The impact of attractiveness in the assessment of employment suitability: A discrete choice experiment

Evi Vanderheyden

Hogeschool-Universiteit Brussel

This study examines the relative importance recruitment and selection professionals place on applicants' facial attractiveness and six other attributes when assessing employment suitability for high and low contact positions. 549 respondents in Flanders evaluated applicant profiles that varied on these dimensions. Analyses show that respondents place more importance on conscientiousness and GMA and less weight on extraversion and graphology. A discrete choice experiment further demonstrates that facial attractiveness only biases hiring recommendations of young respondents (below 40 years of age) as compared to older professionals. In contrast to previous research and although women appear somewhat more prone to bias than men, a gender-effect could not be found at the 5% confidence level. The distance between decision maker and applicant is found not to affect the importance placed on facial attractiveness.

To date, selection interviews remain the most widely used instrument for organizations in their search to fill their vacancies (Helmes and Pachana, 2008). Backed with information obtained in the recruitment phase, interviewers attempt to gather job-related information about applicants not obvious from paper cv's. Research, however, shows that interviews are easily prone to bias, with interviewers drawing conclusions based on information unrelated to effective performance on the job at hand (Shannon and Stark, 2003; Dubois and Pansu, 2004). Examples are biases based on race (Cesare, 1996), obesity (Puhl and Brownell, 2001), beardedness (Shannon and Stark, 2003), handicap (Rose and Brief, 1979; Farrow, 1982; Kalick, Zebrowitz, Langlois and Johnson, 1998), tattoos (Seiter and Hatch, 2005) and facial attractiveness (Luxen and van de Vijver, 2006; Tews, Stafford and Zhu, 2009).

In this article, we seek to extend knowledge on how applicants' facial attractiveness, inevitably revealed to the interviewer in a selection interview, affects hiring recommendations. We test our hypotheses in a field study of Flemish recruitment and selection professionals (R&S-professionals), using a discrete choice experiment. While this technique is new to this line of research, it has some clear advantages over methods used in past research. The outline of this article is as follows. It opens with a review of the literature on the effects of facial attractiveness in the individuals' personal and professional life. Special attention is given to recent work by Luxen and van de Vijver (2006) and Tews, Stafford and Zhu (2009). Afterwards, it is explained in the method section how both research designs can be integrated and improved using discrete choice modeling. Results are provided and discussed. Policy implications and directions for future research form the article's ending.

A note on the samples in past research

Similar to scientific work in other fields, researchers on selection processes have often tested their hypotheses on samples of students, instead of HR-professionals. Whether both samples produce similar results, i.e. whether training and experience is relevant (Dasgupta and Hunsinger, 2008), is still under debate. While Arvey and Campion (1982), Watkins and Johnston (2000), Hosoda, Stone-Romero and Coats (2003) argued that students and HR-professionals respond alike, differences between the two groups of respondents were found by Gilmore, Beehr and Love (1982), Singer and Bruhns (1991), Cesare (1996), Posthuma, Morgeson and Campion (2002), Dubois and Pansu (2004) and Luxen and van de Vijver (2006). To account for this lack of consensus, the research samples of articles in this literature review will be explicitly described.

What we know so far

Physical attractiveness is a daily issue. It is one of those characteristics you are directly able to evaluate when you meet someone, sit next to on a bus to work or pass in the street. Other characteristics like personality, attitudes and tastes are only revealed at a later point in time, if ever at all. We use this information to make decisions in our private life. Lee, Loewenstein, Ariely and Young (2008) for example found that more attractive individuals ask more attractive others on a date, and vice versa. The perception of our own attractiveness thereby operates as a benchmark. Interestingly, however, is that while less attractive individuals tend to place less weight on attractiveness and more on non-attractiveness-related attributes (for example sense of humor), the perception

of others' attractiveness is relatively stable to the perception of the own attractiveness. In other words, how we evaluate others is not affected by how we think about ourselves. Also, Critelli and Waid (1980) found in a sample of 123 dating couples that more attractive individuals do not love their partners more than less attractive individuals, nor are they being loved more.

Facial attractiveness is an important aspect of beauty. Women are for example perceived more attractive when their face is more feminine than on average (Gangestad and Scheyd, 2005). Men, on the other hand, do not necessarily benefit from a more than masculine face. However, it is important to note that attractiveness goes beyond the face alone. Two important aspects of female attractiveness for example are the Body Mass Index (Swami and Tovée, 2006) and the Waist-Hip-Ratio (Tovée and Cornelissen, 2001), with the BMI as the best predictor. When stretched a little bit further, clothing is associated as well. Townsend and Levy (1989) for example found that clothing affects the attractiveness of men when rated by female students. Moreover, Juhnke et al (1987) showed that clothing does not only alter our perception but also our behavior. In their research, well and poorly clothed students were instructed to ask individuals they passed for directions on how to arrive at a high-status tennis club or a low-status thrift shop. Poorly clothed students asking directions to the thrift shop received most help. The addition of a status variable does, however, make the effect of attractiveness and clothing less clear. Finally, Seiter and Hatch (2005) showed that while a tattoo lowers an individual's credibility, it does not affect his/her attractiveness.

