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Stigmatized as Token Women? A first Look at Factors
influencing Evaluation of Women associated with
Quotas.

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To a particular strong woman:

My mother and friend Elisabeth Zehnter

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1 Quotas – fighting women’s “academic dying”?

For centuries women had been excluded from academic education in Austria and Europe in general. Although this exclusion has ended during the last century (Liebwald, 2011), one glance at current statistics in Austria suffices to get an impression that women as a social group are disadvantaged to this day. Women graduating from university with a Master Degree have outnumbered men since the turn of the millennium, yet, the ratio of men and women in academics tells an utterly different story. The higher one looks up the academic ladder, the fewer women are found – an issue that has been referred to as leaky pipeline (Liebwald, 2011). Dr.ⁱⁿ Brigitte Ratzner¹ (2011) named this phenomenon during a conference on the subject of quotas at universities “the academic dying of women” (“akademisches Frauensterben”). In Austria, disadvantage of women in academics is especially pronounced: women constituted only 28% of researchers in 2009, leaving Austria in sixth last place compared to other European states (European Commission, 2012), and only 4% of leading positions at Austrian universities were occupied by women in 2008 (European Commission, 2009). The Medical University of Vienna – which will be in scope of the thesis at hand – employed 18 female compared to 99 male professors in 2011 (Department of Gender Mainstreaming at the Medical University of Vienna, 2011). Thus, distribution of males and females in academic positions at the Medical University of Vienna is shaped like an open scissor that reveals an increasing gender gap the higher academic positions are.

To fight work related gender inequality, affirmative action in form of quotas has been implemented by law in Austria in 1993 (Liebwald, 2011). The Law for Advancement of Women (Frauenförderungsgebot des Bundes-Gleichbehandlungsgesetz, (B-GIBG)) obliged employers to eliminate underrepresentation of women. Underrepresentation is defined as a proportion of women below 45% (B-GIBG, 1993). In 2009, Austria’s universities have been obligated to apply the B-GIBG, and to introduce quotas in their recruitment plans (Liebwald, 2011).

¹ Dr.ⁱⁿ Brigitte Ratzner is head of the department of women advancement and gender studies at the Technical University of Vienna. She spoke at a conference addressing the subject of quotas at Universities: “How do quotas get into universities?” (“Wie kommt die Quote in die Universitäten?”) that was held in October 2011 in Vienna.

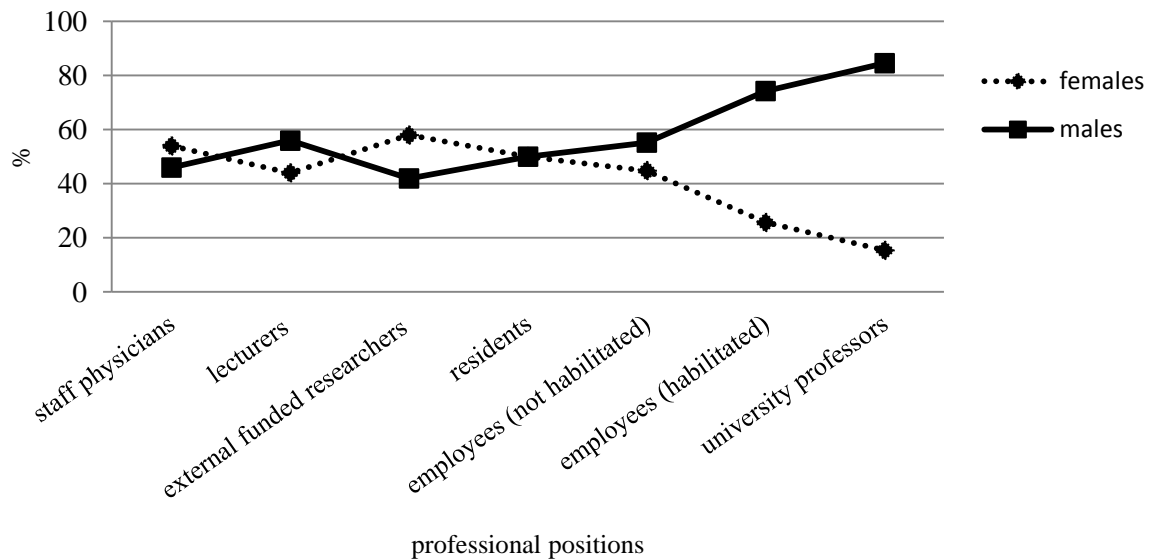


Chart 1: Proportions (in %) of males and females in different professions at the Medical University of Vienna in 2011 (based on Department of Gender Mainstreaming at the Medical University Vienna, 2011).

The Medical University of Vienna has already implemented affirmative action including quotas in 2004. Women are to be favored in applications, in promotions, and in training if equally qualified as the best qualified male applicant until a quota of at least 40% females in every hierarchical level is established (Medical University of Vienna, 2004).² Using quotas, the Medical University of Vienna has applied an instrument that has been source of controversial debates since the early 80ies when quotas were first discussed (Liebwald, 2011).

Those who favor quotas argue that they are a useful tool to fight underrepresentation of women in an efficient and effective way (Mukherjee³, 2010), to help women to get in higher and leading (job) positions (Rietschel⁴, 2010), and in the end, to establish female role models for students and young scientists (Mukherjee, 2010; Rietschel, 2010). Supporters also argue that society cannot afford to forgo talents of qualified women (Öchsner, 2011).

Opponents of quotas, on the other hand, express concern that unqualified females are hired in high positions (Büschemann, 2011), or that women, who are highly talented, are globally seen as incompetent and unqualified (Wintermantel⁵, 2010). Maris Hubschmid (2012) argues that quotas discriminate against women, and she fears that women could be stigmatized as token

² „Frauen sind bei Bewerbungen, beim beruflichen Aufstieg und bei der Aus- und Weiterbildung (§§11b – 11d B-GIBG) bei gleicher Qualifikation wie der bestgeeignete Mitbewerber so lange vorrangig zu berücksichtigen [sind], bis eine 40% Quote erreicht ist.“ (Frauenförderplan der Medizinischen Universität Wien, 2004).

³ Prof. Dr. Joybrato Mukherjee has been president the Gießen University since 2009.

⁴ Prof. Dr. Ernst Rietschel was president of the Leibniz Society from 2005 to 2010 Präsident.

⁵ Prof. Dr. Margret Wintermantel was president German Rector’s Conference from 2006 bis 2012.

women (Quotenfrauen). Especially in science, reputation is of enormous importance, and being seen as token woman could be obstructive to a career in academia (Dzwonnek⁶, 2010). Kimura (1997) stresses that preferential treatment results in “degrading women to second class citizenship in the academic community” (p. 241).

In debates concerning quotas, issues of stigmatization of females as unqualified token women arise repeatedly in Europe and Austria; stigmatization is seen as one of the most severe disadvantages of quotas. But scientific results on the token woman stigma are currently not present in Austria or any other European countries that have applied similar affirmative action plans. Therefore, the purpose of the thesis at hand is to close this void, and to take a closer look at feared stigmatization⁷ due to quotas as they are implemented at Austria’s universities. Main interest of this research is to enlighten the question *if* beneficiaries of quotas are being stigmatized. Furthermore, variables that promote or inhibit stigmatization are scrutinized. As emphasized in the title, the thesis is but a first look at stigmatization due to quotas, and among the first of its kind in Austria; hence, close focus will be appointed to implications for further research.

Since quotas are no homogeneous tool, but differ in various aspects, I first will define quotas as they are implemented at the Medical University of Vienna – representative for other Austrian universities that have similar affirmative action plans. Next, I will present the current state of research on stigmatizing effects of affirmative action that has mainly been conducted in the US. Based on this research I will derive hypotheses for the thesis at hand.

2 Quotas at the Medical University of Vienna

Gender quotas are strategies of current gender politics that are meant to establish equal proportions of men and women especially in higher professional and political positions. The European Union endorses the idea of *gender* quotas that potentially target both males and females, whereas in Austria solely *women* quotas entered debates of gender equality. Women quotas are defined as temporarily favoring women in areas where they have been underrepresented to this day. Declared goal of such quotas is to establish equality between men and women in politics, economics and science (Liebwald, 2011). Note that quotas are not

⁶ Dorothee Dzwonnek has been general secretary of the German Research Foundation since 2007.

⁷ Stigma is defined according to Goffman (1963) as discrediting attribute. Note that a stigma is result of a social ascription processes, and hence, always dependent on social and cultural context (Tröster, 2006).

one homogenous tool. Rather, quotas can be applied in various forms which take demographic status more or less into account.

At the Medical University of Vienna – as in other Austrian universities – women are preferentially selected in applications, promotions, and training if equally qualified as the best qualified male applicant until a quota of 40% is established (Medical University of Vienna, 2004). Hence, quotas at the Medical University of Vienna are so called *decisional* or *process quotas* (Entscheidungsquoten). In every job related decision women are to be treated preferentially until a certain proportion is reached (Liebwald, 2011). Decisional quotas have to be distinguished from so called *goal quotas* which set a certain percentage of women as goal that should be attained in a certain time, but does not necessarily affect every decision. To establish a proportion of women of 30% in high academic positions until 2013, for example, is a goal quota (Liebwald, 2011). Furthermore quotas at the Medical University Vienna can be characterized as flexible. Rigid quotas favor target-groups unconditionally, whereas flexible⁸ quotas combine preferential treatment with certain preconditions (Liebwald, 2011). At the Medical University of Vienna precondition is that a woman has to be equally qualified as the best qualified male applicant to be considered for preferential treatment. Thus, quotas at the Medical University of Vienna also meets criteria for the so called performance- or qualification-bound quotas that only allow preferential selection if a certain degree of qualification is given (Liebwald, 2011). In summary, quotas at the Medical University of Vienna are flexible, performance-bound, and decisional.

3 Summary of current research

As mentioned earlier, research on stigmatizing effects of affirmative action in general and on quotas as they are implemented at Austria's universities specifically has been scarce to non-existent. Therefore, it is necessary to rely on research that has mainly been conducted in the US; although there are some essential differences between affirmative action in the US and Europe/ Austria. In regard of the thesis at hand, *the* most important difference surely is that in the US (as in Canada and Australia) quotas are prohibited by law (Iyer, 2009). Nevertheless some researchers included quotas and strong preferential treatment in their examinations.

⁸ Flexible quotas are not to be confounded with the in Germany discussed "Flexi-Quota". The Flexi-Quota is flexible in that it allows employers to determine their own quotas on an individual and voluntary basis (Liebwald, 2011).

In the following, I will first present research that focuses on stigmatization due to affirmative action, and on variables that have already been shown to exhibit direct effect on stigmatizing. But research on such – also in the US – is scarce. To get a broader scope of variables likely to influence stigmatization, I then will move on to research on attitudes toward affirmative action, and factors related to these attitudes. Based on this research, I also mean to derive assumptions on the subject of stigmatization.

3.1 Stigmatization due to affirmative action

Heilman, Block and Lucas (1992, study 2) questioned 184 white men in a field study. They approached men at airports, train stations and in business areas in Chicago and New York, and asked them to think of a colleague that entered their organization in the past few years, and that belongs to a social group that typically would not have been employed in the participant's job during the past. Subsequently, participants were asked to indicate causes for hiring this colleague using a prepared questionnaire. Affirmative action was listed among other causes to disguise the purpose of the study. In addition, participants had to evaluate their colleague in terms of competence, activity, potency, and interpersonal characteristics. Furthermore, participants had to indicate to what degree they thought qualification of the colleague had played a role in his or her hiring. Results reveal a strong negative relationship between extent to which the colleague was believed to be a beneficiary of affirmative action and evaluation of his or her competence. Colleagues that are seen as beneficiaries of affirmative actions are perceived less active and less potent. Concerning their interpersonal characteristics they are evaluated more negatively if affirmative action is thought to have played a role in their hiring. The more affirmative action is indicated as having led to the hiring of a colleague, the fewer participants perceive qualification as causal for his/ her hiring. In sum, Heilman et al. (1992, study 2) succeed to show stigmatizing effects of affirmative action on beneficiaries. However, it is not possible to draw conclusions about causality on base of this field study. It remains unclear if the hired colleagues are evaluated more negatively because they are seen as beneficiaries of affirmative action, *or* if they are seen as beneficiaries because they are perceived as unqualified (Iyer, 2009).

In an experimental study, Heilman et al. (1992, study 1) confirm that women who are associated with affirmative action suffer a stigma of incompetence. 129 undergraduate students received application material of a fictive candidate who has recently been hired in a

certain position. One of the described positions – electrician – was strongly male sex-stereotyped; another position – lab technician in a hospital – was weakly male sex-stereotyped. Fictive applicants were both male and female. Female candidates were partly associated with affirmative action by putting the phrase “affirmative hire” on the candidate’s application sheet. In addition, job descriptions in the affirmative action condition contained the following statement: „The Consolidated Power Authority [The Metropolitan Hospital Authority] is an Affirmative Action Equal Opportunity Employer. In compliance with Affirmative Action Guidelines, we do not discriminate on the basis of sex, race, color, religion or national origin“ (Heilman et al. 1992, Study1, p. 537-538). Subsequently, participants were asked to evaluate applicants in regard to their competence, activity, potency, and interpersonal characteristics. Furthermore, participants should indicate to what degree they thought the hire was employed on base of her qualification. As predicted by the authors, female applicants are evaluated more negatively as their male counterparts for the strongly male sex-typed job (electrician). But if associated with affirmative action women are perceived less competent for both strong and weak male sex-typed positions than their female co-applicants, who were not associated with affirmative action. Additionally, beneficiaries of affirmative action are perceived less active and less potent. No significant effects were found for interpersonal characteristics. That beneficiaries of affirmative action in the before-cited field study were evaluated less favorable in terms of interpersonal characteristics, explain Heilman et al (1992) as following: people who are part of the working world seem to be stricter in their evaluation of affirmative action beneficiaries as students. All in all, Heilman and colleagues‘(1992) results reveal stigmatizing effects on women that (seemingly) benefit from affirmative action. In similar studies, researchers came to results that are consistent with the findings of Heilman et al. (1992). Women who are associated with affirmative action are confronted with a stigma of incompetence (Dietz-Uhler & Murrell, 1998; Heilman, Block, & Stathatos, 1997; Gilbert & Stead, 1999; Resendez, 2002).

Heilman and Blader (2001) show that female undergraduate students are perceived by other students less competent, and less likely successful if they were associated with affirmative action. Interestingly, it was sufficient that the university admitting the target students claimed their intent to especially consider female and minority applicants in a statement that was simply added to the applicants’ material. Another interesting finding of this study is that stigmatizing effects appear to the same degree, if selection criteria of the university are

ambiguous. If so, participants simply assume that women are preferentially treated and evaluate them accordingly.

In summary, there is good evidence for stigmatization in the presence of affirmative action (Dietz & Murell, 1998; Heilman et al., 1992; Heilman et al. 1997; Heilman & Blader, 2001, Gilbert & Stead, 1999; Resendez, 2002). Attribution theory (Kelley, 1973) helps explain these stigmatizing effects. People tend to make out causes for behaviors of others. According to Kelley (1973), behavior can be explained by situational factors as well as personal characteristics. For success of others, situational variables often are overestimated. In presence of affirmative action, women's success can be attributed to the situational factor *affirmative action* rather than to competence or merit (Doverspike, Taylor, & Arthur, 2006). Consequently, women's qualification and competence are discounted as causal factors (Heilman, 1992; Resendez, 2002). Based on Kelley (1973), Heilman (1992) and Resendez (2002) the following hypothesis is derived:

Hypothesis 1a:

Stigmatization occurs due to quotas implemented at the Medical University of Vienna. Women who benefit from quotas are evaluated less favorable in regard to their competence, qualification, activity, potency, and interpersonal characteristics, compared to women who are not associated with quotas.

3.2 Predictors of stigmatization

To this date, little research has been done on predictors of stigmatization of affirmative action beneficiaries. Some researchers investigated the influence of type of affirmative action on perception of beneficiaries (Heilman, Battle, Keller, & Lee, 1998; Evans, 2003); some scrutinized attitude toward affirmative action and its influence on stigmatization (Resendez, 2002); and others examined justification strategies as predictors of stigmatization (Heilman, McCullough, & Gilbert, 1996).

3.2.1 Type of affirmative action

Heilman, Battle, Keller and Lee (1998) find type of affirmative action influencing evaluation of beneficiaries. Women that are preferentially selected are perceived more positively when it is indicated that not only gender, but also qualification is taken into account during the

decision process. Yet, those women are evaluated more negatively than their female colleagues that do not benefit from affirmative action at all.

Evans (2003) observed stigmatization but for (in the US) illegal forms of affirmative action that favor women and minorities without considering their qualification. (In the US) Legal forms of affirmative action that treat women and minorities preferentially under the condition of equal qualification compared to the best qualified white male co-applicant, however, do not result in stigmatization.

Four types of affirmative action can be distinguished based on the extent gender is taken into account (Kravitz 1995; Harrision, 2006): Equal opportunity, opportunity enhancement, weak preferential treatment also called tie break, and strong preferential treatment. Equal opportunity wants to eliminate discrimination in that it simply forbids putting negative weight to demographic status of applicants. Opportunity enhancement aims to increase the pool of qualified female applicants in that it supports women prior to selection decisions. Women, for example, can be provided special training. Sometimes organizations invite women especially to apply, thus emphasize the importance of female employees to the organization. Tie break or weak preferential treatment favors women under conditions of equal qualification; whereas one speaks of strong preferential treatment, if women are selected unconditionally, or if quotas are part of the affirmative action plan.

*Hypothesis 1b*⁹:

Extent to which gender is taken into account moderates stigmatization of affirmative action beneficiaries. Women that are not at all associated with affirmative action should not experience stigmatization at all. Weak forms of affirmative action (opportunity enhancement) should result in some stigmatization of beneficiaries; whereas more severe stigmatization should be the consequence of weak as well as strong preferential treatment (including quotas): The following “ladder of stigmatization” is predicted:

No affirmative action < Opportunity Enhancement < Tie Break/ Weak Preferential Treatment < Strong Preferential Treatment (including quotas).

