extraversion, emotional stability, agreeableness and openness do not seem to have any significant impact on the recruiters' decision. Conscientiousness, however, has both a highly significantly positive as rather persistent effect on the chances of getting a positive callback. The effect of conscientiousness on the chances of getting a positive callback in the Flemish labor market for the male applicants is limited to the middle-skilled. This implies that it does not seem to have any impact on recruiters when they are evaluating the high-skilled applicants. Both male recruiters and female recruiters are influenced to a similar extent by the perceived conscientiousness of a male job applicant.

While we cannot state that the effect of personality traits on discrimination in the labor market is bigger than the effect of perceived attractiveness, we do find that conscientiousness has a far more outspoken effect on the chances of getting a positive callback in the Flemish labor market for the male applicants than their perceived attractiveness has.

Since our data set is rather small and only judge discrimination in the first stage of the hiring process can be judged upon, our findings ought to be treated with care. Also, we endorse further research on this matter in order to address the issue of discrimination in the labor market based on perceived attractiveness and personality traits more thoroughly.

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APPENDIX 1.1

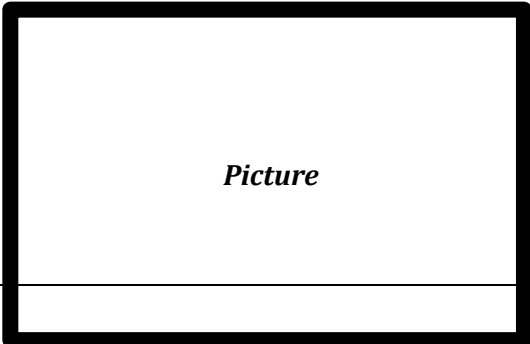
CV A OF THE HIGH-SKILLED APPLICANT

NAME

Boomstraat 21, 2180 Ekeren

TELEPHONE NUMBER

E-MAIL



Algemene informatie

Geslacht: Man
Geboortedatum: 29/08/1991 te Ekeren
Nationaliteit: Belg

Opleiding

2009-2013 Lessius Hogeschool / Thomas More (Antwerpen)
Master in de handelswetenschappen
Afstudeerrichting Accountancy en Fiscaliteit (geslaagd met onderscheiding)

2003-2009 Sint-Annacollege (Antwerpen)
Afstudeerrichting ASO Economie-Wiskunde

Werkervaring

15/03 - 15/03/2012 Stage bij Volvo (Gent)
Zomer 2010 - 2011 Vakantiejob bediende - Stad Antwerpen (Antwerpen)

Talenkennis

Nederlands: moedertaal
Frans: zeer goed
Engels: zeer goed

ICT-kennis

Microsoft Office: goede kennis
Internet en e-mail: goede kennis

Varla

Rijbewijs B (en eigen wagen).
Actief bezig met sport (fitness en voetbal) en bij Chiro Ekeren-Donk.
Zelfstandig en sociaal. Flexibel en gemotiveerd.

APPENDIX 1.2

CV B OF THE HIGH-SKILLED APPLICANT

CURRICULUM VITAE

NAME

Ijsvogelstraat 110,
2170 Merksem
TELEPHONE NUMBER
E-MAIL

Geslacht: man
Geboortedatum: 2 maart 1991 (Antwerpen)
Belgische nationaliteit
In bezit van rijbewijs B

VAKANTIEWERK

Promoteam Kinopolis

augustus 2009 en augustus 2010

STUDIES

Lessius, **Master Handelswetenschappen**
Afstudeerrichting: Accountancy & fiscaliteit
Stage: Daikin, Oostende

2009-2013
Onderscheiding

Groenendaalcollege Merksel, Economie-Wiskunde

2003-2009

NEVENACTIVITEITEN

Lid studentenraad Lessius
Roeien, recreatief

2010-2012
1999-heden

TALENKENNIS

Nederlands
Engels
Frans

moedertaal
vloeiend
vloeiend

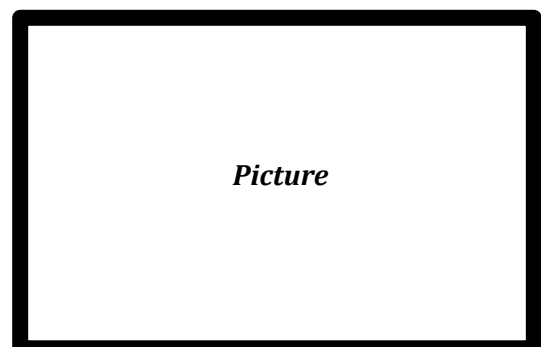
COMPUTERKENNIS

Microsoft Office
Microsoft Windows

zeer goed
zeer goed

VERDERE KENMERKEN

Geen probleem met weekendwerk
Bereid om te verplaatsen
Harde werker
Team player
Leergierig

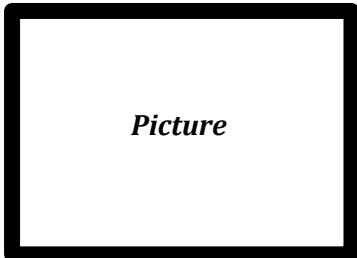


APPENDIX 1.3

CV A OF THE MIDDLE-SKILLED APPLICANT

Curriculum vitae

PERSOONLIJKE INFORMATIE NAME



 Van Havrelei 80, 2100 Deurne

 TELEPHONE NUMBER

 E-MAIL

Geslacht Man | Geboortedatum 10/11/1995 | Nationaliteit Belg

VAKANTIEJOBS

Juli 2012 tot augustus 2012 **Schoonmaak**
Flextra-Interim

Juli 2011 tot augustus 2011 **Administratie en onthaal**
Ibis Budget

ONDERWIJS EN OPLEIDING

2007-2013 **TSO-Handel**
Katholiek Scholencentrum Joma

PERSOONLIJKE VAARDIGHEDEN

Moedertaal Nederlands

Andere talen Frans, Engels

Computervaardigheden

- Goede beheersing MS Office
- Goede beheersing van het internet

Rijbewijs

- B

AANVULLENDE INFORMATIE

Hobby's
Tennis
Basgitaar

APPENDIX 1.4

CV B OF THE MIDDLE-SKILLED APPLICANT

NAME

Thaliastraat 41

2600 Berchem

TELEPHONE NUMBER

E-MAIL

Geboren op 5 maart 1995 te Gent

Burgerlijke staat: ongehuwd

Diploma

2007-2013	Handel (TSO) – Secundaire Handelsschool Sint-Lodewijk (Antwerpen)
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Talen