As attractiveness affects individuals' personal life, it is logic to assume that it also affects individuals in their professional life. And it does. Jackson, Hunter and Hodge's (1995) research on 130 male and female undergraduates for example showed that more attractive adults are perceived more competent, especially when explicit information about competence is absent or when it is measured indirectly. Also, Judge, Hurst and Simon (2009) indicated that while General Mental Ability has the strongest effect on income, physical attractiveness has an effect as well. This constitutes the 'what is beautiful is good' stereotype, stating that more attractive individuals benefit from their appearance (Dion, Berscheid and Walster, 1972). As attractiveness is in general found to decrease with age (Morrow, 1990), younger applicants are thereby prone to be favored. But the 'what is beautiful is good' stereotype does not always apply. Sometimes beauty is beastly. Shahani-Denning (2003) for example argued that being attractive can be a handicap in an evaluation interview when the performance is poor. Apparently, more attractive individuals are held more accountable for their poor performance, which is more easily considered to result from lack of effort. Secondly, Marlowe, Schneider and Nelson's (1996) research on 112 managers showed that women only seem to benefit from their beauty when applying for non-managerial positions. According to the authors, this bias may be due to the fact that attractive women are associated with female attributes, while management positions are still associated with typical male attributes. With higher percentages of women in management positions, the source of this bias is expected to disappear. Interestingly, Marlowe, Schneider and Nelson (1996) also found that attractiveness was beneficial to men both in managerial and non-managerial positions. This is not entirely in line with Zebrowitz, Tenenbaum and Goldstein's (1991) research on 64 undergraduates. They found that only maturefaced men were favored when applying for a high-status job. Similar to women, babyfaced men were disadvantaged. This nuance was unfortunately not accounted for in the more recent Marlowe, Schneider and Nelson (1996) research.

3

Watkins and Johnston (2000) and Dubois and Pansu (2004) revealed a second nuance to account for. Their research, on samples of respectively 180 students and of 96 managers and 96 non-psychology students, showed that the effects of attractiveness are weakened by the qualifications of the applicant. Attractiveness matters when the applicant has a moderate qualification, but the effect disappears for highly qualified applicants. Finally, Hosoda, Stone-Romero and Coats (2003) found the attractiveness bias to be the strongest in within-subjects designs, asking individuals to assess multiple applicants at the same time. Unfortunately, this is also the most realistic design.

Recent research

Recently, two well-structured studies on the effect of attractiveness in selection decisions were published by Luxen and van de Vijver (2006) and Tews, Stafford and Zhu (2009).

Luxen and van de Vijver (2006) analyzed whether hiring recommendations are affected by mate choice and sexual selection theory, i.e. whether raters prefer attractive applicants of the opposite sex. Not only did they include both a sample of students as well as a sample of HR-professionals, they also investigated whether the expected contact intensity between the raters and the applicants has an effect. In other words, do individuals give different hiring recommendations when they have to work together with the applicant who is hired (high contact), as compared to when they do not (low contact). Respondents were asked to select applicants for a job (described to have low task demands) on the basis of 16 photographs and personality descriptions, the latter having lower or higher levels of dominance and agreeableness (warm, generous, confidential and cooperative). Results indicate that attractiveness has an effect. Both students and HR-professionals, men and women alike, prefer attractive applicants of the opposite sex when the expected contact intensity is high. Attractiveness has no effect when the expected contact intensity is low nor, as far as the HR-professionals are concerned, when applicants of the same sex are considered. Students on the other hand are also biased in recommending attractive applicants of the same sex. These findings advocate opening selection panels to external interviewers who will per definition have low expected contact intensity with the applicants.

Apparently unaware of this research, Tews, Stafford and Zhu (2009) examined the weight that 130 hiring managers place on applicants' attractiveness, General Mental Ability (GMA), and the Big Five personality dimensions in assessing employment suitability for high and low consumer contact positions in the hotel industry (front office associate for high and housekeeper and maintenance associate for low). The authors argued that in this industry, no sophisticated selection tools are used in the hiring procedure which may allow managers to be influenced by the physical appearance or attractiveness of the applicants. Compared to the Luxen and van de Vijver (2006) study, Tews, Stafford and Zhu (2009) made explicit use of the GMA to characterize the applicants, which can be considered a strength. Dunn, Mount, Barrick and Ones (1995) and Schmidt and Hunter (1998) clearly marked GMA to have a high predictive validity. This is also true for conscientiousness, but not so for all of the Big Five personality dimensions. Another drawback of the latter research is that it does not account for the expected contact intensity between the rater and the applicant, while Luxen and van de Vijver (2006) did. Finally, Tews, Stafford and Zhu (2009) used also jobs in which attractiveness is job-related, while Luxen and van de Vijver (2006) did not. The facial photographs to be presented to the 130 managers were a priori rated on