⁹ Note that Hypothesis 1b specifies Hypothesis 1a.

3.2.2 Lack of knowledge about affirmative action

Evans (2003) stresses that among US citizen misperceptions about affirmative action targeting women and minorities are common. But misperceptions and false beliefs about affirmative action might have significant effects on stigmatization of beneficiaries. In a study conducted by Bell, Harrison and McLaughlin (2000) 19% of participants thought that affirmative action would result in hiring less qualified women or Blacks over better qualified white men. Such procedures, however, would be illegal in the US, emphasizes Evan (2003). 10% of Bell and colleagues' (2000) participants believed that affirmative action is reverse discrimination. Consistently, in Oh, Choi, Neville, Anderson, and Landrum-Brown (2010) 43.2% of student participants expressed the opinion that affirmative action is rather harmful than helpful. Students were worried that affirmative action would discriminate against non-targets in order to fulfill rigid quotas although this would be illegal in the US.

Presumably, in Austria a lot of people also have misbeliefs about affirmative action like quotas, and these false beliefs likely affect stigmatization of beneficiaries.

Hypothesis 2:

Lack of knowledge about quotas at the Medical University of Vienna influences stigmatization of beneficiaries negatively. The less an individual knows about quotas, the less favorable beneficiaries of quotas are evaluated.

3.2.3 Attitude toward affirmative action

According to the theory of reasoned action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), social behavior is influenced by attitude (mediated by the intention to perform a behavior). Bell, Harrison and McLaughlin (2000) demonstrate behavioral consequences of attitude toward affirmative action. Consistent with Fishbein and Ajzen's (1975), the authors find that participants with positive attitude toward affirmative action rather were willing to send post cards expressing their support for affirmative action to a state represent, and they actually showed this behavior more often than participants that have negative attitude toward affirmative action (study 4). Bell et al. (2000) point out that stigmatization, too, can be seen as behavioral consequence of affirmative action attitude.

Resendez (2002) verifies that attitude toward affirmative action for women and minorities has a significant influence on stigmatization of beneficiaries. Study participants with positive attitude toward affirmative action perceive beneficiaries' competence, expected career success, and extent to which qualification has played a role in hiring significantly more positive. Likewise, Dietz-Uhler and Murrell (1998) conclude that mainly attitude toward affirmative action determines stigmatization of beneficiaries.

Based on Fishbein and Ajzen's (1975) theory of reasoned action and the empirical findings of Bell and colleagues (2000) and Resendez (2002), I assume that attitude toward quotas affects stigmatization of beneficiaries:

Hypothesis 3:

Attitude toward quotas significantly influences perception of its beneficiaries. The more positive attitude toward quotas is, the more positive those, who benefit from quotas, are seen.

3.2.4 Justification strategies

Heilman, McCullough and Gilbert (1996) scrutinize effects of justification strategies for affirmative action that were offered to non-beneficiaries (white men). Preferential treatment of women was justified with past discrimination against them. Heilman's et al.'s (1996) findings reveal that such justification strategy is effective in reducing stigmatization, only if women are equally qualified as not favored white males. If favored women are less qualified than their male counterparts, justification does not result in decreased stigmatization.

Harrison, Kravitz, Mayer, Leslie and Lev Arey (2006) examine in a meta-study the relationship between attitude toward affirmative action and justification of affirmative action. They find that justification strategies that emphasize past discrimination add positively to affirmative action attitude; whereas justification strategies concentrating on underrepresentation of women or minorities affect affirmative action attitude in a negative way.

Hypothesis 4a:

The way quotas are justified moderates stigmatization of quota beneficiaries. To justify quotas with discrimination against women results in decreased stigmatization of women.

Hypothesis 4b:

On the other hand, justification of quotas with underrepresentation of women in work settings increases stigmatizing effects.

3.3 Predicting attitude toward affirmative action

As before-mentioned, research on stigmatizing effects of affirmative action is scarce (Bell et al., 2000; Harrison et al. 2006); So far, more researchers have been focusing on attitude toward affirmative action. Since attitude proved to have significant influence on stigmatization of affirmative action beneficiaries (Dietz & Murrel, 1998; Resendez, 2002), research on affirmative action attitude might also result in productive hypotheses. In the present study, I aim to reveal if predictors of attitude toward affirmative action can also predict stigmatization of affirmative action beneficiaries. Harrison and colleagues (2006) find that justification strategy, for example, influences attitude toward affirmative action. Heilman et al. (1996) demonstrate that justification strategies directly predict stigmatization of female beneficiaries. Consistently with the theory of reasoned action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), other predictors of affirmative action *attitude* might also exhibit influence on stigmatization. Thus, in the following section, research on attitude toward affirmative action is presented, that I will derive hypotheses about stigmatization of female beneficiaries from.

3.3.1 Perception of fairness

Nacoste (1990) was among the first to point out possible tremendous influence of perceived fairness of affirmative actions on stigmatization. He stresses that affirmative action intervene in selection procedure by putting positive weight on group membership of some (black or female) applicants; thus, procedural justice seems to be threatened. The more weight is shifted from performance-based factors – like qualification – to group membership, the more procedural justice seems to be distorted, and the un-fairer affirmative action is perceived. The (real or imagined) disruption of fair selection procedures should lead to stigmatizing responses of non-beneficiaries that are expressed by discrediting qualification of beneficiaries (Nacoste, 1990). Despite his detailed description of the direct influence of perceived fairness on stigmatization, Nacoste (1990) himself focuses more on features of affirmative action that

result in perceived unfairness rather than on stigmatization. Other authors that took up his theory of procedural justice neither examined the direct link between perceived fairness and stigmatization, but concentrated on the relationship between perceived fairness and attitude toward affirmative action.

Bobocel, Song Hing, Davey, Stanley and Zanna (1998) conclude that people's perception of fairness of affirmative action is strongly related to their attitude toward those measures. In several studies the authors examine if concerns about fairness of affirmative action are genuine, or if these arguments merely serve to rationalize racist prejudice against Blacks regarding their professional competence. Indeed results indicate that some people's objections considering fairness of affirmative action simply have the purpose to hide their racist prejudices. But Bobocel and colleagues (1998) also come to the conclusion that many of their participants truly are concerned about fairness of affirmative action. Participants whose fairness standards are violated by affirmative action tend to have more negatively colored attitude toward affirmative action.

Consistently with Bobocel and colleagues (1998), Kravitz (1995) demonstrates that perception of fairness is a good predictor for attitude toward affirmative action. How fair a specific affirmative action plan is thought to be, depends on weight given to demographic status of the target group. Thereby weak preferential treatment that favors beneficiaries only if equally qualified as the best (white) male applicant is disliked as much as strong preferential treatment, since it is perceived as violating procedural fairness – namely consistency in treatment across people (Kravitz, 1995).

Furthermore Cropanzano, Slaughter and Bachiochi (2005) confirm that affirmative action is perceived less favorable if standards of fairness are violated – interestingly, this also holds true for potential beneficiaries: those who potentially benefit from affirmative action decrease support if affirmative action is perceived as unfair.

Based on these findings and especially picking up Nacoste's (1990) idea that perceived fairness of affirmative action is a "source[es] of stigma" (p. 175), I assume that extent to which quotas are perceived as fair is positively related to evaluation of quota beneficiaries:

Hypothesis 5:

There is a positive relationship between perception of fairness of quotas and evaluation of quota beneficiaries. People who consider quotas at the Medical University of Vienna as fair evaluate beneficiaries more favorable.

3.3.2 Perception of discrimination against women

Oh et al. (2010) reveal that consciousness for discrimination against Blacks is among the strongest predictors for support of affirmative action targeting Blacks. Analogously, Konrad and Hartmann (2001) find that people who are aware of existing discrimination against women tend to have more positive attitude toward affirmative action for females. According to Konrad and Hartmann (2001), perception of discrimination is mediating the relationship between gender and attitude toward sex-based affirmative action. Women rather than men think that women are victims of discrimination, and those women who are conscious of sex-based discrimination are more likely to support affirmative action targeting females.

Tougas and Veilleux (1988) focus on the perspective of women. According to their results, women who perceive inequality between men and women in work settings have more positive attitude toward affirmative action.

Son Hing, Bobocel, and Zanna (2002) examine if people who strongly believe in principles of meritocracy resist affirmative action for women and minorities less, if confronted with discrimination against women and minorities in work settings. Highly merit-oriented people usually object affirmative action because these measures violate meritocracy. The authors assume that people who endorse principles of meritocracy experience the world as just. However, if those people perceive the world as unfair and discriminating against certain social groups, they should make concessions in regard of affirmative action that aim to eradicate discrimination – also if affirmative action ultimately violates meritocracy. Perception of discrimination should especially reduce resistance against affirmative action in people that are highly merit-oriented, since discrimination is not compatible with meritocracy (Son Hing et al, 2002). To test their assumptions Son Hing and colleagues (2002) experimentally varied extent of perceivable discrimination in a fictive work setting. Findings confirm Son Hing et al.'s (2002) hypotheses: Participants who strongly endorse meritocracy principles decrease their resistance to affirmative action if they perceive discrimination.

Influence of perceived discrimination is also salient in a study by Martins and Parsons (2007). Women who believe more in sex-based discrimination evaluate organizations that apply affirmative action and employ many women in top positions more positively; while women, who do not believe in job-related sexist discrimination, perceive organizations with affirmative action plans and a great percentage of women in high positions in a more negative light. Martins and Parsons (2007) explain the latter finding as following: women often tend to

distance themselves from affirmative action in order to avoid the reproach that oneself has got a certain position solely due to ones gender – but note that this relationship only holds true if women are not aware of sex-based discrimination.

Hypothesis 6:

Perception of sex-based discrimination is positively associated with evaluation of quota beneficiaries. The more an individual is aware of sex-based discrimination, the better s/he evaluates women who benefit from quotas.

3.3.3 Gender

Heilman and colleagues (1992) do not find differences across gender in stigmatization of affirmative action beneficiaries. However, Oh and colleagues' (2010) findings suggest that people that potentially benefit from affirmative action, due to their demographic status, have more positive attitude toward affirmative action. Black Americans, for example, are more inclined to believe that affirmative action is successful in decreasing underrepresentation of ethnic minorities in higher education. On the other hand, respondents which are not potential beneficiaries emphasize that affirmative action is unfair and would result in reverse discrimination against them.

Women tend to have more positive attitude toward affirmative action, and also see quotas in a more positive light than men (Kravitz & Platania, 1993). Interestingly, women not only support affirmative action that helps women, but affirmative action in general – also if they are not immediate beneficiaries (Eagly, Diekmann, Johannesen-Schmidt and Koenig, 2004; Kravitz & Platania, 1993). Women's general support of affirmative action could be due to the concept of cooperative self-interest (Smith & Kluegel, 1984; cited by Kravitz & Platania, 1993): any measures that serve others to decrease discrimination will ultimately promote women's fight against sex-based discrimination. Eagly and colleagues (2004) argue that women's social role leads them to favor political measures that support disadvantaged groups.

Although Heilman et al. (1992) do not observe gender differences in stigmatization of affirmative action beneficiaries; results that gender is a strong indicator for affirmative action attitude are consistent. Given the assumption that predictors of attitude toward affirmative action also should predict stigmatization, I hypothesize that women display less stigmatization of female quota regulation beneficiaries.

Hypothesis 7:

Gender plays a moderating role in stigmatization of quota beneficiaries. Women evaluate those who benefit from quotas more favorable than men do.

3.3.4 Social dominance orientation

Social dominance orientation is strongly associated with attitude toward affirmative action (Pratto, Sidanius, Stallwoth, & Malle, 1994; Sidanius, Pratto & Bobo, 1996). Within the so called group dominance perspective, social dominance orientation is defined as drive to maintain inequality between (social) groups, and is strongly correlated with political conservatism. In fact, political conservatism is assumed to constitute an ideological instrument to legitimize inequality between groups. Sidanius and colleagues (1996) demonstrate in a series of studies that the relationship between social dominance orientation and negative attitude toward affirmative action targeting disadvantaged groups is especially pronounced in highly educated people who belong to the dominant group. The authors explain this as following: a) affirmative action means a threat to material and symbolic resources of the dominant group, b) the better education dominant group members are, the better they understand the influence of affirmative action on their resources-related interests, and c) members of the dominant group that are highly educated better understand how political ideology that preserves the dominant group's superiority also helps their interests in regard of resources.

Since quotas in university context aim to decrease inequality between men and women in academia, highly educated males with high social dominance orientation should evaluate female beneficiaries more negatively than males with low scores on social dominance orientation. This negative relationship should only occur for males since they are part of the dominant group.

Hypothesis 8:

Stigmatizing effects are affected by an individual's social dominance orientation. Males with high levels of social dominance orientation evaluate quota beneficiaries more negatively than males who exhibit little social dominance orientation. This negative relationship does not occur for women.

3.3.5 Competition pressure

The group dominance perspective allows deriving further assumptions concerning influence of competition pressure on attitude toward affirmative action. According to Sidanius et al. (1996), all human societies are based more or less on hierarchical structures between groups. At least one group is privileged in these hierarchical structures, whereas at least one other group has to face social disadvantages. In essence, politics serve competition between diverse groups for limited material and symbolic resources. Competing groups instrumentalize ideology (like superiority) to legitimize their claim of certain material and symbolic resources.

In work settings Fletcher and Nussbaum (2010) distinguish between competition for rewards, competition for recognition, and competition for status. Academic positions can be seen as limited resource of reward, recognition and status that women as well as men compete for. Dion (1997) finds that the likelihood for ethnic conflicts rises if competition between ethnic groups is increased. This also could be the case for gender conflicts. The more males and females compete for the same resources, the worse conflicts between those two social groups could get. The more limited a certain resource is (as in the case of high academic positions), the more severe competition for this resource should become, and involved individuals should use ideology to legitimize their claim. Hence, women who perceive a great deal of competition pressure should have more positive attitude toward quotas and its beneficiaries. On the other hand, men that experience competition pressure should have more negative attitude toward quotas and benefitting women, since quotas are threatening their claim for high academic positions.

Thus, based on the group dominance perspective, perceived competition pressure should affect stigmatization of quota beneficiaries.

Hypothesis 9:

Perceived competition in the working environment moderates stigmatization of women who benefit from quotas in dependence of an individual's gender. While women who experience high levels of competition pressure evaluate quota beneficiaries more favorable; men who perceive a great deal of competition pressure tend to stigmatize quota beneficiaries negatively.

Chart 2 depicts the nine hypotheses stated. Quota regulation leads to negative stigmatization of its female beneficiaries (hypothesis 1a). This influence is moderated by several variables, namely: knowledge about quotas, attitude toward quotas, justification with increase of

women’s representation, justification with discrimination, perceived fairness of quotas, perception of discrimination against women, a rater’s gender, social dominance orientation, and competition pressure; the effects of social dominance orientation and competition pressure are further moderated by a rater’s gender. Minus (-) and plus (+) signs indicate if a moderating variable enhances (+) or inhibits (-) stigmatization. Chart 3 shows hypothesis 1b that specifies to what degree stigmatization influenced by each affirmative program. Higher weight in arrows indicates higher degree of expected stigmatization.

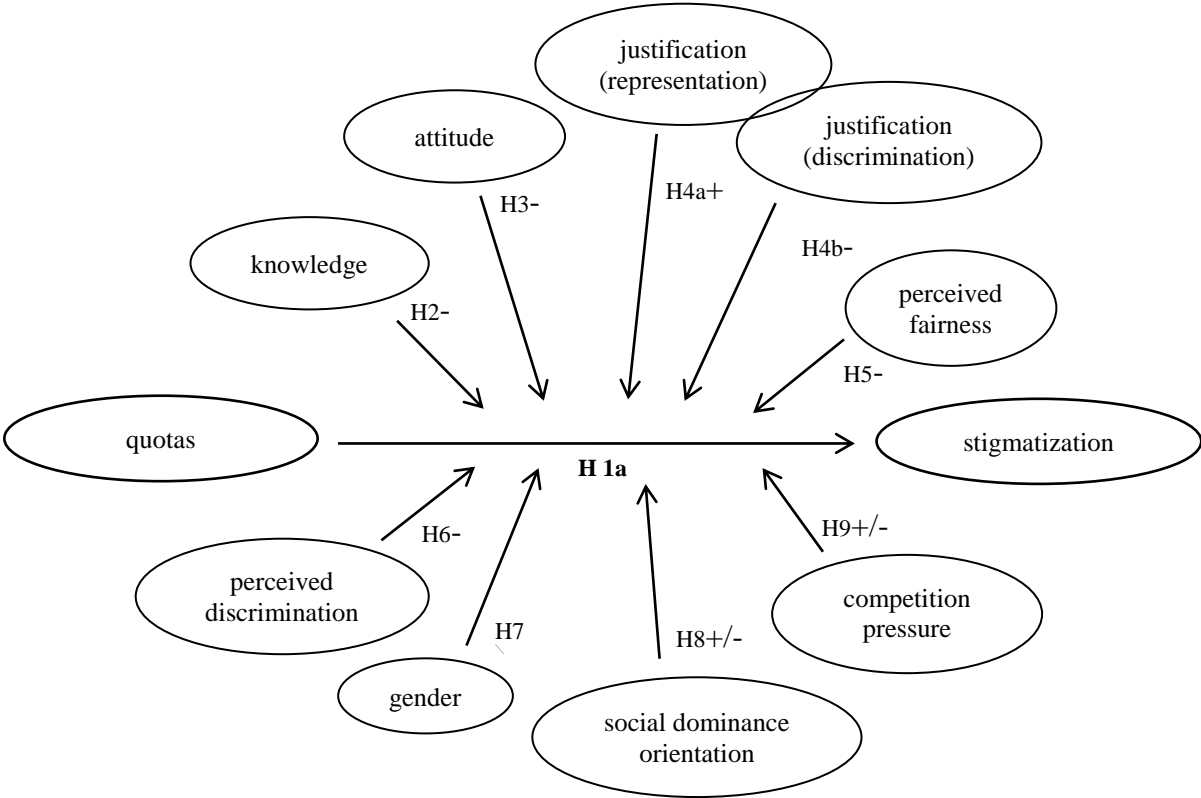


Chart 2: Summary of the stated hypotheses. Quotas as independent variables are supposed to induce stigmatization (H1a). Many other factors are hypothesized to exhibit moderating influence on stigmatization (H2 - H9). + indicates that a factors enhances stigmatization; - signifies inhibiting influence of a factor.