Nederlands	Moedertaal
Frans	Goede kennis (lezen, spreken, schrijven)
Engels	Heel goede kennis (lezen, spreken, schrijven)

Werkervaring

Juli 2012	Museum Mayer van den Bergh (vakantiejob) taken: administratief werk en onthaal
Augustus 2011	Dockx (vakantiejob) taken: schoonmaak en algemene taken

Vaardigheden

ICT	Microsoft Office – Goede kennis
Rijbewijs	B

Lidmaatschappen

Lid van amateurtoneelvereniging Augustijner Theater
Lid van fitnessclub Basic Fit



Picture

APPENDIX 2.1

COVER LETTER A OF THE HIGH-SKILLED APPLICANT

Geachte meneer /mevrouw,

Ik heb uw vacature gevonden in de vdab-databank. Graag zou ik solliciteren voor de job van [].

Het afgelopen academiejaar werkte ik mijn Master in de handelswetenschappen af. Ik vermoed dat de kennis die ik tijdens deze opleiding opdeed prima aansluiten bij de functiebeschrijving in de vacature. De details staan in mijn cv. Ik hoop me bij u verder te kunnen ontplooien.

Als u nog vragen hebt dan wil ik daar graag op antwoorden in een gesprek.

Hoogachtend,

NAME

APPENDIX 2.2

COVER LETTER B OF THE HIGH-SKILLED APPLICANT

Beste,

Ik heb interesse in de functie als tijdelijke receptionist die verschenen is op de website van jobat. Ik ben afgestudeerd in de richting Handelswetenschappen aan de Lessius Hogeschool. Mijn werkervaring is beperkt tot vakantiewerk maar ik ben wel zeer gemotiveerd. Alle verdere informatie vindt u in mijn Curriculum Vitae.

Ik wacht op nieuws van u en ik hoop dat ik u tijdens een gesprek zal kunnen overtuigen van mijn motivatie.

Met vriendelijke groeten,

NAME

APPENDIX 2.3

COVER LETTER A OF THE MIDDLE-SKILLED APPLICANT

Geachte meneer /mevrouw,

Ik heb uw vacature gevonden in de databank van de “vdab”. Graag zou ik solliciteren voor de job van []. Vorig schooljaar heb ik mijn opleiding Handel afgewerkt. Ook heb ik reeds twee vakantiejobs afgewerkt. In één van beide heb ik reeds wat praktijkervaring in administratief werk opgedaan zodat ik denk dat ik een goede kandidaat ben voor deze job. De details staan in mijn cv.

Als u nog vragen hebt dan wil ik daar graag op antwoorden in een gesprek.

Hoogachtend,

NAME

APPENDIX 2.4

COVER LETTER B OF THE MIDDLE-SKILLED APPLICANT

Beste,

Ik heb interesse in de functie als [] die verschenen is op de VDAB-website.

Ik ben net afgestudeerd in de richting TSO - Handel. In deze richting heb ik veel geleerd dat mij zal helpen om goed werk te leveren in uw bedrijf. Mijn ervaring is beperkt tot vakantiewerk maar ik ben wel zeer gemotiveerd.

Ik wacht op nieuws van u en ik hoop dat u me zal uitnodigen voor een gesprek.

Met vriendelijke groeten,

NAME

APPENDIX 3.1

PICTURE 1



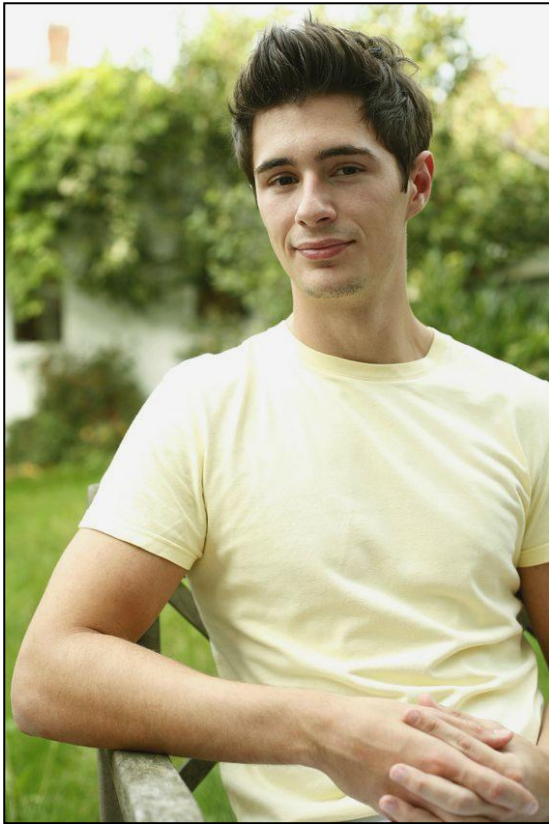
APPENDIX 3.2

PICTURE 2



APPENDIX 3.3

PICTURE 3



APPENDIX 3.4

Picture 4