attractiveness by students, whereby extreme ratings were eliminated. 47 of the 256 profiles were selected to prevent tiredness, 3 of which were repeated to test rater reliability. Managers thus rated a total of 50 profiles. Results demonstrate that attractiveness indeed has an affect upon ratings, but GMA and conscientiousness have a stronger influence. Managers thus make hiring decisions that maximize performance. Attractiveness has a greater impact on the evaluation of applicants in high contact positions. In that case, attractiveness can be seen as a job-relevant factor because of the interpersonal interaction with people outside the organization. These interactions between customers and employees have a short duration whereby attractiveness may be relevant in creating a favorable impression for the whole organization. This is because the employees represent the 'face' of the enterprise. The second hypothesis is partially supported. The difference between front office and housekeeping is significant, but no significant difference is found between front office and maintenance. Two explanations can be given. First of all, the maintenance employees in this organization may have a high degree of consumer contact. Secondly, it is possible that a smaller sample of managers with greater variability have rated these profiles.

Hypotheses

1) GMA and conscientiousness are the most important attributes for R&S-professionals

2) The facial attractiveness of applicants has an effect on hiring recommendations

3) Both men and women are biased by the attractiveness of opposite sex applicants

4) The attractiveness bias is stronger in the high contact condition than in the low contact condition

5) Younger persons are more biased by attractiveness than older persons

Method

The hypotheses are tested using a discrete choice experiment (DCE), a stated preference technique in which respondents are asked several times to select their preferred choice (for example a product) out of a small number of alternatives (similar products). Each alternative thereby consists of a combination of attributes and levels (Louviere et al, 2008). The respondents' preferences are elicited by the choices they make. Each alternative provides some degree of satisfaction, and respondents choose that alternative from the set which provides them with the highest degree of satisfaction, called 'utility' by economists. The utility function can be expressed by:

$$U_{nj} = V_{nj} + \varepsilon_{nj} \qquad (1)$$

in which respondents n's utility from product j (U_{nj}) is composed of an observed (V_{nj}) and an unobserved part (ε_{nj}). The observed part is specified as:

$$V_{nj} = \beta_1 X_{1j} + \beta_2 X_{2j} + \ldots + \beta_m X_{mj} \qquad (2)$$

with m attributes of product j taking values $X_{1j}, …, X_{mj}$. The purpose of the DCE is to estimate these β's and thereby revealing the impact of each attribute on the decision process.

In the present DCE, respondents are several times asked to choose their preferred applicant from a set of applicants. Each set consists of three applicants, as Sandor and Wedel (2002) showed three-alternative designs to be more efficient than two-alternative designs. For each applicant, the respondents see a picture (facial attractiveness only), and six characteristics that differ in level: below job requirements, equal to job requirements and excelling job requirements. Among these six characteristics are the person's General Mental Ability (GMA) and his or her degree of conscientiousness. These attributes are included based on their high predictive validity (Dunn, Mount, Barrick and Ones, 1995; Schmidt and Hunter, 1998), which provides a clear advantage over the Luxen and van de Vijver (2006) research. Drawing on Schmidt and Hunter's (1998) literature review, the remaining attributes are a job sample performance test (proven to relate to job performance), work experience (not strongly related to job performance), extraversion (correlation depending on the type of job) and graphology (unrelated to job performance). Also facial attractiveness can have three levels: unattractive, averagely attractive and attractive. In order to align most strongly with the Tews, Stafford and Zhu (2009) design, attempts were made to retrieve the faces and corresponding attractiveness scores from the authors. As the scores could not be obtained and the faces were drawings instead of real pictures, new pictures were rated by 148 adults (59 male, mean age 35). Pictures of faces of which the standard deviation in the attractiveness score was low or nonexistent were withheld. All pictures were from individuals appearing between the age of 28 and 35. Pictures of unattractive, averagely attractive and attractive individuals were used in the design. Unlike facial attractiveness, for which the level is hidden, the level of the other six attributes is thus explicitly stipulated. To be more realistic, pictures can appear several times, but always with the same levels of the attributes.

The DCE uses seven attributes with three levels each, resulting in 343 alternatives (applicants). With the three-alternative design, this results in 115 choices to be made by each respondent. To lower task demand and thereby to increase estimation efficiency (Hensher, Stopher and Louviere, 2001), this number is reduced to 5 using the Sandor and Wedel (2002) algorithm. One set is added to test for response consistency (choice set 6), and 3 choice sets with only two applicants are added for transitivity tests (choice sets 7 to 9).

Luxen and van de Vijver (2006) found that the effect of attractiveness differed depending on the gender of the respondent and the applicant. Morrow (1990) also found an effect due to age differences. To test for this possible effect, respondents were asked to provide information on their gender and their age. Male respondents could then be given a questionnaire with pictures of women while female respondents completed the same questionnaire but with pictures of men. Also in line with Luxen and van de Vijver (2006), respondents were asked to choose a color (black or white) which opened either an introduction text in which respondents were asked to hire a direct colleague (high contact), or in which they were asked to hire an employee they would afterwards not have to work with (low contact). Except for the introduction text, both groups completed the same questionnaire. With this breakdown, we can evaluate the effect of distance between manager and applicant on the hiring decision. This provides the present research with an advantage over the Tews, Stafford and Zhu (2009) research.