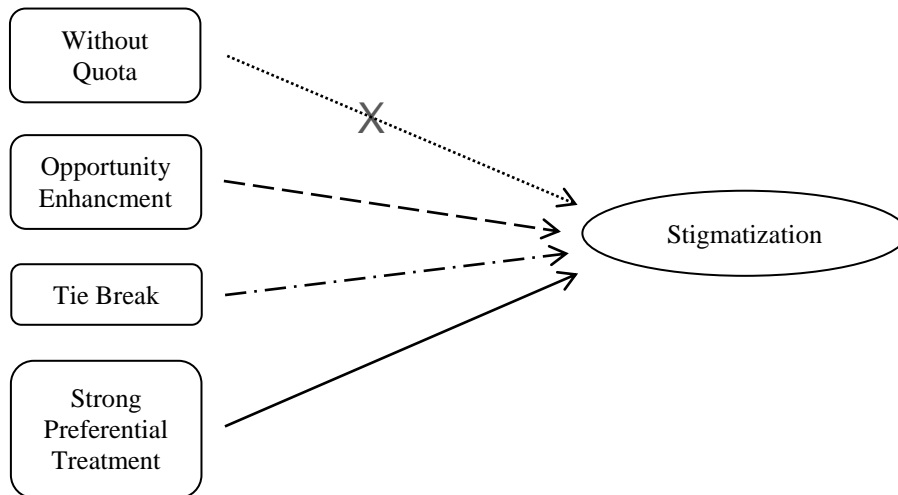


Chart 3: Hypothesis 1b: Type of affirmative action moderates degree of stigmatization. Women not associated with quotas at all are not expected to suffer stigmatization (Without Quota); association with Opportunity Enhancement should lead to minor forms of stigmatization, whereas women who benefit from weak preferential treatment (Tie Break) are assumed to be stigmatized to a somewhat greater degree, and beneficiation of Strong Preferential Treatment is predicted to induce severe stigmatization.

4 Empirical study

To test the nine hypotheses stated above, a study design based on Heilman (1992) was developed. A young fictive female was introduced as new hire at the Medical University of Vienna. To assess the occurrence of stigmatizing effects due to quotas, the hire was associated with different forms of affirmative action plans including quotas. This was done by adding different statements (vignettes), which communicated the applied affirmative action plan, to a fictive job ad. Except the affirmative action plan which the fictive candidate was hired under, little information about her was provided. Study participants were asked to evaluate the fictive candidate. Given the lack of other information about her, participants were assumed to rely on the affirmative action plan the candidate was associated with, when judging her competence. Furthermore, a questionnaire was constructed to gather measures on assumed factors influencing stigmatization. The fictive hire was given a standard Austrian name (Martina Staller) to avoid triggering name-based stereotypes. To ensure fictivity of the candidate the online register of people employed at the Medical University of Vienna was checked for similar names. In a pretest, the study design was probed on a sample of undergraduate psychology students of the University of Vienna. In the main study, hypotheses were tested on a sample of young scientists at the Medical University of Vienna.

4.1 Pretest

The conducted study was preceded by a pretest, which had the following goals: a) to probe the online questionnaire that was constructed for use in the main study, b) to further develop the questionnaire by including open, explorative elements, and c) to get first insights in possible effects.

4.1.1 Subjects

Subjects were approached during an introductory statistic course for psychology students. Since the study was conducted online students were asked to sign up listing their E-Mail address. 160 students handed out their E-Mail addresses. They were contacted only a few days later, and asked again to take part in the study. Thus, participation was 100% voluntary. To avoid participation by others than the approached subjects, the questionnaire was password-secured.

In the end 78 undergraduate psychology students of the University of Vienna participated in the study; Response rate was about 55%, and dropout rate was only 7% indicating a good acceptance of the questionnaire. 11 students had to be excluded for obvious difficulties of understanding (see 4.1.7). Thus, the final sample consisted of 67 students; 52 females (78%) and 15 males (22%). 15 participants were aged younger than 20, 49 were aged between 20 and 25, and only three were older than 25. Students were randomly assigned to one of the four experimental conditions that represented different affirmative action plans: 18 took part in Without Quota, 14 in Opportunity Enhancement, 18 in Tie Break, and 17 in Strong Preferential Treatment.

4.1.2 Procedure

The framing of the study was similar to a study of Heilman et al. (1992) except that it was conducted online. Subjects were asked to evaluate job decisions of the Medical University of Vienna. Participants received a short description of a young female that was about to apply for a position as resident at the Medical University of Vienna. A job ad that was modeled after a typical job ad of the Medical University of Vienna was presented afterwards. It offered a position as resident in the department of ophthalmology at the Medical University of Vienna. Ophthalmology was chosen as gender-neutral job to avoid influence of gender stereotypes in evaluations of the fictive female applicant. The job ad included the experimental manipulation. Subsequently, participants evaluated the applicant regarding her competence and efficiency in the future job. Additionally, they should describe the applicant in terms of bipolar adjectives as active – passive, or cooperative – uncooperative to name but a few examples. At last, participants were asked to indicate to which degree the applicant was accepted due to her qualification.

This procedure was followed by a questionnaire that was designed to gather measures associated with quotas and evaluation of quota beneficiaries: including such as justification strategies for quotas, social dominance orientation to name but a few (for a detailed overview see chart 2). The questionnaire was given in a fixed sequence and it was not possible for participants to go back in the questionnaire.

4.1.3 Experimental manipulation

Employment ads of the Medical University of Vienna typically close with the following statement: “The Medical University of Vienna seeks to increase the proportion of women especially in leadership positions and among scientific personnel. Therefore qualified women are expressly invited for application. If equally qualified, women are preferentially hired.” (See for example Newsletter of the Medical University of Vienna, 2011, p. 7)¹⁰ Experimental manipulation was introduced by slightly altering this statement according to the before mentioned classification of affirmative action plans (Harrison, 2006; Kravitz, 1995). In one control condition the statement was removed completely, so that the fictive female applicant was not associated with affirmative action and the quota regulation at all (Without Quota). In a second control condition opportunity enhancement was communicated by dropping the last part of the statement; women were associated with a softer form of affirmative action that encouraged them explicitly to apply for the offered position, but no mentioning of quotas was included (Opportunity Enhancement¹¹). In a weak preferential treatment condition (Tie Break) the original version of the statement was offered, thus this condition simulated the way the Medical University of Vienna communicates applied quotas to newcomers and outsiders; whereas in a strong preferential treatment conditions, the sensitive term quota was introduced in the statement (Strong Preferential Treatment). Strong Preferential Treatment actually represents quotas as they are implemented through the Women Advancement Plan (see Medical University of Vienna, 2004).

All in all, four experimental manipulations were probed in the pretest: two control conditions and two versions of quotas:

1. *Without Quota*: no affirmative action statement was offered at the end of the employment ad.
2. *Opportunity Enhancement*: women were encouraged to apply for the offered position by stating “The Medical University of Vienna seeks to increase the proportion of

¹⁰ „Die Medizinische Universität Wien strebt eine Erhöhung des Frauenanteils insbesondere in Leitungsfunktionen und beim wissenschaftlichen Personal an und fordert deshalb qualifizierte Frauen ausdrücklich zur Bewerbung auf. Frauen werden bei gleicher Qualifikation vorrangig aufgenommen.“ (Mitteilungsblatt der Medizinische Universität Wien, 2011).

¹¹Capital letters are strictly used in reference to the concrete experimental condition of the present studies; for example **Opportunity Enhancement** written in capitals refers to the experimental condition associating women with opportunity enhancement; whereas if opportunity enhancement is not written in capitals, it is referred to such measures in general.

women, especially in leadership positions, and among scientific personnel. Therefore qualified women are expressly invited for application.”

3. *Tie Break* or Weak Preferential Treatment: the original statement of the Medical University of Vienna was used:

“The Medical University of Vienna seeks to increase the proportion of women, especially in leadership positions, and among scientific personnel. Therefore qualified women are expressly invited for application. If equally qualified, women are preferentially hired.”

4. *Strong Preferential Treatment*: the statement was expanded by the actual quota regulation as it is written down in the Women Advancement Plan of the Medical University of Vienna (Medical University of Vienna, 2004), including the sensitive quota term:

“The Medical University of Vienna seeks to increase the proportion of women, especially in leadership positions, and among scientific personnel. Therefore qualified women are expressly invited for application. If equally qualified, women are preferentially hired until a quota of 40% is established”.

4.1.4 Dependent measures

Dependent measures were chosen following Heilman and colleagues (1992) and Resendez (2002).

Competence of applicants was measured using two questions: *How competent do you expect the applicant will do this job?* And: *How efficiently do you expect the applicant will do the job?* Participants could indicate their answer on a scale from 1 (*not at all*) to 6 (*very*). These two questions were aggregated in one scale ($\alpha = 0.81$), and their average score was taken as perceived competence.

Ego-oriented soft skills: This scale combined the applicant’s activity and potency level ($\alpha = 0.71$). Activity was measured using a semantic differential including the extremes *active-passive*, *hardworking-lazy*, *persistent-gives up easily*, *energetic-sluggish*; the applicant’s potency was determined using the following bipolar adjectives: *strong-weak*, *forceful-timid*, *tough-soft*. All these adjectives describe soft skills that help an individual to pursue his/ her

career more or less independently from others; therefore, the scale was named *ego-oriented soft skills*¹².

Team-oriented soft skills of the applicant should be indicated by four more adjective pairs: *responsible-irresponsible, helpful-not helpful, cooperative-uncooperative, and trustworthy-untrustworthy*. These adjectives represent interpersonal characteristics that help an individual's career progress by interacting with others; hence, the scale was called team-oriented soft skills ($\alpha = 0.81$).

To enhance comparability of the single measures they were standardized by dividing the score by the number of items that was used to get each score. For example, team-oriented soft skills were measured using four items, thus scores were divided by four.

Extent of qualification: participants were asked to indicate to what degree the applicant was hired due to her qualification. Answers were to give in percentage (0 to 100%). To adjust the measure to the other measures scores were divided by 10.

4.1.5 Moderators of stigmatization

Measures hypothesized to moderate stigmatization were gathered in the following sequence that was the same for every study participant, and that could not be altered; nor could participants move backwards in the questionnaire.

Competition pressure that an individual experiences in its organization was measured by asking "*Do you experience competition pressure in your working environment?*" Participants could answer on a scale ranging from 1 (*not at all*) to 7 (*very*).

Attitude toward affirmative action: no questionnaire on attitude toward quotas as they are implemented at Austria's universities was available. Since quotas in Europe/ Austria differ fundamentally from affirmative action applied in the US and other countries, it was not an option to translate an existing questionnaire into German for use in this study. One of the main purposes of Study1 therefore was to collect data that would allow creating such a questionnaire for further use in The main study. Following Bell and colleagues (2000) participants of were asked to answer three questions: 1) "*In your opinion, what are*

¹² Soft skills include abilities that allow a person to successfully interact with others, and to cope with their behaviors; but also to cope with one's own strengths and weaknesses (Peters-Kühlinger & John, 2008).

advantages of quotas?” 2) *“In your opinion, what are disadvantaged of quotas?”*, and 3) *“What else does come to your mind when you think about quotas?”*

Knowledge: Subsequently, participants were given three statements about quotas. For each statement they should indicate if it is true for the Medical University of Vienna. Answer possibilities were *“Yes”, “Rather yes”, “Rather no”, “No”,* and *“I don’t know”*. These statements were to evaluate in a given sequence that could not be altered by participants, neither could they go back in the questionnaire. 1) *“The Medical University of Vienna invites qualified women for application”,* 2) *“The Medical University of Vienna favors women as applicants, even if they are less qualified”,* and 3) *“The Medical University of Vienna only favors women if they are equally qualified than the best male applicant”*.

Perception of Discrimination was assessed using an adapted form of the Modern Sexism Scale (Swim, Aikin, Hall, & Hunter, 1995) that measures denial of discrimination against women. The Scale was brought into German by Eckes, Thomas, and Six-Materna (1998). Items 5, 6, and 7 were dropped, since they are not related to working situations. Germany as reference country was replaced by Austria. The final scale included items like *“Discrimination against women still is a problem in Austria”* or *“Nowadays women are treated fair in working life”* ($\alpha = 0.80$). Participants could indicate consent on a scale ranging from 1 (*not at all*) to 6 (*very*).

Justification strategies: Two items for each justification of quotas with discrimination against women ($\alpha = 0.55$), and justification with increase in representation of women ($\alpha = 0.78$) were constructed to measure justification strategies. Participants could express consent on a scale from 1 (*not at all*) to 6 (*very*) to statements like *“The quota regulation helps to compensate for still existing discrimination against women”*.

Fairness was assessed by posing the following question: *“In your perception, how fair is the quota regulation at the Medical University of Vienna?”* Answers could be given on a 7-pointed scale (1 = *very unfair*, to 7 = *very fair*).

Social dominance orientation was measured using the short version of Pratto et al.’s (1994) *Social Dominance Orientation Scale* that was translated into German. Statements like *“Social equality should be increased”* had to be evaluated on a scale from 1 (*very negative*) to 7 (*very positive*) ($\alpha = 0.79$).

Demographic measures that participants should indicate were gender, age in five-years-categories (under 20, 21 to 25, 26 to 30, and so on to above 60), study subject (psychology, not psychology), and duration of studies in semester.

Additional Measures: Furthermore participants were asked to evaluate the subject ophthalmology on a 7-pointed scale (1 = *male*, 7 = *female*) to control for sex-stereotype of the offered job in the employment ad.

4.1.6 Results

Stigmatization of the female applicant was assumed to be result of her association with quotas. Other factors were hypothesized to moderate such stigmatizing effects.

Manipulation check: Job-related sex-stereotypes

The subject ophthalmology was neither rated as female nor as male sex-stereotyped ($m = 3.87$; $SD = 0.98$). Hence, evaluation of the female applicant is not moderated by job-related sex-stereotypes.

Hypothesis 1: Stigmatization due to quotas

To test hypothesis 1a and 1b, a multivariate analysis of variance was conducted on the four dependent variables *extent of qualification in hiring*, *competence*, *ego-oriented soft skills*, and *team-oriented soft skills*. The MANOVA shows a significant main effect of experimental condition on the evaluation of the female applicant, $F(4,62) = 4.74$, $p < 0.01$, $\eta^2 = 0.23$. Thus, associating females with different affirmative action plans including quotas seems to affect their evaluation by others. To establish the direction of this effect, mean scores for each dependent variable were inspected for each experimental condition. Those are interesting insofar, since results are quite contradictory to the predictions (see table 1).

Extent of qualification in hiring

According to the predictions ratings for *extent of qualification in hiring* should be reversely related to the extent that gender is considered in an affirmative action plan, thus extent of qualification should be rated highest in Without Quota (WQ), somewhat smaller in Opportunity Enhancement (OE), again smaller in Tie Break (TB), and minimal in Strong Preferential Treatment (SPT): $WQ > OE > TB > SPT$. Consistently with the predictions, the

extent to which qualification was considered in the hiring decision is rated highest for women not associated with affirmative action at all ($m = 7.63$; $SD = 1.62$). But curiously, the mean score for extent of qualification in hiring is almost evenly high for women in Tie Break ($m = 7.54$; $SD = 1.40$). For Women in Opportunity Enhancement, on the other hand ratings for extent of qualification in hiring are lowest ($m = 6.44$; $SD = 1.96$); in Strong Preferential Treatment scores are slightly higher than in Opportunity Enhancement ($m = 6.46$; $SD = 2.62$) (table 1). In sum, ratings of extent to which qualification is considered in hiring show the following pattern: WQ > TB > SPT > OE.

Competence

Exactly contrary to the predictions, women who were associated with strong preferential treatment that even used the sensitive term “quota” are rated most favorable in terms of competence ($m = 5.21$; $SD = 0.88$), followed by women who were associated with tie break ($m = 4.86$; $SD = 0.76$). Third best evaluated in terms of competence are women associated with opportunity enhancement ($m = 4.75$; $SD = 0.67$); and women who were not at all associated with affirmative action like quotas are rated lowest regarding their competence ($m = 4.67$; $SD = 0.95$). Thus, the assumed stigma of incompetence seems to be reversed in these findings.

Ego-oriented soft skills

Evaluations of ego-oriented soft skills are pretty much identical for female applicants in Without Quota ($m = 4.46$; $SD = 0.69$), in Tie Break ($m = 4.44$; $SD = 0.51$), and in Strong Preferential Treatment ($m = 4.46$; $SD = 0.66$); only in Opportunity Enhancement women’s scores for ego-related soft skills are somewhat lower ($m = 4.23$; $SD = 0.55$). Again, these results are not confirming predictions about stigmatization of quota beneficiaries.

Team-oriented soft skills

Following the scheme of reverse stigmatization, female applicants associated with strong preferential treatment receive the highest ratings for their presumed team-oriented soft skills ($m = 4.80$; $SD = 0.65$). Women not associated with affirmative action are rated second best in terms of team-related soft skills ($m = 4.62$; $SD = 0.82$), followed by those who were associated with weak preferential treatment ($m = 4.51$; $SD = 0.74$). Least favorable evaluated are again women in Opportunity Enhancement ($m = 4.47$; $SD = 0.54$).