Before starting, respondents are briefly informed about the characteristics of the vacant job. The vacancy concerns an in-house accountant, to which attractiveness is a factor unrelated to performance.

Once the data is collected, a mixed logit model is fitted on these data. This technique is preferred to the ordinary multinomial logit model, as it allows the attributes to vary over the respondents with density $f(\beta)$. This density function is specified as the distribution that matches the expectations about the variation of the βs as closely as possible and will be, as in most applications, be specified as being normally distributed (Train (2003)).

To check the method's accuracy, respondents are at the end of the questionnaire also asked to rank the attributes themselves. Attractiveness is not included in this list, as it is expected to yield socially desirable responses.

Sample & procedure

In March 2010, emails were sent to professionals, including an invitation to participate in the research, a link to the online questionnaire (Appendix 5) and contact information. The email addresses included all individuals who once enrolled for the post-graduate programme on HRM at EHSAL Management School (5645 addresses) and contact persons of the HUB company projects (998 addresses). Circa 300 addresses were bounced and 50 addresses were added using information in the out-of-office replies, for a total of 6400 email addresses. As the database does not guarantee that receivers are involved in the selection of applicants (research requirement), respondents were twice warned (once in the email and once before starting the questionnaire) to only participate if they met this condition. If not, respondents were asked to forward the questionnaire to their HR-department. A reminder was sent after one week. All emails with requests for (future) information or with comments were answered within 12 hours. Respondents participated voluntarily and were not paid for their cooperation.

We received a total of 856 questionnaires (13% of submitted emails). Respondents ending the questionnaire before all choice sets had been answered were excluded (217, often quitting directly after reading the second warning on the research requirement). Respondents only skipping the demographic variables at the end of the questionnaire were not excluded. Respondents failing response consistency and/or transitivity tests were excluded (89). One respondent was excluded due to a missing value for age. In total, the analysis is thus based on 549 respondents, of whom 323 are male (59%). Table 1 presents the demographic analyses of the database.

Table 1: Demographic analyses

Age	Males age	Females age
18-30	18%	37%
31-40	32%	29%
41-50	32%	21%
51-60	15%	10%
>60	4%	2%

Employees	Males number employees	Females number employees	Total
0-10	15%	14%	15%
11-20	7%	7%	7%
21-30	3%	5%	4%
31-50	14%	7%	11%
51-100	11%	14%	12%
101-150	8%	9%	8%
151-200	3%	3%	3%
201-250	4%	3%	3%
>250	35%	38%	36%

Recruitment total	
0-5	56%
6-10	18%
11-20	11%
21-30	5%
31-40	1%
41-50	2%
>50	7%

Looking at the age division of our sample, there appears to be an equal spread between younger (<40) and older (>40) workers. Female respondents are somewhat younger than male respondents. There also is no bias in the size of the organizations respondents work for, with 37% of organizations being small (<50 workers) and 36% being large (>250). The majority of respondents work in organizations recruiting up to 20 new employees in the past year.

Results

Respondents were at the end of the questionnaire asked to rank the attributes. Drawing on Schmidt and Hunter's (1998) literature review, the ranking is expected to show the importance of conscientiousness for an in-house accountant and, as the job requires at least a bachelor degree, of GMA. Also the job sample performance test is expected to obtain a high rank, as it is found to predict future performance. Extraversion (De Fruyt and Mervielde, 1999) and work experience are expected to receive lower ranks, but higher than graphology (Schmidt and Hunter, 1998).

Descriptive analyses (Table 2) show both male and female respondents, in both the high and low contact condition, rank the attributes identically. These rankings were made by first counting the number of times a particular attribute is put on each place (1 to 6) and then assigning the rank to the attribute which is put on that place by most respondents (calculated as a percentage).

8

Table 2: Descriptive analyses

Males		Females	
44%	Conscientiousness	Conscientiousness	48%
31%	GMA	GMA	35%
28%	Work experience	Work experience	32%
29%	Job sample performance test	Job sample performance test	29%
58%	Extraversion	Extraversion	61%
77%	Graphology	Graphology	81%

Males high contact		Males low contact	
45%	Conscientiousness	Conscientiousness	44%
32%	GMA	GMA	30%
32%	Work experience	Work experience	25%
32%	Job sample performance test	Job sample performance test	30%
55%	Extraversion	Extraversion	60%
78%	Graphology	Graphology	76%

Females high contact		Females low contact	
47%	Conscientiousness	Conscientiousness	48%
33%	GMA	GMA	36%
32%	Work experience	Work experience	32%
28%	Job sample performance test	Job sample performance test	30%
63%	Extraversion	Extraversion	60%
83%	Graphology	Graphology	80%

We checked and confirmed this order by calculating how often an attribute is on rank 1 or 2, 3 or 4 and 5 or 6. Conscientiousness and GMA most often reside on 1 and 2, extraversion and graphology on 5 and 6. The job sample performance test and work experience are most often ranked 3th and 4th and quite close to one another, with a smaller standard deviation for the latter. Hypothesis 1 is thus supported.

As this analysis may hide individual differences, we also performed calculations at the individual level. When it comes to the top-2 (or top-3), 46.96% (75.7%) of male respondents put GMA and conscientiousness in the top-2 (top-3), compared to 43.8% (70%) of female respondents. When GMA and conscientiousness are in the top-3, the other attribute is more often work experience than the job sample performance test, both for male and female respondents. When graphology is not considered the least important attribute, it is often extraversion and to a lesser extent the job sample performance test. Interestingly, the contact condition does not seem to have much effect. For males, the only difference is that respondents with high contact include GMA and conscientiousness more often in their top-2 (51%) than males with low contact (43%). For females, the opposite is true. Females with high contact include GMA and conscientiousness less often in their top 2 (35%) than females with low contact (49%).

A mixed logit analysis is used to determine which attributes significantly explain the variance in respondents' choices. This analysis includes all seven attributes, the importance of which is assumed to vary over respondents (Appendix 1). Six out of seven attributes are found to significantly explain the choices made by

the respondents at the 5% confidence level: only graphology has totally no effect on hiring recommendations. Attractiveness is found to influence hiring recommendations of Flemish R&S-professionals, supporting hypothesis 2. Since we performed a mixed logit analysis, we also have information on the extent in which our respondents differ with respect to the importance of the different characteristics. If the standard deviation of a characteristic appears to be significant, we can conclude that the effect of this characteristic differs significantly for our respondents. From Appendix 1, it is clear that respondents do not differ as much in their preferences for attractiveness, nor for graphology or work experience. For GMA, conscientiousness, extraversion and the job sample performance test, there are significant differences between the preferences respondents have.

In order to investigate whether this bias could be linked to gender, distance or age, we performed a second mixed logit analysis consisting of all seven attributes, the importance of which is again assumed to vary over respondents, and three dummies (relating attractiveness to gender, distance and age) that are assumed to be fixed (Appendix 2). Five out of seven attributes are found to significantly explain the choices made by the respondents at the 5% confidence level: intelligence, conscientiousness, work experience, the job sample performance test and extraversion. Graphology again has totally no effect on hiring recommendations. Looking at the attractiveness dummies, the dummy for gender (man = 1) is found to be significant only at the 10% confidence level. The sign shows women are somewhat more biased by attractiveness than men. This result differs from Luxen and van de Vijver's (2006) finding on decision makers' preferences for attractive opposite sex applicants and supports Tews, Stafford and Zhu's (2009) statement that the effect of attractiveness is smaller when other characteristics of the applicants are provided as well. Hypothesis 3 is thus not supported.

Hypothesis 4 states that the attractiveness bias is stronger in the high contact than in the low contact condition. The dummy for distance is however not significant (Appendix 2), thereby not supporting hypothesis 4. Whether decision makers select a direct colleague or someone they will afterwards not be working with, thus appears not to affect the extent to which they allow attractiveness to bias their selection decisions. Again, this finding differs from the Luxen and van de Vijver (2006) research.

The final hypothesis suggested that younger decision makers are more biased by attractiveness than their older colleagues. The dummy for age is highly significant at the 5% confidence level (Appendix 2). The sign of the coefficient shows that attractiveness is significantly related to the decisions of young respondents but not so for older respondents, thereby supporting hypothesis 5. To test whether young and older respondents differed amongst themselves on the importance of the remaining attributes, separate mixed logit analyses were conducted for the two groups (<40 years of age and over 40, Appendix 3 & 4). This technique is preferred over the inclusion of multiple dummies for each of the seven attributes, as it lowers the number of respondents required to accurately estimate the coefficients and to avoid high correlation of the variables. We see that graphology, although not significant, is under debate only amongst younger decision makers. Older respondents differ over conscientiousness.

Limitations and future research directions

This study has four limitations. First, the method we used implicitly assumes all respondents are heterosexual, as male respondents are provided with pictures of females and vice versa. Homosexual respondents may therefore

appear not to take attractiveness (of women) into account, while they may have done so if they were shown pictures of men. In this case, the analysis may be less accurate compared to when only heterosexual decision makers respond. However, there were few solutions. One solution could be to ask respondents explicitly which gender they preferred, another to ask respondents not to participate if they were homosexual. Both solutions were considered inoperable. Second, the decision to present male respondents only with pictures of females and vice versa disables drawing conclusions on whether attractive females are preferred over attractive men, whether men also preferred attractive men, etc. This was not possible due to the higher number of respondents that would then be required and to the higher number of choices that respondents would have to make. Future research may continue this line of research using mixed gender choice sets. Third, while the facial pictures have been tested on attractiveness by a panel before the study was initiated and only those pictures showing no or very small variance were withheld, it is possible that some respondents had diverging opinions of attractiveness which introduces inaccuracy into the analysis. Ideally, all respondents should first be assessed on which pictures they consider attractive in advance, so that the design could be tailored on their preferences. The panel was chosen as a proxy, as we believe respondents would no longer be unaware of the parameters being tested if they saw the same pictures reoccurring in the questionnaire than they were before asked to rate on attractiveness. Future research may investigate on a way to avoid this bias. Fourth, the panel rated each picture separately while respondents saw three pictures next to one another. Future research may investigate whether it is more accurate to each time present the panel with three pictures instead of only one picture at a time. Finally, future research may extend this line of research by considering different occupational and/or organizational contexts and by including a broader range of attractiveness features such as height, weight and clothing.