Table 1: Pretest: Means in each experimental condition

condition	n	Extent of qualification in hiring	competence	ego-oriented soft skills	Team-oriented soft skills
Without Quota	18	7.63	4.67	4.46	4.62
Opportunity Enhancement	14	6.44	4.75	4.23	4.47
Tie Break	18	7.54	4.86	4.44	4.51
Strong Preferential Selection	17	6.46	5.21	4.46	4.80

In sum, hypotheses 1a and 1b could not be confirmed. Although association with quotas does seem to exhibit influence on the evaluation of beneficiaries, its direction does not follow the predicted pattern.

Testing moderators of stigmatization

Having revealed this obscure overall effect of reverse stigmatization, further tests to investigate predictors and moderating variables on stigmatization – also if it may be reversed – were run. To scrutinize influence of moderator variables on stigmatization systematically, several MANOVAS were conducted including only one – or in some cases two – of the moderating variables as second (and third) independent variables. To capture moderating effects, two-way interactions between the experimental condition and each assumed predictor of stigmatization were modeled in. Moderating variables were included as independent variables in multivariate analyses of variance because interaction effects were of special interest. Each independent variable consisted of two to three subgroups that participants were assigned to according to their response. Cut-off points between two subgroups of an independent variable were the medians; thus, for the independent variable knowledge, for example, two subgroups were formed as following: the approximately 50% participants with lowest knowledge were assigned to a low knowledge group, whereas approximately 50% of participants with best knowledge were assigned to a high knowledge group. Note that in this procedure knowledge about quotas is defined in relation to the specific sample tested, and not by some external criteria. For two independent variables – namely perceived fairness of

quotas and denial of discrimination against women – it was not possible to use this procedure since a majority of participants had median scores; thus, three subgroups were formed using cut-off points at approximately 33% and 66%: for example, the third of participants that experience quotas as most unfair were assigned to a low perceived fairness group, and approximately one third that perceived quotas as fairest were assigned to a high perceived fairness group; approximately one third of participants who indicated median perception of fairness was assigned to a moderate perceived fairness group.

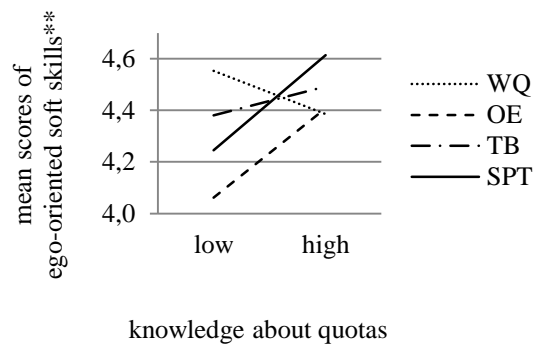


Figure 1: Interaction effect between affirmative action plan* and knowledge on evaluation of ego-oriented soft skills (not statistically significant).

* WQ = Without Quota, OE = Opportunity Enhancement, TB = Tie Break, SPT = Strong Preferential Treatment

** scale ranging from 1 to 6

Hypothesis 2: Knowledge about quotas

Unsurprisingly knowledge about quotas at the Medical University of Vienna is low in psychology undergraduate students ($m = 1.96$; $SD = 1.61$). Participants scoring 2 and higher (out of 6 points in total) are assigned to the high knowledge group ($n = 36$); while participants who received 0 or 1 point build the low knowledge group ($n = 31$). The conducted multivariate analysis of variance shows no significant effect of knowledge on evaluation of the female applicant, indicating that knowledge does not exhibit an influence on stigmatization – at least not in this population. Although no statistically significant effect of neither knowledge, ($F(4.56) = 0.34$, $p = 0.85$, $\eta^2 = 0.02$), nor the interaction of experimental condition and knowledge ($F(4.58) = 1.89$, $p = 0.12$, $\eta^2 = 0.12$) is found, inspection of the interaction graphs reveals some interesting results. Competence and soft skills are in all conditions rated more favorable if knowledge about quotas is high – except for Without Quota, in which female applicants are evaluated less favorable by participants in the high knowledge group than in the low knowledge group (figure 1). In summary, predictions about the influence of knowledge cannot be confirmed since effects are not statistically significant, but – as displayed by figure 1 – they point in the predicted direction.

Hypothesis 3: Attitude toward quotas

One purpose of the pretest was to develop a questionnaire for attitude toward quotas. Following Bell and colleagues (2000) participants answered open questions concerning advantages and disadvantages of quotas. Content analysis (Mayring, 2008) was used to categorize participants' answers. If at least four participants named an advantage or disadvantage, it was considered worth for further investigation. Most frequently participants regard better job opportunities for women as advantage of quotas (n = 39), second most decrease of discrimination against women (n = 18), and pursuit of gender equality (n = 18) are named. Table 2 lists the six named advantages in order of their frequency. In sum, participants stated a quite good variety of advantages of quotas. On the other hand, opinion on disadvantages seems to be more homogenous: participants name only three disadvantages, but these are mentioned frequently. Most often hiring of unqualified women is stated (n = 39), followed by discrimination against men (n = 34). In accordance with ongoing debates (see chapter 1) stigmatization of women due to quotas is also regarded as disadvantage (n = 17) (table 2).

Table 2: Advantages and disadvantages of quotas (N = 67)

Advantages	total frequency	relative frequency (%)
1. gives better job opportunities for women	39	58.21
2. reduces discrimination against women	18	26.87
3. enhances gender equality	18	26.87
4. increases women's representation (especially in high positions)	10	14.93
5. enhances innovation and diversity	4	5.97
6. encourages women to apply for certain jobs	4	5.97
Disadvantages		
1. causes hiring of less qualified women	39	58.21
2. discriminates against males	34	50.75
3. leads to stigmatization of women	17	25.37

Hypotheses 4: Justification strategies

In general participants agree rather to justification referring to increase of women's representation ($m = 8.81$, $SD = 1.89$) than to justification with present or past discrimination ($m = 5.66$, $SD = 2.89$). Participants scoring 4 and lower (out of 12 points in total) form the low ($n = 29$), and those scoring 5 and above the high representation-based justification group ($n = 38$). Cut-off point for low discrimination-based justification is 6 ($n = 37$); participants scoring 7 and higher are assigned to the high discrimination-based group ($n = 30$). Multivariate analysis of variance shows no

significant main effects of justification with discrimination ($F(4,51) = 0.11$, $p = 0.98$, $\eta^2 = 0.01$), and justification with underrepresentation ($F(4,51) = 1.61$, $p = 0.19$, $\eta^2 = 0.11$), nor are the interactions between experimental condition and justification with discrimination ($F(4,53) = 0.87$, $p = 0.50$, $\eta^2 = 0.06$), and those between the two justification strategies significant ($F(4,51) = 1.23$, $p = 0.28$, $\eta^2 = 0.09$). Thus, both justification strategies, as well as the interaction between them, and the interaction of experimental condition and justification with discrimination don't seem to influence evaluation of female applicants. Solely the interaction of experimental condition and justification with underrepresentation exhibits a significant effect on (reverse) stigmatization, $F(4,53) = 3.49$, $p < 0.05$, $\eta^2 = 0.21$. Looking at interaction graphs influence of interaction between experimental condition and justification with increase in representation seems unsystematic. For example, evaluation of the female applicant's competence is in all experimental conditions higher if participants tend to consent to justification strategies that refer to the increase of women's representation. Ratings of the female applicant's ego-oriented soft skills are more favorable if consent to justification with increase of representation is high in all experimental conditions, but for Tie Break. In Tie Break evaluation of the applicant's ego-oriented soft skills drop, if consent to justification with increased representation is high rather than low (figure 2). All in all, hypotheses on influence of justification strategies are not confirmed in regard of justification with

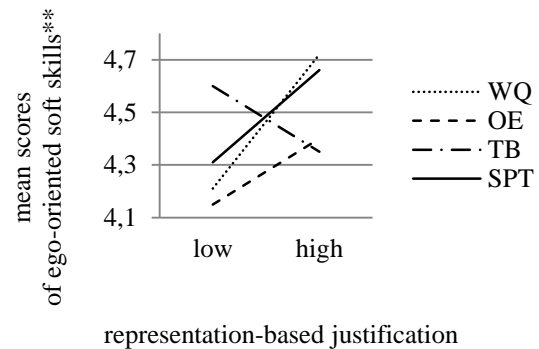


Figure 2: Interaction effect between representation based justification and affirmative action plan* on ego-oriented soft skills.

* WQ = Without Quota, OE = Opportunity Enhancement, TB = Tie Break, SPT = Strong Preferential Treatment

** scale ranging from 1 to 6

discrimination: according to the predictions justification with past or current discrimination should mitigate negative stigmatization. But discrimination-related justification strategies do not exhibit statistically significant influence at all. Justification strategies which refer to the increase of women’s representation on the other hand were predicted to influence quota beneficiaries in a negative way. This negative influence occurred for some variables – as for ego- and team-oriented soft skills. For competence the predicted effect is reversed in all conditions. Thus, a reasonable pattern can hardly be found in the findings of representation-related justification strategies. Assumptions about justification strategies cannot be confirmed.

Hypothesis 5: Perceived fairness of quotas

Student participants perceive fairness of quotas as moderate ($m = 3.85, SD = 1.35$). Participants who indicate fairness of quotas on a level of 3 and lower (on a 7-pointed scale) are assigned to the low perceived fairness group ($n = 18$); those scoring 4 build the moderate ($n = 29$), and those scoring 5 and above the high perceived fairness group ($n = 20$). Multivariate analysis of variance shows a significant main effect of fairness ($F(4,53) = 3.00, p < 0.05, \eta^2 = 0.19$), and a significant interaction effect of fairness and experimental condition ($F(6,55) = 3.19, p < 0.01, \eta^2 = 0.23$) on the four dependent measures. Independently of

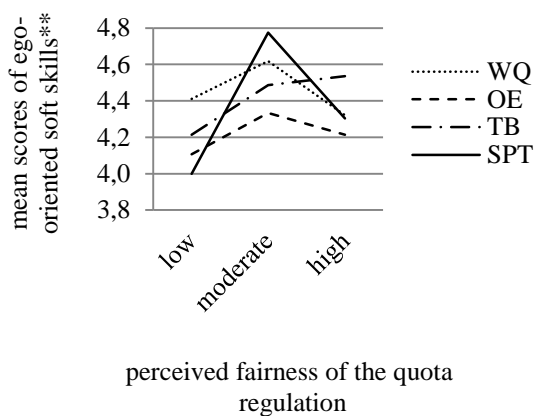


Figure 3: Interaction between affirmative action plan* and perceived fairness on ego-oriented soft skills
 * WQ = Without Quota, OE = Opportunity Enhancement, TB = Tie Break, SPT = Strong Preferential Treatment
 ** scale ranging from 1 to 6

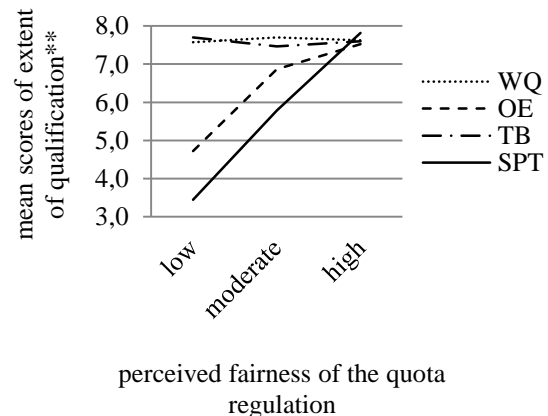


Figure 4: Interaction between affirmative action plan* and perceived fairness on extent of qualification in hiring.
 * WQ = Without Quota, OE = Opportunity Enhancement, TB = Tie Break, SPT = Strong Preferential Treatment
 ** scale ranging from 0 to 10

perceived fairness of quotas, evaluations of extent of qualification in hiring are similar high in Without Quota and in Tie Break. In Opportunity Enhancement and in Strong Preferential Treatment ratings of extent of qualification in hiring are lower if fairness of quotas is perceived low or moderate; whereas in these conditions rating of extent of qualification reach the same high level as in Without Quota and Tie Break if perceived fairness is high (figure 3). Effects on competence, on ego-oriented soft skills, and on team-oriented soft skills reveal an interesting pattern: Ratings tend to be highest if perceived fairness is moderate. This relationship is especially pronounced in Strong Preferential Treatment (figure 4).

Thus, predictions regarding fairness are partly confirmed in that low levels of perceived fairness of quotas are associated with negative evaluations of the female applicant. Found patterns of most favorable evaluations under moderate perception of fairness contradict the stated predictions.

Hypothesis 6: Perception of discrimination against women

Generally, denial of discrimination is moderate in the student sample ($m = 2.93$, $SD = 0.80$). Cut-off point for low denial of discrimination was 2.40 ($n = 22$); participants who indicated 2.41 to 3.30 points are assigned to the moderate ($n = 24$), and those scoring higher than 3.30

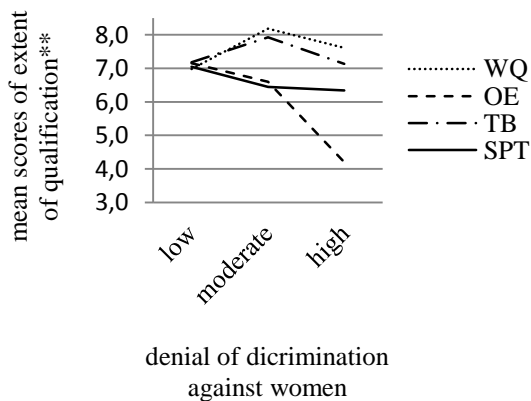


Figure 5: Interaction effect between affirmative action plan* and perception of discrimination on extent of qualification in hiring.

* WQ = Without Quota, OE = Opportunity Enhancement, TB = Tie Break, SPT = Strong Preferential Treatment

** scale ranging from 0 to 10

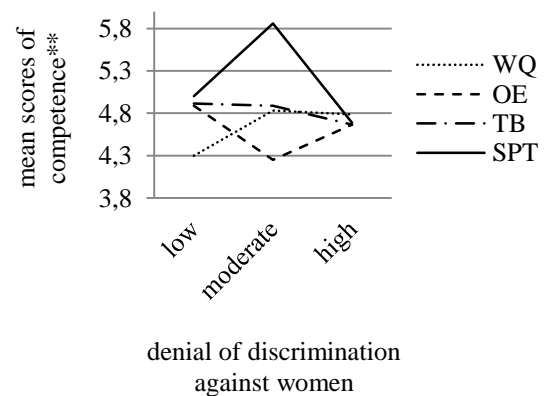


Figure 6: Interaction effect between affirmative action plan* and perception of discrimination on competence.

* WQ = Without Quota, OE = Opportunity Enhancement, TB = Tie Break, SPT = Strong Preferential Treatment

** scale ranging from 1 to 6

to the high denial of discrimination group ($n = 21$). The multivariate analysis of variance reveals a significant interaction effect of experimental condition and perceived discrimination, $F(6,55) = 2.68, p < 0.05, \eta^2 = 0.23$. In all conditions ratings of extent of qualification in hiring are about the same if denial of discrimination is low, that is, if participants perceive discrimination against women to some degree. Increasing denial of discrimination is correlated with lower ratings of extent of qualification in hiring in Opportunity Enhancement and in Strong Preferential Treatment, albeit the drop is more pronounced in Opportunity Enhancement. In Without Quota and in Tie Break ratings of extent of qualification stay on a high level, although denial of discrimination rises (figure 5). Interaction effects of perception of discrimination and experimental condition on competence, ego- and team-oriented soft skills reveal the same interesting pattern as could be observed with perception of fairness: in Strong Preferential Treatment evaluations of competence and ego-oriented soft skills are most favorable if denial of discrimination is moderate (figure 6).

All in all, predictions about denial of discrimination are only partly confirmed. The negative influence of denial of discrimination against women on rated extent of qualification is at least for Opportunity Enhancement and for Strong Preferential Condition in line with the stated hypotheses; but patterns of most favorable ratings under moderate denial of discrimination contradict the stated predictions.

Hypothesis 7: Gender

In general female participants tend to evaluate the female applicant better than male participants (table 3). However, the influence of gender is not statistically significant in the conducted multivariate analysis of variance, $F(4,56) = 0.92$, $p = 0.46$, $\eta^2 = 0.06$; nor is the interaction effect between experimental condition and participants' gender significant, $F(4,58) = 0.68$, $p = 0.61$, $\eta^2 = 0.05$.

Table 3: means scores for ratings of males and females

	males		females	
	<i>m</i>	<i>SD</i>	<i>m</i>	<i>SD</i>
extent of qualification in hiring	6.61	2.52	7.18	1.75
competence	4.63	0.90	5.95	0.83
ego-oriented soft skills	4.14	0.46	4.48	0.61
team-oriented soft skills	4.49	0.72	4.60	0.69

Hypothesis 8: Social dominance orientation

In average, students show low to moderate levels of *social dominance orientation (SDO)* ($m = 2.42$, $SD = 0.99$). Cut-off point for low SDO is 2.25 ($n = 35$), participants with SDO higher than that are assigned to the high SDO group ($n = 32$). The main effect of social dominance orientation on the four dependent measures is not significant, $F(4,51) = 0.75$, $p = 0.57$, $\eta^2 = 0.56$). But again, the interaction of experimental condition and SDO shows a significant effect, $F(4,53) = 4.67$, $p < 0.01$, $\eta^2 = 0.26$. In Opportunity Enhancement and in Strong Preferential Treatment evaluations of competence are higher if SDO in participants is high (figure 7). Although moderating effects of gender are not statistically significant, it is worth to look at the following trend– ratings of competence increase in women who exhibit high SDO, whereas they remain unchanged in men high in SDO. Thus, different from the predictions, males high in social dominance orientation do not engage in negative stigmatization of quota beneficiaries, but females high in social dominance orientation seem to be inclined to positive stigmatization of quota beneficiaries (figure 8). This conclusion should be met carefully since interaction effects are not statistically significant, but the notion that women high in social dominance orientation could be the key to reverse stigmatization seems interesting. Still, predictions concerning SDO are not supported.