Conclusion

Attractiveness is in general found to affect hiring recommendations of young Flemish recruitment and selection professionals. While women appear to be more biased than men, the relation is not significant at the 5% confidence level. Also the correlation between attractiveness and decision maker-applicant distance could not be supported. Results suggest caution in asking applicants to attach a picture to their cv and mark the importance of interviewer training.

References

Arvey, R.D., & Campion, J.E. (1982). The employment interview: a summary and review of recent research. *Personnel Psychology, 35,* 281-322.

Cesare, S.J. (1996). Subjective judgment and the selection interview: a methodological review. *Public Personnel Management, 25(3),* 291-306.

Critelli, J.W., & Waid, L.R. (1980). Physical attractiveness, romantic love, and equity restoration in dating relationships. *Journal of Personality Assessment, 44(6),* 624-629.

Dasgupta, N., & Hunsinger, M. (2008). The opposite of a great truth is also true: when do student samples help versus hurt the scientific study of prejudice? *Psychological Inquiry, 19(2),* 90-98.

De Fruyt, F. & Mervielde, I. (1999). Riasec types and Big Five traits as predictors of employment status and nature of employment. *Personnel Psychology, 52,* 701-727.

Dion, K., Berscheid, E., & Walster, E. (1972). What is Beautiful is Good. *Journal of Personality and Social Psychology, 24(3),* 285-290.

Dubois, M., & Pansu, P. (2004). Facial attractiveness, applicants' qualifications and judges' expertise about decisions in preselective recruitment. *Psychological Reports, 95*, 1129-1134.

Dunn, W.S., Mount, M.K., Barrick, M.R., & Ones, D.S. (1995). Relative Importance of Personality and General Mental Ability in Managers' Judgments of Applicant Qualifications. *Journal of Applied Psychology, 80(4),* 500-509.

Farrow, D.L. (1982). The effects of applicant handicap, sex and job characteristics on selection evaluations. *Academy of Management Proceedings,* 282-286.

Gangestad, S.W., & Scheyd, G.J. (2005). The evolution of Human Physical Attractiveness. *The Annual Review of Anthropology, 34,* 523-548.

Gilmore, D.C., Beehr, T.A., & Love, K.G. (1982). Effects of applicant sex, physical attractiveness and type of job on employment interviewers' decisions. *Educational Resources Information Center,* 3-16.

Helmes, E., & Pachana, N.A. (2008). Value of interviews for admission to clinical training programs: perspective of program directors. *Australian Psychologist, 43(4),* 249-256.

Hensher, D.A., Stopher, P.R. & Louviere, J.J. (2001). An exploratory analysis of the effect of numbers of choice sets in designed choice experiments: an airline choice application. *Journal of Air Transport Management, 7*, 373-379.

Hosoda, M., Stone-Romero, E.F., & Coats, G. (2003). The effects of physical attractiveness on job-related outcomes: a meta-analysis of experimental studies. *Personnel Psychology, 56*, 431-462.

Jackson, L.A., Hunter, J.E., & Hodge, C.N. (1995). Physical attractiveness and intellectual competence: a meta-analytic review. *Social Psychology Quarterly, 58(2)*, 108-122.

Judge, T.A., Hurst, C., & Simon L.S. (2009). Does it pay to be smart, attractive, or confident (or all three)? Relationships among General Mental Ability, Physical Attractiveness, Core Self-Evaluations, and Income. *Journal of Applied Psychology, 94(3),* 742-755.

Juhnke, R., Barmann, B., Cunningham, M., Smith, E., Vickery, K., Hohl, J., & Quinones, J. (1987). Effects of attractiveness and nature of request on helping behavior. *The Journal of Social Psychology, 127(4),* 317-322.

Kalick, S.M., Zebrowitz, L.A., Langlois, J.H., & Johnson, R.M. (1998). Does human facial attractiveness honestly advertise health? Longitudinal data on an evolutionary question. *Psychological Science, 9(1),* 8-13.

Lee, L., Loewenstein, G., Ariely, D., Hong, J., & Young, J. (2008). If I'm not hot, are you hot or not? Physical-attractiveness evaluations and dating preferences as a function of one's own attractiveness. *Association for Psychological Science, 19(7),* 669-677.

Louviere, J.J., Islam, T., Wasi, N., Street, D., & Burgess, L. (2008). Designing discrete choice experiments : do optimal designs come at a price ? *Journal of Consumer Research, 35,* 360-375.

Luxen, M.F., & van de Vijver, F.J.R. (2006). Facial attractiveness, sexual selection and personnel selection: when evolved preferences matter. *Journal of Organizational Behavior, 27,* 241-255.

Marlowe, C.M., Schneider, S.L., & Nelson, C.E. (1996). Gender and attractiveness biases in hiring decisions: are more experienced managers less biased? *Journal of Applied Psychology, 81(1),* 11-21.

Morrow, P.C. (1990). Physical attractiveness and selection decision-making. *Journal of Management, 16(1),* 45-60.

Posthuma, R.A., Morgeson, F.P., & Campion, M.A. (2002). Beyond employment interview validity: a comprehensive narrative review of recent research and trends over time. *Personnel Psychology, 55,* 1-81.

Puhl, R., & Brownell, K.D. (2001). Bias, discrimination and obesity. *Obesity Research, 9(12),* 788-805.

Rose, G.L., & Brief, A.P. (1979). Effects of handicap and job characteristics on selection evaluations. *Personnel Psychology, 32,* 385-392.

Sandor, Z., & Wedel, M. (2002). Profile construction in experimental choice design for mixed logit models. *Marketing Science*, *21(4)*, 55-75.

Schmidt, F.L., & Hunter, J.E. (1998). The Validity and Utility of Selection Methods in Personnel Psychology: Practical and Theoretical Implications of 85 Years of Research Findings. *Psychological Bulletin, 124(2),* 262-274.

Seiter, J.S., & Hatch, S. (2005). Effect of tattoos on perceptions of credibility and attractiveness. *Psychological Reports, 96*, 1113-1120.

Shahani-Denning, C. (2003). Physical attractiveness bias in hiring: what is beautiful is good. Hofstra University, *Department of Psychology,* 14-17.

Shannon, M.L., & Stark, C.P. (2003). The influence of physical appearance on personnel selection. *Social behavior and personality, 31(6)*, 613-624.

Singer, M.S., & Bruhns, C. (1991). Relative effect of applicant work experience and academic qualification on selection interview decisions: a study of between-sample generalizability. *Journal of Applied Psychology, 76(4),* 550-559.

Swami, V., & Tovée, M.J. (2006). The influence of body mass index on the physical attractiveness preferences of feminist and nonfeminist heterosexual women and lesbians. *Psychology of Women Quaterly, 30,* 252-257.

Tews, M.J., Stafford, K., & Zhu, J. (2009). Beauty Revisited: the impact of attractiveness, ability and personality in the assessment of employment suitability. *International Journal of Selection and Assessment, 17(1)*, 92-100.

Tovée, M.J., & Cornelissen, P.L. (2001). Female and male perceptions of female physical attractiveness in front-view and profile. *British Journal of Psychology, 92,* 391-402.

Townsend, J.M., & Levy, G.D. (1989). Effects of potential partners' costume and physical attractiveness on sexuality and partner selection. *The Journal of Psychology, 124(4),* 371-389.

Train, K. E. (2003) *Discrete choice methods with simulation*. Cambridge: University Press.

Watkins, L.M., & Johnston, L. (2000). Screening Job Applicants: the impact of physical attractiveness and application quality. *International Journal of Selection and Assessment, 8(2)*, 76-84.

Zebrowitz, L.A., Tenenbaum, D.R., & Goldstein, L.H. (1991). The impact of Job Applicants' Facial Maturity, Gender, and Academic Achievement on Hiring Recommandations. *Journal of Applied Social Psychology, 21(7),* 525-548.

Appendix 1 – Mixed logit analysis

```
Mixed logit model                              Number of obs   =       8250
                                               LR chi2(7)      =     187.68
Log likelihood = -1759.1637                    Prob > chi2     =     0.0000
```

keuzes	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Mean						
aantrekkel~d	.2297588	.0986756	2.33	0.020	.0363581	.4231595
intelligen~e	1.244787	.0955512	13.03	0.000	1.05751	1.432064
conscintie~d	1.047278	.1044589	10.03	0.000	.8425422	1.252014
grafologie	.1031906	.1049406	0.98	0.325	-.1024893	.3088705
werkervaring	.8821301	.0520647	16.94	0.000	.780085	.9841751
extraversie	.4593029	.0619409	7.42	0.000	.3379011	.5807047
arbeidsproef	1.41781	.1017713	13.93	0.000	1.218342	1.617278
SD						
aantrekkel~d	.110164	.1523569	0.72	0.470	-.18845	.408778
intelligen~e	-.4172556	.1189325	-3.51	0.000	-.650359	-.1841523
conscintie~d	.5551654	.1276688	4.35	0.000	.3049392	.8053917
grafologie	-.0544475	.1545316	-0.35	0.725	-.3573239	.2484289
werkervaring	-.1693532	.0907908	-1.87	0.062	-.3472999	.0085934
extraversie	.3417675	.1077566	3.17	0.002	.1305685	.5529665
arbeidsproef	1.040906	.0887686	11.73	0.000	.8669226	1.214889

The sign of the estimated standard deviations is irrelevant: interpret them as being positive