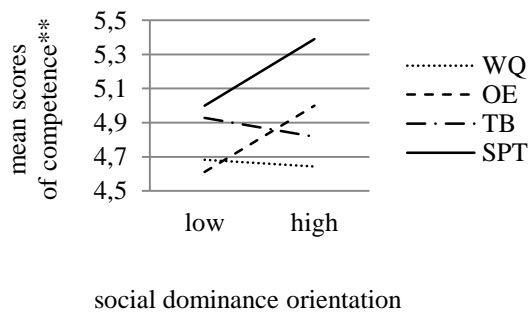


Figure 7: Interaction effect between of social dominance orientation and affirmative action plan* on competence.

* WQ = Without Quota, OE = Opportunity Enhancement, TB = Tie Break, SPT = Strong Preferential Treatment

** scale ranging from 1 to 6

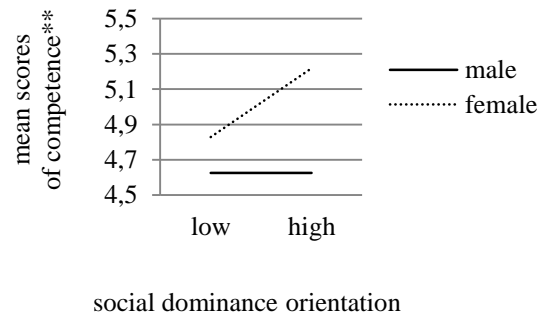


Figure 8: Interaction effect between social dominance orientation and gender on competence.

* WQ = Without Quota, OE = Opportunity Enhancement, TB = Tie Break, SPT = Strong Preferential Treatment

** scale ranging from 1 to 6

Hypothesis 9: Competition Pressure

In general, participants indicated moderate levels of experienced competition pressure ($m = 4.37$, $SD = 1.80$). Cut-off point for high competition pressure is 5 (on a 7-pointed scale); thus, participants indicating levels of competition pressure of 5 and higher are assigned to the high competition pressure group ($n = 40$); whereas participants who scored lower than 5 are assigned to the low competition pressure group ($n = 27$). In the conducted multivariate analysis of variance competition pressure does not exhibit a significant main effect on evaluation of the female applicant, $F(4,51) = 0.47$, $p = 0.76$, $\eta^2 = 0.04$. However, the interaction effect between experimental condition and competition pressure is significant, $F(4,53) = 3.53$, $p < 0.05$, $\eta^2 = 0.21$. Figure 9 shows that in Without Quota and the Opportunity Enhancement team-oriented soft skills are rated better, if high competition pressure is experienced; whereas in Tie Break and Strong Preferential Treatment ratings on those skills are less favorable if perceived competition pressure is high. The drop is especially pronounced in Strong Preferential Treatment. In Strong Preferential Treatment female applicants also score lower on extent of qualification in hiring, competence, and ego-oriented soft skills, if raters indicate high levels of competition pressure in their work environment, see for example figure 9. These findings support the hypothesis that perception of competition pressure influences evaluation of quota regulation beneficiaries negatively. Looking at effects

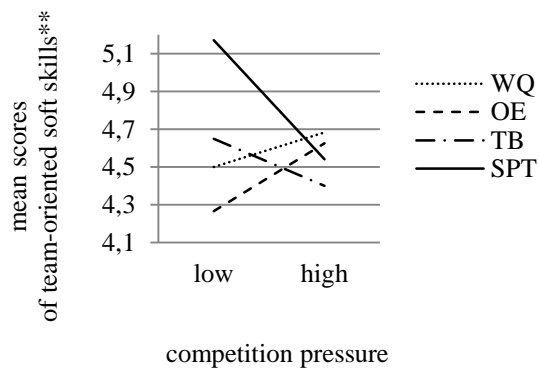


Figure 9: Interaction effect of competition pressure and affirmative action plan* on team-oriented soft skills.

* WQ = Without Quota, OE = Opportunity Enhancement, TB = Tie Break, SPT = Strong Preferential Treatment

** scale ranging from 1 to 6

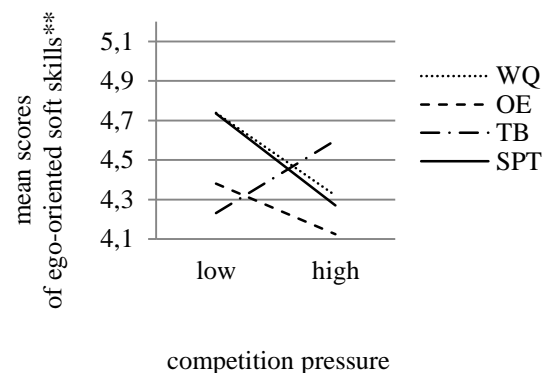


Figure 10: Interaction effect of competition pressure and affirmative action plan* on ego-oriented soft skills.

* WQ = Without Quota, OE = Opportunity Enhancement, TB = Tie Break, SPT = Strong Preferential Treatment

** scale ranging from 1 to 6

on evaluations of the female applicant in the second quota regulation related condition (Tie Break), effects are less clear. If perceived competition pressure is high, ratings for the female applicant's team-oriented soft skills drop, but ratings of competence and ratings on ego-oriented soft skills are higher if high levels of competition pressure are reported (figure 10). Moderating effects of gender are not significant: $F(4,51) = 0.88$, $p = 0.48$, $\eta^2 = 0.07$; this indicates that evaluation of the female applicant is not influenced by rater's gender. Thus, competition pressure does seem to exhibit influence on the evaluation of women who benefit from strong preferential treatment, but differently than assumed these effect is not gender-specific. Predictions concerning competition pressure, hence, are not confirmed.

Summarizing results of the pretest

In sum, applied affirmative action plan does exhibit significant influence on evaluation of beneficiaries, but directions of the effects do not match the predicted assumptions. Quota beneficiaries do not seem to face a stigma of incompetence; they rather are evaluated more favorable. Thus, hypothesis 1 could not be confirmed. Effects of knowledge point in the predicted directions but are not statistically significant, thus hypothesis 2 is not supported by the present results. Hypothesis 3 concerning the influence of attitude toward quotas could not be tested yet due to a lack of instrument. Based on results of the pretest, a questionnaire on quota regulation attitude was developed for use in the main study. The influence of justification strategies seems to be rather disorganized; hence hypothesis 4 is not supported. Hypothesis 5 on perception of fairness of quotas and hypothesis 6 concerning denial of discrimination against women are confirmed partly by the present findings. The rater's gender does not exhibit a significant influence on stigmatization, thus hypothesis 7 is not confirmed. Effects of social dominance orientation do not occur as predicted, thus findings do not support hypothesis 8. Competition pressure alters the evaluation of quota beneficiaries, but other as predicted the effects are not gender specific. Hence, hypothesis 9 is not confirmed.

In the following section the results of the pretest are discussed, so are their implications for the main study.

4.1.7 Discussion

A multivariate analysis of variance on the four dependent variables *extent of qualification in hiring, competence, ego-oriented soft skills, and team-oriented soft skills* was conducted to reveal if different affirmative action plans, including quota regulation, have stigmatizing effects on beneficiaries. A variety of presumed moderator variables was introduced in the study to examine factors that strengthen effects of stigmatization, and factors that mitigate it.

Effects of reversed stigmatization

Results suggest that evaluation of women indeed differs in dependence on the affirmative action plan they are associated with. But contrary to the predictions, women associated with harsher forms of affirmative action like quotas at the Medical University of Vienna are not rated more negatively in terms of their competence and their soft skills. The opposite occurred: women who were associated with strong preferential treatment are rated more favorable compared to those that were not associated with affirmative action at all, and compared to women that were associated with weaker forms of affirmative action like opportunity enhancement and weak preferential treatment. Interestingly, evaluation of competence and soft skills also is better if extent to which qualification was considered in hiring is rated low – as it is the case in Strong Preferential Treatment. All in all, some sort of *reverse stigmatization* must have occurred.

Moderating effects

Most factors that were presumed to moderate stigmatizing effects do not exhibit main effects on evaluation of the applicant, but they affect evaluation in interaction with the affirmative action plan women were associated with. Thus, their influence varies in different affirmative action plans.

Knowledge about quotas

No statistically significant effect on evaluation of the female applicant was found for participants' knowledge. Yet, interaction graphs show interesting trends: Rating of competence, ego-related soft skills, and team-oriented soft skills increase if knowledge about quotas is high – in all conditions but for Without Quota. A possible explanation for this counterintuitive event is that study participants who know more about quotas are aware of the

fact that all Austrian universities have applied quotas. Not mentioning quotas in the employment ad could have led to feelings of deception, which in turn could have prompted more negative reactions toward presumed beneficiaries. Again, such interpretation should be made cautiously since after all, effects of knowledge are not statistically significant.

Gender

Another factor that was not statistically significant in the present study is gender. Although a tendency that women make more favorable evaluations of the female applicant than men in all affirmative action conditions is observable, effects of gender are not statistically significant.

Justification strategies

Justifying quotas with present or past discrimination also did not prove statistically significant in the present study. But justification with increase of women's representation did influence evaluation of beneficiaries in interaction with affirmative action plan. Predictions stated that justification with increase of representation would result in more negative evaluations of affirmative action beneficiaries. These predictions could be confirmed partly: in Opportunity Enhancement and in Tie Break ratings of extent of qualification in hiring, and ratings of soft skills (ego- and team-oriented) are less favorable if consent to representation related arguments is high. On the other hand, these effects are reversed for ratings of competence; in all conditions applicants receive higher scores for their competence if study participants consent to the representation based justification strategy.

Perceived fairness of quotas

Perceived fairness of quotas is the only factor that exhibits a significant main effect on evaluation of the female applicant. In general, evaluations of the female applicant are more favorable if quotas are perceived as fair. Ratings of extent of qualification in hiring are for example in all conditions similar high if participants think that quotas are fair. However, interaction between affirmative action plan and fairness also is significant, and shows some interesting findings that are only partly consistent with the stated predictions. Paradoxically, moderate levels of perceived fairness are associated with most favorable evaluations of women. High levels of perceived fairness result in equally negative evaluations as low levels of perceived fairness. This effect is especially pronounced for Strong Preferential Treatment.

A possible explanation could be that participants who report to experience quotas as very fair chose their answer rather for reasons of political correctness than due to true conviction.

Perception of discrimination against women

Similar patterns as for perceived fairness are found for perception of discrimination. Extent to which qualification was taken into account in the applicant's hiring is rated similar high under all affirmative action conditions if denial of discrimination against women is low. However, evaluations of the applicant's competence and soft skills are more favorable if denial of discrimination is moderate. Again, the attempt of some participants to be political correct could be responsible for their low scores on denial of discrimination, but political correctness does not necessarily reflect in evaluations of affirmative action beneficiaries.

Social dominance orientation

For social dominance orientation it was predicted that especially men who are highly social dominant would engage in negative stigmatization of quota beneficiaries. *Negative* stigmatization was not found, but social dominance orientation seems to play an interesting role in the occurrence of reversed stigmatization. In Opportunity Enhancement and in Strong Preferential Treatment study participants rate applicants more favorable if they have high levels of social dominance. Interestingly, this seems to be the case only for women; although moderating effects of gender are not statistically significant it seems noteworthy that highly social dominant women could be a key to explain the occurrence of reversed stigmatization of quota beneficiaries.

Perceived competition pressure

Influence of perceived competition pressure proves significant in interaction with affirmative action plan; high levels of perceived competition pressure result in less favorable evaluations of quota regulation beneficiaries. But based on the group dominance perspective, it was predicted that negative evaluation of quota beneficiaries only occurs for males. However, gender does not affect ratings of women who benefit from quotas. Hence, predictions are not confirmed. In general effects of competition pressure seem quite unsystematic – an event that could be caused by the study sample itself. The sample consisted of undergraduate psychology students that will probably never compete for a job as it was described in the employment ad of the study. The test situation might have not referred enough to their own

study experience. Therefore, the unsystematic effects of competition pressure should not be over-interpreted.

Attitude toward quotas

Last but not least, it may not be forgotten that influence of attitude toward quotas could not have been tested yet due to lack of instrument. The pretest was conducted with the purpose to create a useful questionnaire to measure attitude toward quotas in the main study. Yet, the pretest has to do without effects of attitude that might have helped to enlighten the one or other result.

Specific characteristics of the sample

The tested sample had two striking characteristics: it consisted mostly of females, and the average age was quite young. Since influence of gender did not prove statistically significant, young age of study participants could be one cause for the odd findings of reversed stigmatization. Possibly, younger individuals who grew up with affirmative action find those measures more natural. So far, results about age as possible influencer of stigmatization do not appear in the body of literature concerning affirmative action; thus, hypotheses about age as predictor cannot be derived. But the main study should at least control for participants' age.

Limitations

Many – maybe most – studies concerning affirmative action have used undergraduate psychology students as participants. So results of this pretest may actually be comparable to those of past studies, and should not be waved aside too quickly. Yet, the present study shares a deficiency of many studies on affirmative action: the relevance of the examined subject for the examined sample is not clear. Students are usually not immediate targets of affirmative action that seek to help women to rise in higher academic job position. Quotas surely do not bear the same relevance for students as for academic faculty whose next career steps might be affected by quotas – may it be as potential beneficiaries or not.

Anyhow, findings should be considered cautiously. As mentioned before, the study is actually designed for young scientists in Medicine; thus study design might be ill-fitted for undergraduate psychology students. Furthermore, the sample is a) very small and b) very homogenous in terms of gender (women are over-represented) and age – most participants are

aged 20 to 25. Hence, the sample is little representative, and might not be comparable with the intended sample of young scientists. Results in the latter sample could be quite different.

Another reason why results should be interpreted cautiously is that the test phase was shaded by a political event concerning quotas at the Medical University of Vienna that actually affected students. Shortly after testing started, the Medical University of Vienna announced the introduction of new quotas. To establish a fifty-fifty ratio between female and male medicine students, intake test scores were decided to be analyzed separately for each gender – a measure that is meant to benefit female students who used to be less successful in the intake test. This announcement led to a new medial debate about quotas and preferential treatment of women (see for example Winkler-Hermaden, 2012). Eleven study participants had to be excluded because their remarks on attitude toward quotas showed clear signs that they confounded these events with the current study. Yet, participants' answers in general might have been influenced by this revived debate although it did not clearly show in their responses. Possibly, reactions by young females in the current sample were driven by some form of defiance or reactance toward the stigma of incompetence that was transported by newspapers, and this defiance might have led to effects of reversed stigmatization of quota beneficiaries. However, influence of this renewed debate was apparent, but its nature remains unclear.

Additionally, sequence of the fictive application material, and wording of the experimental manipulation could have contributed to the queer findings of reversed stigmatization. Placing the description of the fictive applicant prior to the employment ad could have caused the impression that the applicant was not yet hired for the job. It is unlikely, but study participants could have evaluated the female applicant in terms of characteristics they thought she *should* have, instead of ascribing attributes to her.

Moreover, wording of the experimental condition was maybe not chosen carefully enough. Both Weak Preferential and Strong Preferential Treatment included the phrase “if equally qualified”, which could have served as hint for qualification. Since information about the fictive applicant in general was scarce, this hint could have exhibited disproportional influence on qualification and competence ratings in these conditions. Evans (2003) found that association with quotas can result in reversed stigmatization of female beneficiaries if equal qualification is given.

Taken together the – in some aspects – queer findings of the pretest should not be put aside too hastily, since they represent an interesting contrast to results on affirmative action and quotas, which have been found to this day. If these findings can be repeated, they might inspire further research on psychological mechanisms involved in perception of affirmative action beneficiaries that have not been attended to yet. But the pretest has some shortcomings in terms of method that have to be corrected for the main study, and on the other hand, it unfortunately coincided with a political event concerning exactly its matter examined. Therefore, results should neither be over-interpreted. On basis of the pretest it would be unwise to resign from the originally stated predictions; rather it should be sought to correct for the possible biases and test predictions in another sample.

Implications for the main study

To correct for potential misinterpretations about application status of the fictive candidate, the sequence of presenting application material should be altered slightly in the main study: participants should first receive the employment ad and afterward, the fictive applicant is to be introduced by presenting her as the one who has already been hired. Furthermore, influence of wording should be controlled by introducing a new condition that does not give any hint to qualification by phrases like “if equally qualified” – such as a super strong preferential treatment condition. Consequently, hypothesis 1b has to be adapted according to this new condition:

Hypothesis 1b

The extent to which gender is considered in an affirmative action plan moderates stigmatizing effects against its beneficiaries. Women not associated with affirmative action at all should not be victims of stigmatization. Weak forms of affirmative action, as Opportunity Enhancement should result to mild forms of stigmatization against its beneficiaries; Strong Preferential Treatment (including quotas) that hints to equal qualification as precondition for the preferential selection should lead to more severe stigmatization of women. But the most acute stigmatization should occur for women associated with quotas if no equal qualification is set as precondition for preferential treatment (Super Strong Preferential Treatment; SSPT). Hence, strength of stigmatization is organized as the following: $WQ < OE < SPT < SSPT$. Chart 4 depicts the adaptations, which have been made to hypothesis 1b. Again, different arrow weights indicate the specific impact a measure should have on negative stigmatization.

Women not associated with quotas at all should not suffer from a stigma of incompetence; hence influence of Without Quota is crossed out.

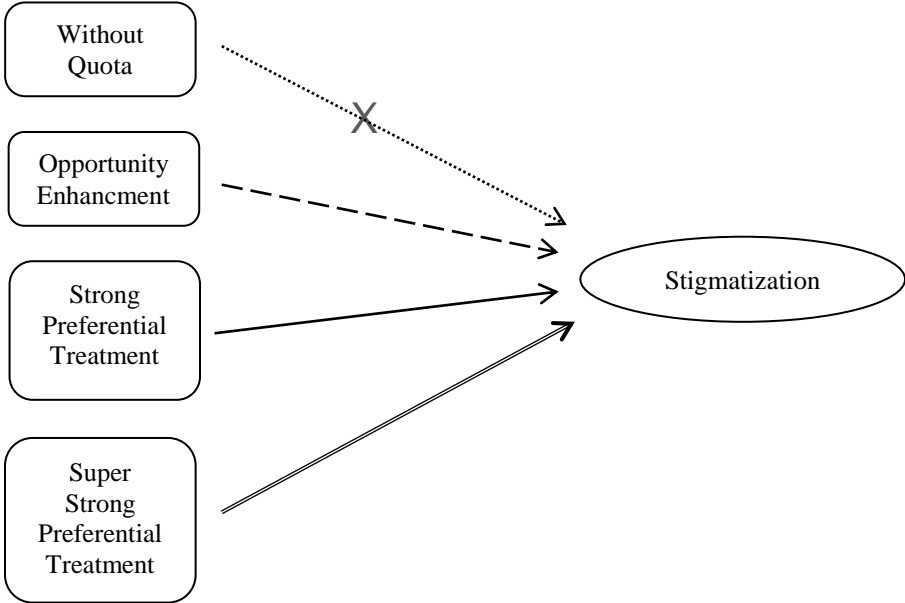


Chart 4: Type of application plan influencing stigmatization of women associated with it (Hypothesis 1b). Again, women not associated with quotas should not be target of stigmatization; Opportunity Enhancement is expected to induce such to a minor degree; whereas Strong Preferential Treatment is assumed to result in severe stigmatization. If equal qualification is not precondition of preferential treatment (Super Strong Preferential Treatment), most severe stigmatization should occur.

4.2 Main study: Testing stigmatization due to quotas

The main study was conducted identically to the pretest. The same fictive candidate was introduced as new hire at the Medical University of Vienna – this time, to a sample of young scientists at the Medical University of Vienna. To emphasize that she is already hired, slight alterations to the study's sequence were made (compare 4.1.2 and 4.2.2). Again, the fictive female applicant was associated with different affirmative plan including quotas using vignettes that were included in fictive employment ads of the Medical University of Vienna. Most important goal of the main study was to test the hypotheses on a “real world”-sample of young employees at the Medical University of Vienna.

4.2.1 Subjects

2129 employees of the Medical University of Vienna that were categorized as junior scientists were approached. Junior scientists were chosen as subjects, since they are in a state of career that could be affected by affirmative action like quotas. Female young scientists might come into the position of benefitting from quotas, whereas males have to compete with young ambitious females that are targeted by quotas. Subjects were contacted via E-Mail that included the link to the questionnaire, and a password to access it. Thus, participation was completely voluntary. 238 employees started the study by answering the questionnaire; 26 (~11%) of those who started did not complete the questionnaire; hence, drop-out rate is rather low. Three participants had to be excluded from the study due to too much missing data. Thus, the final sample consisted of 209 young scientists –a response rate of 10% – and was composited as the following: 26% of respondents or 55 in number were PhD students; out of a total number of 651¹³ (~31% of the target population); 44% of the respondents or 91 in number were residents (total n = 717; ~34% of the population); and 30% or 62 post doc employees responded (total n = 761; ~36% of the population); hence PhD students and post hoc employees are slightly underrepresented in the final sample, whereas residents are clearly overrepresented. One participant did not indicate his/her position. 118 (56%) of respondents were females, and 91 males (43%). Most participants were aged from 26 to 30 (n = 59; 28%), 31 – 35 (n = 71; 34%), 36 – 40 (n = 37; 18%), or 41 – 45 (n = 17; 8%); only 13 were younger than 26 (6%), and 12 were older than 46 (6%).

¹³ The number of PhD students, residents, and post doc employees is estimated based on statistics from 2011 (Department of Gender Mainstreaming at the Medical University Vienna, 2011).

Respondents were randomly assigned to one of four experimental conditions: 43 completed Without Quota, 57 Opportunity Enhancement, 63 took part in Strong Preferential Treatment, and 46 in Super Strong Preferential Treatment.

4.2.2 Procedure

Again, subjects were told that they were taking part in a study on evaluation of hiring decisions of the Medical University of Vienna. The sequence of the main study was slightly different to the pretest: to make clear that the applicant to evaluate has already been hired, participants first read the same job ad that was used in the pretest, and then they received a short description of the applicant that they were asked to evaluate subsequently. After that, the same questionnaire – but for attitude – was applied to assess variables that are associated with stigmatization of quota regulation beneficiaries.

4.2.3 Experimental manipulation

As in the pretest, the experimental manipulation was transported in an employment ad. The ad did not differ from the one used in the pretest. But the experimental manipulation was altered: Without Quota, Opportunity Enhancement, and Strong Preferential Treatment remained unchanged; the wording “if equally qualified” might have had an influence on reversed stigmatization effects in the pretest (Evans, 2003), since it hints to the qualification of the evaluated applicant. Thus, in the main study a super strong preferential treatment condition was introduced that avoids any reference to the applicant’s qualification: “The Medical University of Vienna seeks to increase the proportion of women, especially in leadership positions, and among scientific personnel. Therefore women are expressly invited for application. Women are preferentially hired until a quota of 40% is established”. Weak Preferential Treatment was dropped in the main study.

In the following, the experimental manipulations of the main study are summarized:

1. *Without Quota*: no statement concerning the application of affirmative action was offered at the end of the employment ad. Thus, applicants were not associated with quotas or any other affirmative action plan.
2. *Opportunity Enhancement*: the following statement that aims to encourage women to apply for the position in question was added to the employment ad: “*The Medical*

University of Vienna seeks to increase the proportion of women, especially in leadership positions, and among scientific personnel. Therefore qualified women are expressly invited for application.”

3. *Strong Preferential Treatment*: the statement at the end of the ad was expanded by the actual quota regulation as it is written down in the Women Advancement Plan of the Medical University of Vienna, including the sensitive quota term: “*The Medical University of Vienna seeks to increase the proportion of women, especially in leadership positions, and among scientific personnel. Therefore qualified women are expressly invited for application. If equally qualified, women are preferentially hired until a quota of 40% is established*”.
4. *Super Strong Preferential Treatment*: the same statement as in Strong Preferential Treatment was applied, but any references to the applicant’s qualification were spared: “*The Medical University of Vienna seeks to increase the proportion of women, especially in leadership positions, and among scientific personnel. Therefore women are expressly invited for application. Women are preferentially hired until a quota of 40% is established*”.

4.2.4 Dependent measures

Dependent measures were the same as in the pretest; in general following Heilman (1992) and Resendez (2002).

Competence: As in the pretest, participants were asked the following: 1. *How competent do you expect the applicant will do this job?* 2. *How efficiently do you expect the applicant will do the job?* The two questions were combined in a scale to gather competence ($\alpha = 0.85$).

Ego-oriented soft skills: participants evaluated the applicant’s activity and potency based on the same bipolar adjectives that were used in the pretest. Activity and potency were again combined in a scale termed ego-oriented soft skills ($\alpha = 0.83$).

Team-oriented soft skills were measured using the same bipolar adjectives than in the pretest ($\alpha = 0.90$).

To ensure comparability between the several dependent measures they were again standardized by dividing each by the number of items used to measure it.

Extent of qualification was determined by asking participants to indicate to what degree the applicant was hired due to her qualification. Answers were to give in percentage (0 to 100%), and standardized by dividing each score by ten.

4.2.5 Predictors of stigmatization

Measures to assess the presumed predictors of stigmatization were gathered in the same sequence as in the pretest that again could not be altered, nor could participants move backwards in the questionnaire.

Competition pressure experienced by a subject was measured by a single question: “*Do you experience competition pressure in your working environment?*” Answers could be given on a scale ranging from 1 (*not at all*) to 7 (*very*).

Attitude toward affirmative action was assessed by using the advantages and disadvantages of quotas that were gathered in the pretest; they were each translated in a simple statement, for example “*Quota regulation helps to reduce discrimination against women.*”, or “*Quota regulation discriminates against men*”. In total, nine such statement-items were generated. Following Fishbein and Ajzen (1975), study participants were first asked to rate each item in terms of likelihood (“*In your opinion, how likely is each of the following events?*”) on a 6-point scale from 1 (*not at all likely*) to 6 (*very likely*); then participants had to evaluate each statement on a 6-point scale from -3 (*very negative*) to 3 (*very positive*). To get a single score for attitude toward quotas, likelihood and evaluation were multiplied; thus positive attitude toward quotas was attested if certain statements were evaluated both positive *and* likely, whereas negative attitude was characterized by evaluating statements as both negative *and* likely. The scale proved reliable on $\alpha = 0.88$.

Knowledge: Subsequently, participants were given three statements about quotas that had to be rated in terms of occurrence at the Medical University of Vienna: 1) “*The Medical University of Vienna invites qualified women for application*”, 2) “*The Medical University of Vienna favors women as applicants, even if they are less qualified*”, and 3) “*The Medical University of Vienna only favors women if they are equally qualified than the best male applicant*”. Answer possibilities were “*Yes*”, “*Rather yes*”, “*Rather no*”, “*No*”, and “*I don't know*”. Again, sequence of these statements could not be altered, nor could participants go back in the questionnaire.

Perception of Discrimination was again assessed by an adapted form of the Modern Sexism Scale (Swim et al., 1995; Eckes & Six-Materna, 1998) that measures denial of discrimination against women. Items 5, 6, and 7 were dropped, since they are not related to working situations. Germany as reference country was replaced by Austria. The final scale included items like “*Discrimination against women still is a problem in Austria*” or “*Nowadays women are treated fair in working life*” ($\alpha = 0.83$). Participants could indicate consent on a scale ranging from 1 (*not at all*) to 6 (*very*).

Fairness was measured using a single question: “*In your perception, how fair is the quota regulation at the Medical University of Vienna?*” Answers could be given on a 7-point-scale (1 = *very unfair*, to 7 = *very fair*).

Social dominance orientation (SDO) was assessed by the short version of Pratto et al.’s (1994) *Social Dominance Orientation Scale* that was translated into German. Statements like “*Social equality should be increased*” had to be evaluated on a scale from 1 (*very negative*) to 7 (*very positive*) ($\alpha = 0.83$).

Demographic Measures: Participants were asked to indicate their gender (male, female) and their professional position (PhD-student, post doc, resident). Respondents’ age was gathered in categories of five years: under 20, 21 to 25, 26 to 30, and so on to above 60. To make age groups as equal in size as possible, participants were clustered according to their age in four groups: one group included those under 30 ($n = 71$; 34%), those aged from 31 to 35 formed an extra group ($n = 71$; 34%), those from 36 to 40 were a third group ($n = 37$; 18%), and participants older than 40 were combined in a fourth group ($n = 29$; 14%).

Additional Measures: Participants were asked to evaluate the subject ophthalmology on a 7-point-scale (1 = *male*, 7 = *female*) to control for sex-stereotype of the offered job.

4.2.6 Results

Women associated with quotas were predicted to suffer from a stigma of incompetence. The occurrence of such was tested in the present study. A variety of factors that was assumed to moderate stigmatization were scrutinized.

Manipulation check: Job-related sex-stereotype

Ophthalmology was neither perceived as female nor male sex-stereotyped ($m = 3.68$; $SD = 0.96$). Hence, job-related sex-stereotypes can be eliminated as potential moderators for evaluation of the female applicant.

Hypothesis 1 (a & b)

As in the pretest, a multivariate analysis of variance was conducted on the four dependent measures *extent of qualification in hiring, competence, ego-oriented soft skills* and *team-oriented soft skills*. This time, the main effect of experimental condition was not significant, $F(4, 204) = 0.73$, $p = 0.57$, $\eta^2 = 0.01$. Thus, different affirmative action plans do not seem to influence evaluation of quota regulation beneficiaries (table 4).

Extent of qualification in hiring

Ratings for extent of qualification in hiring were predicted to be highest in Without Quota, lower in Opportunity Enhancement, again lower in Strong Preferential Treatment, and lowest in Super Strong Preferential Treatment ($WQ > OE > SPT > SSPT$). As in the pretest, a trend is observable that extent of qualification in hiring is rated lowest in Opportunity Enhancement ($m = 4.93$, $SD = 2.77$). Contrary to the stated hypothesis, the highest mean score of extent of qualification is found in Strong Preferential Treatment ($m = 5.33$, $SD = 2.76$). The mean score for Without Quota ($m = 5.28$, $SD = 2.48$) is somewhere in between. Noteworthy is, that extent of qualification in hiring is rated just slightly lower in Super Strong Preferential Treatment than in Without Quota ($m = 5.16$, $SD = 2.76$); consider that this condition was designed to be an even stronger form of quotas than Strong Preferential Treatment, and that no hint to the inclusion of qualification in the hiring decision was given! Remarkably is furthermore, that standard deviations are quite high, suggesting that participants gave rather heterogeneous ratings. Overall, mean scores do not differ considerably; thus, predictions regarding negative

stigmatization are not confirmed for evaluations of extent of qualification in hiring (see table 4).

Competence

Mean scores of competence ratings again show a trend to be lowest in Opportunity Enhancement ($m = 4.07$, $SD = 1.06$). Competence is evaluated most favorable in Without Quota ($m = 4.17$, $SD = 0.96$), second highest in Strong Preferential Treatment ($m = 4.15$, $SD = 0.95$), and third highest in Super Strong Preferential Treatment ($m = 4.11$, $SD = 1.10$). All in all, differences of competence ratings across the four affirmative action conditions are hardly noteworthy; thus, negative stigmatization in terms of competence clearly does not occur due to the quotas (table 4).

Ego-oriented soft skills

Ego-oriented soft skills are rated highest in Without Quota ($m = 4.28$, $SD = 0.68$), second highest in Opportunity Enhancement ($m = 4.18$, $SD = 0.58$), and third highest in Strong Preferential Treatment ($m = 4.15$, $SD = 0.81$). Although these differences are not statistically significant, to this point for once they follow at least in trend the predicted pattern; but weirdly enough, ratings of ego-oriented soft skills increase in Super Strong Preferential Treatment ($m = 4.26$, $SD = 0.77$) (table 4). But again, differences in ratings of ego-oriented soft skills are too small to be worth mentioning.

Team-oriented soft skills

Again, differences in ratings of team-oriented soft skills are not noteworthy; yet, the observable trend is interesting. Contrary to the predictions, team-oriented skills are evaluated less favorable in Without Quota ($m = 4.06$, $SD = 0.93$) and in Opportunity Enhancement ($m = 4.04$, $SD = 0.91$), than in Strong Preferential Treatment ($m = 4.21$, $SD = 0.89$) and in Super Strong Preferential Treatment ($m = 4.27$, $SD = 1.02$) (table 4).

Table 4: Main study: Means in each experimental condition

condition	n	extent of qualification in hiring	competence	ego-oriented soft skills	team-oriented soft skills
Without Quota	43	5.28	4.17	4.28	4.06
Opportunity Enhancement	57	4.93	4.07	4.18	4.04
Strong Preferential Selection	63	5.33	4.15	4.15	4.21
Super Strong Preferential Selection	46	5.16	4.11	4.26	4.27

All in all, mean scores of the four dependent variables differ so little across the experimental conditions that it is not surprising that the main effect of affirmative action plan is not statistically significant. Hypothesis 1a and 1b are not confirmed.

Testing moderators of stigmatization

Although the main effect of experimental condition did not prove significant, it was of interest if other presumed predictors would exhibit significant influence on the four dependent measures, and if experimental condition would affect the applicant's evaluation in interaction with other independent variables. Therefore, as in the pretest, multiple multivariate analyses of variance were conducted taking different predictors of stigmatization into account. Again, to look at moderating effects two-way interactions between experimental condition and each predictor were modeled in. Predictors of stigmatization were again treated as independent variables. Subgroups for each independent variable were built following the procedure of the pretest (see 4.6). Note that manifestations of independent variables are therefore defined in relation to the tested sample, rather than in reference to an ultimate criterion. If significant effects were found, post hoc ANOVA's were conducted to determine which of the dependent variable precisely is affected. This procedure was followed by calculating Pearson correlations to clarify the direction of the effect in question.

Hypothesis 2: Knowledge about quotas

In general, knowledge about quotas is moderate ($m = 2.74$, $SD = 1.66$) among young scientists at the Medical University of Vienna. Participants scoring 2 (out of 6) and lower are assigned to the low knowledge group ($n = 100$); whereas those gaining scores of 3 and more points build the high knowledge group ($n = 109$). The main effect of knowledge about quotas on the four dependent variables is on the edge of statistical significance, $F(4,198) = 5.04$, $p = 0.05$, $\eta^2 = 0.05$. Post hoc analyses of variance reveal that knowledge influences in particular evaluation of the female applicant's ego-oriented soft skills, $F(1,202) = 4.92$, $p < 0.05$, $\eta^2 = 0.02$. Furthermore, significant interaction between knowledge and affirmative action plan is found, $F(4,200) = 2.75$, $p < 0.05$, $\eta^2 = 0.05$. Hence, effects of knowledge seem to differ in dependence of affirmative action plans. In all conditions extent of qualification in hiring is rated slightly higher if knowledge about quotas is good, but in Super Strong Preferential Treatment extent of qualification is rated much higher if knowledge about quotas is high (figure 11). In Super Strong Preferential Condition *competence* of the female applicant is rated higher by participants with high knowledge about quotas, but effects do not seem as pronounced (as for extent of qualification). Here, differences between ratings of competence in the low and in the high knowledge groups are more severe in Strong Preferential Treatment (figure 12). Both high evaluations of extent of qualification in Super Strong Preferential

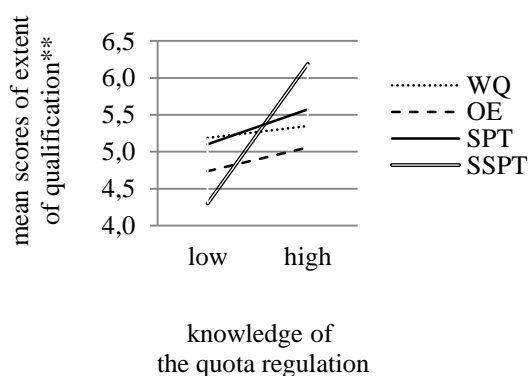


Figure 11: Interaction between knowledge and affirmative action plan* on extent of qualification in hiring.