Appendix 2 – Mixed logit analysis, including dummies for gender, distance and age

```
Mixed logit model                                Number of obs   =        8235
                                                 LR chi2(7)      =      184.55
Log likelihood = -1752.4169                      Prob > chi2     =      0.0000
```

keuzes	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Mean						
aantrekkel~2	-.1815844	.1029821	-1.76	0.078	-.3834256	.0202568
aantrekkel~3	.020918	.0994565	0.21	0.833	-.174013	.2158491
aantrekkel~4	.267379	.0999729	2.67	0.007	.0714356	.4633223
aantrekkel~d	.1545054	.1445478	1.07	0.285	-.1288031	.4378139
intelligen~e	1.254501	.0974967	12.87	0.000	1.063411	1.445591
conscintie~d	1.031766	.1004202	10.27	0.000	.8349464	1.228586
grafologie	.1161599	.1059958	1.10	0.273	-.0915881	.3239079
werkervaring	.8902698	.0534369	16.66	0.000	.7855353	.9950043
extraversie	.4539439	.0622779	7.29	0.000	.3318815	.5760063
arbeidsproef	1.4216	.1050406	13.53	0.000	1.215724	1.627476
SD						
aantrekkel~d	.028156	.1232736	0.23	0.819	-.2134558	.2697679
intelligen~e	.4959441	.1083129	4.58	0.000	.2836547	.7082335
conscintie~d	.275134	.1475045	1.87	0.062	-.0139696	.5642376
grafologie	.384515	.1174335	3.27	0.001	.1543496	.6146804
werkervaring	-.0773992	.129882	-0.60	0.551	-.3319631	.1771648
extraversie	.3479568	.1164969	2.99	0.003	.119627	.5762866
arbeidsproef	1.071595	.092961	11.53	0.000	.8893948	1.253795

```
The sign of the estimated standard deviations is irrelevant: interpret them as
being positive
```

16

Appendix 3 – Mixed Logit Analysis, only young respondents

```
Mixed logit model                          Number of obs   =       4485
                                           LR chi2(7)      =     129.01
Log likelihood = -886.76631                Prob > chi2     =     0.0000
```

keuzes	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Mean						
aantrekkel~d	.4115287	.1600071	2.57	0.010	.0979206	.7251368
intelligen~e	1.412061	.1648956	8.56	0.000	1.088872	1.735251
conscintie~d	1.147405	.1592284	7.21	0.000	.8353235	1.459487
grafologie	.0369237	.173232	0.21	0.831	-.3026048	.3764521
werkervaring	1.053692	.0865472	12.17	0.000	.8840629	1.223322
extraversie	.536193	.0961761	5.58	0.000	.3476914	.7246946
arbeidsproef	1.620887	.1644503	9.86	0.000	1.298571	1.943204
SD						
aantrekkel~d	-.0893552	.2076565	-0.43	0.667	-.4963545	.3176441
intelligen~e	.5646042	.1768634	3.19	0.001	.2179582	.9112501
conscintie~d	-.1951539	.2438006	-0.80	0.423	-.6729942	.2826864
grafologie	-.4597408	.14252	-3.23	0.001	-.7390749	-.1804067
werkervaring	-.0530577	.1590033	-0.33	0.739	-.3646984	.2585831
extraversie	-.4829771	.1356814	-3.56	0.000	-.7489077	-.2170465
arbeidsproef	1.291753	.1512368	8.54	0.000	.9953344	1.588172

The sign of the estimated standard deviations is irrelevant: interpret them as being positive

Appendix 4 – Mixed Logit Analysis, only older respondents

```
Mixed logit model                                   Number of obs   =        3465
                                                    LR chi2(7)      =       68.12
Log likelihood = -789.34762                         Prob > chi2     =      0.0000
```

keuzes	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Mean						
aantrekkel~d	.0639981	.1273775	0.50	0.615	-.1856573	.3136535
intelligen~e	1.134141	.1314255	8.63	0.000	.8765517	1.39173
conscintie~d	.9421682	.1380843	6.82	0.000	.6715279	1.212808
grafologie	.0702483	.1395243	0.50	0.615	-.2032144	.3437109
werkervaring	.8021358	.0757688	10.59	0.000	.6536316	.9506399
extraversie	.3843248	.0911472	4.22	0.000	.2056796	.5629701
arbeidsproef	1.285876	.1440825	8.92	0.000	1.00348	1.568273
SD						
aantrekkel~d	.0187097	.1846253	0.10	0.919	-.3431493	.3805686
intelligen~e	.4449786	.1674067	2.66	0.008	.1168675	.7730897
conscintie~d	.456405	.1794867	2.54	0.011	.1046175	.8081924
grafologie	.1705344	.1381173	1.23	0.217	-.1001704	.4412392
werkervaring	-.1960166	.1417167	-1.38	0.167	-.4737763	.0817431
extraversie	.3490877	.1553509	2.25	0.025	.0446054	.6535699
arbeidsproef	.9990672	.1333265	7.49	0.000	.7377521	1.260382

The sign of the estimated standard deviations is irrelevant: interpret them as being positive