*WQ = Without Quotas, OE = Opportunity Enhancement, SPT = Strong Preferential Treatment, SSPT = Super Strong Preferential Treatment

** scale ranging from 0 to 10

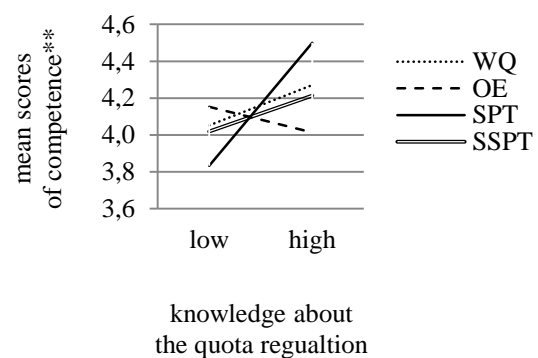


Figure 12: Interaction effect between knowledge and affirmative action plan on competence.

*WQ = Without Quotas, OE = Opportunity Enhancement, SPT = Strong Preferential Treatment, SSPT = Super Strong Preferential Treatment

** scale ranging from 1 to 6

Treatment and high evaluation of competence in Strong Preferential Treatment among participants with good knowledge about quotas support the prediction that negative stigmatization of quota beneficiaries is buffered by knowledge about quotas— stigmatization might even be reversed.

Hypothesis 3: Attitude toward quotas

Attitude toward quotas could rank score-wise from -18 to +18. In the studied sample negative and positive attitudes toward quotas are quite balanced ($m = 2.78$, $SD = 4.59$). The most negative score found for attitude is -12.38, while the most positive score is 13.25. Cut-off point for negative attitude toward quotas is 0.25 ($n = 67$), the moderate attitude group is formed by participants scoring from 0.26 to 3 ($n = 57$), and those scoring higher than 3 build the positive attitude group ($n = 67$). Attitude toward quotas has a significant main effect on the female applicant's evaluation, $F(4,177) = 3.29$, $p < 0.05$, $\eta^2 = 0.07$. Interaction between attitude toward quotas and experimental condition, however, is not significant, $F(6,179) = 1.15$, $p = 0.33$, $\eta^2 = 0.04$. Thus, attitude toward quotas seems to exhibit the same influence in all four experimental conditions. Analyses of variance that were conducted post hoc reveal that attitude toward quotas mainly influences evaluations of extent of qualification in hiring, $F(2,179) = 4.79$, $p < 0.01$, $\eta^2 = 0.05$, and evaluations of competence, $F(2,180) = 5.23$, $p < 0.01$, $\eta^2 = 0.06$. Pearson correlations were conducted to capture the effects' directions. The relationship between attitude toward quotas and rated extent of qualification in hiring is positive, $r = 0.20$, p (one-tailed) < 0.01 , as is the relationship between attitude toward quotas and competence, $r = 0.21$, p (one-tailed) < 0.01 . The more positive attitude toward quotas is, the more extent of qualification is thought to have played a role in hiring, and the better competence is evaluated. Thus, predictions that positive attitude toward quotas influences evaluation of quota beneficiaries positively are supported by the present findings; but positive influence occurred also for women who were not associated with quotas in the experimental manipulation. The latter finding contradicts predictions insofar, as evaluation of women that are not associated with quotas should be unaffected by attitude toward quotas.

Hypotheses 4: Justification strategies

All in all, participants tend to consent more with representation-based ($m = 4.07$, $SD = 1.25$) than with discrimination-based justification strategies ($m = 3.13$, $SD = 1.26$). Participants scoring 8 and lower form a low ($n = 111$), and those scoring 9 and higher a high

representation-based justification group ($n = 98$). Cut-off point for low discrimination-based justification is 6; participants scoring 6 and lower are assigned to the low ($n = 114$), and those scoring 7 and higher to the high discrimination-based justification group ($n = 95$). However, in multivariate analysis of variance on the four dependent measures, justification with increase in representation does not have a significant main effect ($F(4,193) = 1.42, p = 0.23, \eta^2 = 0.03$), nor is representation-based justification significant in interaction with affirmative action plan ($F(4,195) = 1.63, p = 0.17, \eta^2 = 0.03$). Justification with discrimination on the other hand exhibits a significant main effect on the four dependent measures ($F(4,193) = 2.95, p < 0.05, \eta^2 = 0.06$), and it is significant in interaction with affirmative action plan ($F(4,195) = 2.81, p < 0.05, \eta^2 = 0.06$). Thus, effects of discrimination-based justification strategies vary across the different experimental conditions. Figure 13 shows that ratings of competence are affected positively in Without Quota and in Super Strong Preferential Treatment. Contrary to predictions, justification with discrimination does not seem to influence competence ratings in Opportunity Enhancement and in Strong Preferential Treatment. Post hoc analyses of variance reveal that justification with discrimination influences in particular ratings of extent of qualification in hiring ($F(1,193) = 10.49, p < 0.00, \eta^2 = 0.05$); the more participants agree to discrimination-based justification, the higher extent of qualification in hiring is rated, $r = 0.20, p$ (one-tailed) < 0.01 . Justification with discrimination also has a main effect on ratings of the female applicant's ego-oriented soft skills, $F(1,193) = 3.88, p < 0.05, \eta^2 = 0.02$; ego-oriented soft skills are evaluated more favorable if consent with discrimination based justification is high, $r = 0.14, p$ (one-tailed) < 0.05 . Furthermore, interaction between discrimination-based and representation-based justification of quotas is significant ($F(1,193) = 5.66, p < 0.05, \eta^2 = 0.04$) (figure 14). Thus, influence of discrimination-based justification on ratings of extent of qualification differs in dependence of representation-based justification. Figure 14 depicts that ratings of extent of qualification in hiring are most favorable if participants consent with both discrimination- and representation-based justification of quotas to

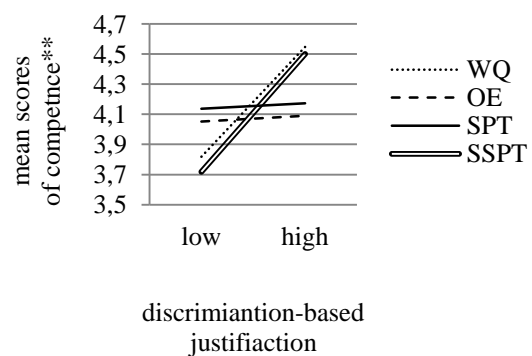


Figure 13: Interaction effect between discrimination-based justification and affirmative action plan* on competence.
 *WQ = Without Quotas, OE = Opportunity Enhancement, SPT = Strong Preferential Treatment, SSPT = Super Strong Preferential Treatment

a high degree. On the other hand, justification with increase of women's representation does not influence ratings of extent of qualification in hiring if discrimination-based justification is low.

In summary, justification with discrimination particularly influences ratings of extent of qualification and ratings of ego-oriented soft skills. But it does not have the same influence in all

conditions as the interaction between discrimination-based justification and affirmative action plan suggests: positive effects seem more pronounced in Without Quota, and in Super Strong Preferential Treatment (figure 13). All in all, stated predictions that discrimination-based justification strategies affect evaluations of the female applicant positively are supported; whereas predictions concerning representation-based justification are not supported. Additionally, it is found that evaluation of quota beneficiaries is most favorable if consent with both justification strategies is high.

Hypothesis 5: Perception of fairness

Overall, perception of fairness of quotas at the Medical University of Vienna is moderate in the sample ($m = 3.90$, $SD = 1.61$). Cut-off point for low perception of fairness is 3 (on a 7-point-scale) ($n = 76$); participants scoring 4 form a moderate perception of fairness group ($n = 60$), and those scoring 5 and higher build the high perception of fairness group ($n = 73$). Multivariate analysis of variance demonstrates that the most striking influence on evaluation of quota regulation beneficiaries is exhibited by perception of fairness of quota regulation, $F(4,195) = 8,08$, $p < 0.00$, $\eta^2 = 0.14$. Post hoc analyses of variance reveal that perception of fairness has highly significant main effects on perceived extent of qualification in hiring ($F(2,179) = 13.34$, $p < 0.00$, $\eta^2 = 0.12$), on ratings of competence ($F(2,198) = 6,86$, $p < 0,00$, $\eta^2 = 0.07$), and on ego-oriented soft skills ($F(2,198) = 7.86$, $p < 0.00$, $\eta^2 = 0.07$). Pearson correlations show directions of the effects: The fairer quotas are seen, the higher extent of

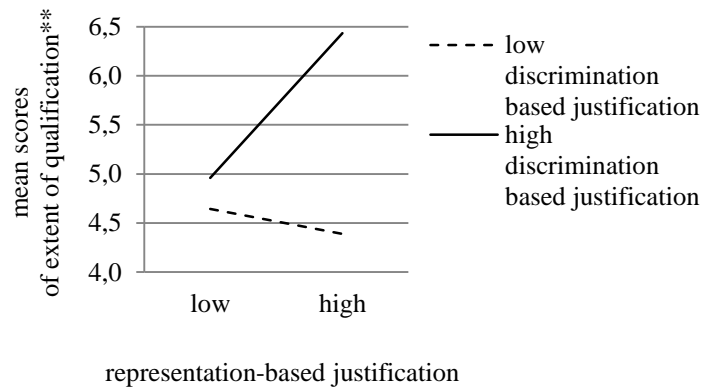


Figure 14: Interaction between discrimination and representation- based justification of the quota regulation on ratings of extent of qualification in hiring.

** scale ranging from 0 to 10

qualification in hiring is rated ($r = 0.28$, p (one-tailed) < 0.00). Likewise, participants who think quotas are very fair rate the female applicant's competence higher ($r = 0.16$, p (one-tailed) < 0.05), and they assign higher levels of ego-oriented soft skills to the female applicant ($r = 0.20$, p (one-tailed) < 0.01). Interaction effects between perceived fairness and experimental conditions are not statistically significant, $F(6,197) = 1.82$, $p = 0.10$, $\eta^2 = 0.05$. Thus independently from affirmative action plan, participants who consider quotas as fair evaluate (potential) beneficiaries more favorable – this is consistent with stated predictions, but for Without Quota; evaluation of women not associated with quotas should have remained unaffected by perceived fairness of quotas.

Hypothesis 6: Perception of discrimination against women

Overall, denial of discrimination against women is moderate in junior scientists ($m = 2.87$, $SD = 1.00$). 2.14 is the cut-off point for the low denial group ($n = 63$); participants scoring 2.15 to 3.14 are assigned to the moderate denial ($n = 77$), and those with scores higher than 3.14 to the high denial of discrimination group ($n = 69$). The conducted multivariate analysis of variance reveals a significant main effect of denial of discrimination against women, $F(4,195) = 3.02$, $p < 0.05$, $\eta^2 = 0.06$. Post hoc analyses of variance were conducted to clarify the nature of that influence. It is found that denial of discrimination exhibits influence on ratings of extent of qualification in hiring ($F(2,197) = 3.92$, $p < 0.05$, $\eta^2 = 0.04$) and ego-oriented soft

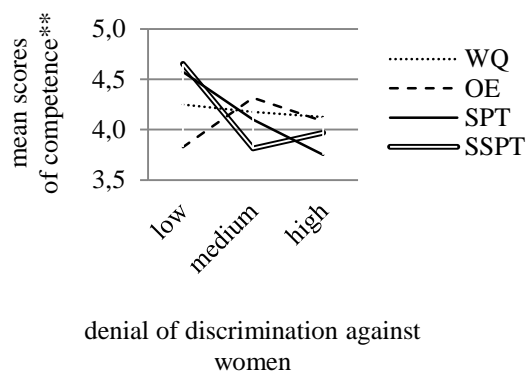


Figure 15: Interaction effect between denial of discrimination against women and affirmative action plan* on competence.

*WQ = Without Quotas, OE = Opportunity Enhancement, SPT = Strong Preferential Treatment, SSPT = Super Strong Preferential Treatment

** scale ranging from 1 to 6

skills ($F(2,198) = 3.82$, $p < 0.05$, $\eta^2 = 0.04$). Pearson correlations show that both the relationship between denial of discrimination and rating of extent of qualification in hiring ($r = -0.156$, p (one-tailed) < 0.05), and the relationship between denial of sex-based discrimination and ratings of the female applicant's ego-oriented soft skills ($r = -0.14$, p (one-tailed) < 0.05) are negative. Thus, the more participants deny sex-based discrimination against women, the lower they rate the extent to that qualification of the female applicant was considered in her hiring, and the less active and strong she is rated. But

effects of denial of discrimination against women do not seem to be consistent in all experimental conditions; the interaction between denial of discrimination and affirmative action also is statistically significant, $F(6,197) = 3.25, p < 0.01, \eta^2 = 0.09$.

Figure 15, for example, depicts that evaluations of competence are more affected by denial of discrimination against women in Strong Preferential Treatment and in Super Strong Preferential Treatment: participants in those conditions rate the female applicant's competence considerably lower if they deny discrimination against women. Participants' denial of sexist discrimination on the other hand does not seem to affect competence ratings in Without Quota. Consistently with predictions, denial of discrimination against women influences evaluations of quota beneficiaries negatively.

Hypothesis 7: Gender

Influence of gender on evaluation of quota beneficiaries has a significant trend in the multivariate analysis, $F(4,197) = 2.06, p < 0.1, \eta^2 = 0.04$, and a significant interaction between rater's gender and experimental condition, $F(4,199) = 2.58, p < 0.05, \eta^2 = 0.05$. Thus, women and men seem to react differently toward the female applicant in dependence of the applied affirmative action plan. Analyses of variance reveal a significant main effect of gender on competence ratings ($F(1,201) = 6.15, p < 0.05, \eta^2 = 0.03$), and on ego-oriented soft skills ($F(1,201) = 5.12, p < 0.05, \eta^2 = 0.03$). Women ($m = 4.27, SD = 1.04$) tend to rate the applicant's competence better than men ($m = 3.95, SD = 0.94$). Also, ego-oriented soft skills of the applicant are rated more favorable by females ($m = 4.31, SD = 0.76$) than by males ($m = 4.08, SD = 0.63$). The interaction between gender and affirmative action plan shows a significant effect on competence rating, $F(3,201) = 2.68, p < 0.05, \eta^2 = 0.05$. Paradoxically, women rate the female applicant's competence higher than men in every experimental condition – except for Opportunity Enhancement, in which women's competence ratings are

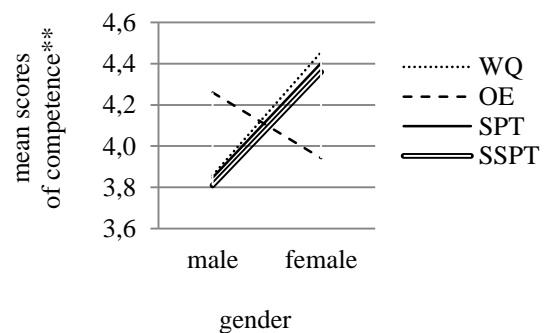


Figure 16: Interaction effect between gender and affirmative action plan* on competence.

*WQ = Without Quotas, OE = Opportunity Enhancement, SPT = Strong Preferential Treatment, SSPT = Super Strong Preferential Treatment

** scale ranging from 1 to 6

lower than men's ratings (figure 16). For some reason females discount the applicant's competence if she is associated with opportunity enhancement, whereas males perceive opportunity enhancement beneficiaries as more competent. But for this peculiar exception results are in line with stated predictions.

Hypothesis 8: Social dominance orientation

In average, social dominance orientation (SDO) is low to moderate in the studied sample, $m = 2.31$, $SD = 1.08$. Participants who score 2 (on a 6-point scale) and lower are assigned to the low ($n = 101$), and those scoring 3 and higher to the high SDO group ($n = 103$). In the conducted multivariate analysis of variance social dominance orientation does not have a statistically significant main effect on the four dependent variables, $F(4,187) = 1.79$, $p = 0.13$, $\eta^2 = 0.04$. But interaction between social dominance orientation and affirmative action plan is significant, $F(4,189) = 2.42$, $p < 0.05$, $\eta^2 = 0.05$. Thus, reactions of participants with different levels of social dominance orientation toward the female applicant differ in dependence of the experimentally assigned affirmative action plan. Post hoc analyses of variance reveal that interaction between affirmative action plan and social dominance orientation mainly influences ratings of competence, $F(3,197) = 2.95$, $p < 0.05$, $\eta^2 = 0.04$. As shown in figure 18, ratings of competence stay rather equal in Without Quota across different levels of social dominance orientation. As predicted, in Strong Preferential Treatment and in Super Strong Preferential Treatment, ratings of competence decline if social dominance orientation is high.

Contrary to the predictions this effect is not more pronounced for males, since interaction effect between social dominance orientation and gender is not significant, $F(4,187) = 1.08$, $p = 0.37$, $\eta^2 = 0.02$. An interesting deviance of competence ratings can be observed in Opportunity Enhancement: paradoxically, highly social dominance oriented participants rate competence of the female applicant better if she is associated with opportunity enhancement. All in all, predictions concerning SDO are not

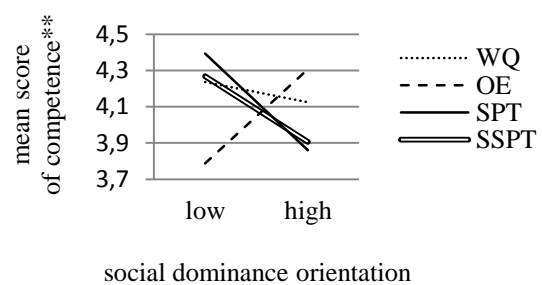


Figure 17: Interaction effect between social dominance orientation and affirmative action plan* on competence.

*WQ = Without Quotas, OE = Opportunity Enhancement, SPT = Strong Preferential Treatment, SSPT = Super Strong Preferential Treatment

** scale ranging from 1 to 6

supported by the current results.

Hypothesis 9: Competition pressure

In general, the young scientists of the Medical University of Vienna who participated in this study report to experience high *competition pressure* in their working environment: $m = 5.01$, $SD = 1.61$ on a scale from 1 (*not at all*) to 7 (*very*). Participants who indicated competition pressure of 5 and lower (on a 7-pointed scale) are assigned to the low ($n = 114$), and those scoring 6 and higher to the high competition pressure group ($n = 94$). However, competition pressure does not exhibit a main effect on the four dependent variables ($F(4,194) = 0.62$, $p = 0.65$, $\eta^2 = 0.01$), and its interaction with affirmative action plan only is in tendency statistically significant ($F(4,196) = 2.01$, $p < 0.1$, $\eta^2 = 0.04$). The predicted interaction effect between competition pressure and gender on evaluation of the female applicant only has a trend for statistical significance, $F(4,194) = 2.29$, $p < 0.1$, $\eta^2 = 0.05$. Interaction graphs show that women's ratings of extent of qualification in hiring do not change in dependence of perceived competition pressure, whereas men rate extent of qualification in hiring of the female applicant lower if experienced competition pressure is high (figure 14). This is pretty much in line with the prediction that men engage in more negative stigmatization of quota beneficiaries if perceived competition is high. On the other hand, figure 15 shows that when it comes to ratings of the female applicant's competence, men do not alter in their responses due to competition pressure, while women who experience high levels of competition pressure

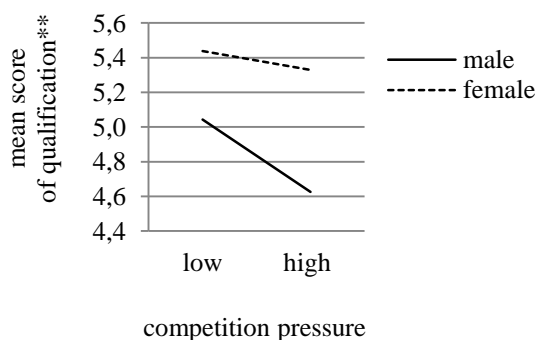


Figure 18: Interaction effect between competition pressure and raters' gender on extent of qualification in hiring.

** scale ranging from 0 to 10

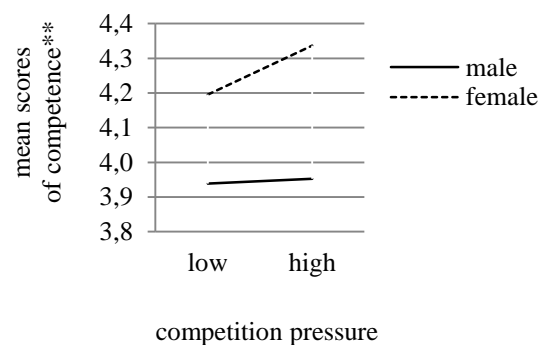


Figure 19: Interaction effect between competition pressure and raters' gender on competence.

** scale ranging from 1 to 6

assign greater levels of competence to the female applicant; thus, these women engage in positive stigmatization. These interactions should be interpreted carefully since effects only are in tendency statistically significant; however, they might have explanatory value for the occurrence of negative and positive stigmatization of quota beneficiaries. Predictions about competition pressure can be regarded as partly confirmed.

Additional findings: Age

Age-wise the conducted multivariate analysis reveals a significant main effect on the four dependent variables, $F(4,191) = 4.05$, $p < 0.01$, $\eta^2 = 0.08$. A post hoc analysis of variance demonstrates that age exhibits its influence mainly on perception of the female applicant's ego-oriented soft skills, $F(3,193) = 2.73$, $p < 0.05$, $\eta^2 = 0.04$. The older a person is, the more favorable the female applicant's ego-oriented soft skills are evaluated ($r = 0.14$, p (one-tailed) < 0.05). Graphic accounts show an interesting pattern in participants' evaluations of the applicant. Ratings of 20 to 35 year-olds do not differ a lot across the four dependent measures. The most interesting group age-wise includes the 36 to 40 year-old participants: their ratings of extent of qualification drop compared to the younger and older colleagues. Likewise, ratings of competence are lowest in this age group, and ratings of team-oriented soft skills also are slightly lower among participants above 36. It seems that negative stigmatization of quota beneficiaries occurs but for this age group. Strangely enough, it is the group of 36 to 40

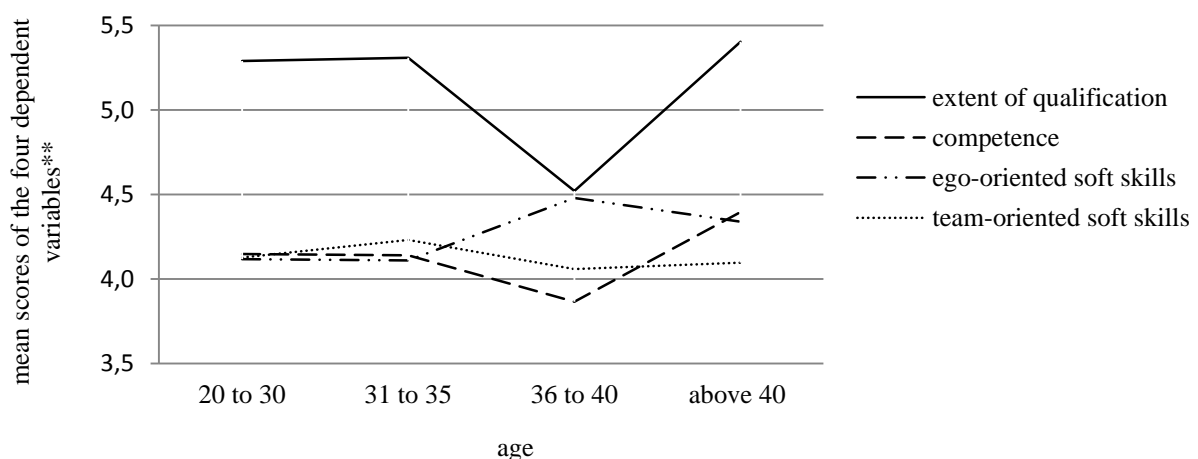


Figure 20: Mean scores of the four dependent measures in dependence of raters' age.

** Note that extent of qualification is based on another scale level (0 to 10), and should not be directly compared to the other measures (1 to 6).

year-olds that evaluates the female applicant's team-related soft skills most favorable (figure 20).

Interaction between age and affirmative action plan also is significant ($F(9,192) = 2.33, p < 0.05, \eta^2 = 0.10$). The interaction graphs show that the before-mentioned pattern is especially pronounced in Opportunity Enhancement (figure 21).

Note that no hypothesis concerning age was stated, hence interpretations should be made very carefully.

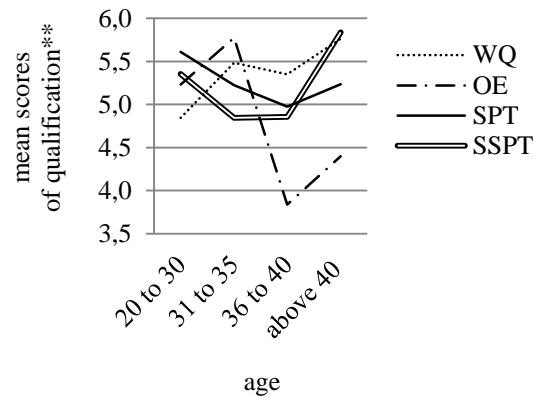


Figure 21: Interaction effect between age and affirmative action plan on extent of qualification.

*WQ = Without Quotas, OE = Opportunity Enhancement, SPT = Strong Preferential Treatment, SSPT = Super Strong Preferential Treatment

** scale ranging from 0 to 10

Summarizing results of the main study

In the present study no stigmatization occurs by associating women with quotas, thus hypothesis 1 is not supported. Good knowledge about quotas seems to buffer negative stigmatization of quota beneficiaries, hence hypothesis 2 is confirmed. Attitude toward quotas influences the evaluation of women independently from the affirmative action plan they are associated with, thus hypothesis 3 is partly confirmed. Discrimination-based justification of quotas influences evaluation of quota beneficiaries positively, hence hypothesis 4a is supported. But representation-based justification does not exhibit such influence. Consequently, hypothesis 4b is not confirmed in the present study. Perceived fairness of quotas has a highly significant effect on evaluation of women. But as with attitude toward quotas, this influence is independent from affirmative action plan women are associated with. Thus, hypothesis 5 is partly confirmed. Hypothesis 6 on denial of discrimination against women is supported by the present results. Gender moderates stigmatization of quota beneficiaries as predicted but for Opportunity Enhancement. Thus, hypothesis 7 is partly supported by the present findings. Social dominance orientation moderates stigmatization of quota beneficiaries, but other as predicted the effects are not different for males and females. Therefore, hypothesis 8 is not supported. The influence of competition pressure only is in tendency statistically significant, thus hypothesis 9 is not supported by the present findings.

Overall, many variables proved significant predictors of stigmatization – either by themselves or in interaction with the applied affirmative action plan. Table 5 summarizes effects observed in the conducted MANOVA's on the four dependent variables *extent of qualification in hiring*, *competence*, *ego-oriented soft skills* and *team-oriented soft skills*.

Table 5: Main study: Effects on the four dependent variables extent of qualification in hiring, competence, ego-oriented soft skills, and team-oriented soft skills.

variable	<i>p</i>	η^2
affirmative action plan	0.57	0.01
attitude toward quotas	0.13*	0.07
affirmative action plan*attitude toward quotas	0.33	0.04
knowledge about quotas	0.05*	0.05
affirmative action plan*knowledge about quotas	0.03*	0.05
denial of discrimination	0.02*	0.06
affirmative action plan*denial of discrimination	0.01**	0.09
competition pressure	0.65	0.01
affirmative action plan*competition pressure	0.09	0.04
competition pressure*gender	0.06	0.05
justification with increase in representation	0.23	0.03
affirmative action plan*justification with increase in representation	0.17	0.03
justification with discrimination	0.02*	0.06
affirmative action plan*justification with discrimination	0.03*	0.06
justification with increase in representation*justification with discrimination	0.14	0.04
perception of fairness of quotas	0.00***	0.14
affirmative action plan*perception of fairness of quotas	0.10	0.05
social dominance orientation	0.13	0.04
affirmative action plan*social dominance orientation	0.05*	0.05
social dominance orientation*gender	0.37	0.02
gender	0.09	0.04
affirmative action plan*gender	0.04*	0.05
age	0.00**	0.08
affirmative action plan*age	0.02*	0.10

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.00$

4.2.7 Discussion

The present study which was conducted on a sample of young scientists at the Medical University of Vienna does not reveal a significant main effect of affirmative action plan. Thus, evaluations of female quota beneficiaries do not seem to be influenced solely by the presence of quotas. Similar to the pretest, evaluations of competence even tend to be more favorable for women associated with preferential treatment; hence, a stigma of incompetence as it was found in earlier studies (Heilman, 1992; Resendez, 2002) could not be confirmed. Note that negative stigmatization does not even occur in Super Strong Preferential Treatment that included strict quotas without requiring equal qualification! One possible explanation for these findings is that instead of attributing application of affirmative action to a lack of competence in females, the necessity of quotas might be attributed to sexist work environments. If preferential treatment is applied, individuals might believe that a work setting must be especially sexist. Consequently, professional competence of women who benefit from quotas is not discounted; women even may be seen as more competent since they managed to get along in a discriminatory work environment. This interpretation would be consistent with attribution theory. According to attribution theory, the discounting principle that has been thought to cause negative stigmatization of affirmative action beneficiaries (Heilman, 1992; Resendez, 2002) is but applied for common events (Kelley, 1973; Försterling, 2006). Thus, in situations where it is thought natural that women are employed in a certain job position, individuals tend to attribute the event of a woman's hiring to only *one* cause. Therefore, in the presence of quotas (as one possible cause), a woman's competence as second possible cause for her hiring is discounted. But if the event of hiring a woman is seen as *uncommon*, discounting of her competence does not occur, since in such situations individuals usually think that more than one cause is necessary for an uncommon event. Applying strong preferential treatment might imply that hiring women is unusual for this job position due to a very sexist work environment. Hence, multiple causes such as affirmative action policies *and* a woman's competence are believed to be necessary to lead to her hiring – no discounting of competence/ negative stigmatization occurs. Since this interpretation is given post hoc, future research should clarify its virtue experimentally. Especially, future research should consider to what degree participants perceive the hiring of women as common or uncommon in a specific work setting, since this might have tremendous effects on the occurrence of discounting women's professional competence.

Evaluation of females does not seem to be influenced solely by associating them with affirmative action policies such as quotas; but other factors linked to affirmative action do exhibit significant effect on the evaluation of women.

Attitude toward quotas

For example, attitude toward quotas displays a significant main effect on evaluation of women associated with quota regulation. The more positive attitude toward quotas is, the more favorable are ratings of female applicants' competence, ego-oriented soft skills, and team-oriented soft skills, and the higher the extent of qualification in hiring is perceived. Interaction effects between quota regulation attitude and affirmative action plan are not significant. Thus, the relationship between quota regulation attitude and quota beneficiaries evaluation does not alter in dependence of experimental condition. Independently of the association with quotas, women are evaluated more favorable if attitude toward quotas is positive. Interestingly, women not at all associated with quotas also are evaluated more favorable if attitude toward quotas is positive. A possible explanation for this event is, that people who perceive women as competent may also have more favorable attitude toward political measures that support women's career success. Alternatively, quotas as a matter of ongoing debates might be so omnipresent that implicitly women are always associated to some degree with affirmative action including quotas, and thus, factors that exhibit influence on evaluation of beneficiaries also affect women if not clearly marked as such. If so, a condition that does not provide any association with quotas, ultimately, cannot be experimentally manipulated. Maio and Esses (1998) find that stigmatization due to affirmative action is not only directed to the individual in question, but the whole social target group is stigmatized as being less competent. Future research should aim to investigate if, and to what extent women are generally associated with quotas. Additionally, it should be clarified if attitude toward quotas causes better evaluation of quota beneficiaries or if attitude toward quotas, on the other hand rather, is caused by the belief that women are professionally competent anyways.

Developing assessment tools for attitudes toward quotas

The questionnaire for quota regulation attitude was developed based on data of the pretest, and is tailored to measure attitude toward quotas implemented in Austria. As shown by results in the present study, the questionnaire could reliably predict evaluation of quota beneficiaries.

Yet, further research to investigate the questionnaire's validity should be conducted. The sample of young psychology students which the construction of the questionnaire is based on is rather specific. It could be fruitful to investigate if other samples produce similar items. Furthermore, it should be examined if the questionnaire proves useful to measure attitude toward quotas a) in other countries (like Germany) that have similar quota regulations in place and b) in extra-university work environments.

Effects of perceived fairness of quotas

As in the pretest, the most striking main effect occurs for perceived fairness of quotas; hence perception of fairness of quotas seems to be the strongest predictor concerning evaluation of quota beneficiaries. Again, interaction effects between perceived fairness and affirmative action plan are not significant, indicating that perceived fairness of quotas exhibits similar influence in all experimental conditions – also if women are not associated with quotas at all. The fairer quotas are perceived, the more favorable women are evaluated. The positive relationship between high perceived fairness of quotas and better evaluations of women regardless of their association with affirmative action plan implies that judging women as competent leads to perception of fairness of quotas. Participants who generally perceive women as competent might also see quotas as fair measure. Again, it also is possible that an overall implicit association of women with quotas occurs due to its medial presence. Neither interpretation can be made solely based on the current results. Future research needs to investigate the nature of the relationship between perceived fairness of quotas and evaluation of quota beneficiaries. Although findings of the pretest that show most favorable evaluations of quota regulation beneficiaries, if perception of fairness is moderate, could not be repeated, such effects and circumstances under which they occur also should be addressed by future research. In general, it could be interesting to examine effects of political correctness on both perception of fairness of quotas and evaluation of beneficiaries of quotas.

Effects of knowledge about quotas

Another significant main effect on evaluation of female applicants is displayed by knowledge about quotas at the Medical University of Vienna. In general, good knowledge about quotas is associated with better evaluation of quota beneficiaries. Since interaction between knowledge and affirmative action plan also is significant, effects of knowledge alter in dependence on experimental condition. For example, positive effects of high knowledge about quotas on

ratings of competence are more pronounced in Strong Preferential Treatment; and particular positive effects can also be perceived for ratings of extent of qualification in hiring in Super Strong Preferential Treatment. Thus, high knowledge about quotas affects evaluation of women associated with quotas in a positive way. This might be related to effects of over-correction in participants with high quota regulation knowledge; Participants who know plenty about quotas as they are applied at the Medical University of Vienna might be aware of the fact that such selection procedure as in Super Strong Preferential Treatment actually does not exist at the Medical University of Vienna. Hence, they drive to correct for the attributional bias that leads to the stigma of incompetence; unlike participants whose knowledge about quotas is low. The latter rate the extent of qualification in hiring low – as it was predicted. Yet, participants in Super Strong Preferential Treatment must have *over*-corrected their bias, since they rate extent of qualification also higher than participants with high knowledge about quotas in the other experimental conditions do. Curiously, in Super Strong Preferential Treatment over-correction does not occur for the other three dependent variables. When it comes to ratings of competence, positive effects of knowledge are more pronounced in Strong Preferential Treatment: possibly some kind of over-correction is also responsible for this effect. Participants with high knowledge might be aware of debates about stigmatizing effects; hence they might have tried to correct for negative stigmatization (see 5.7.4). On the other hand, extent of qualification in hiring tends to be rated less favorable for women associated with opportunity enhancement if participants' knowledge about quotas is high. Participants with good knowledge about quota regulation might be conscious about the fact that inviting women to apply for a job is linked to beneficitation of quotas at the Medical University of Vienna. Hence, they might have felt deceived by not mentioning quota regulation in the employment ad, and that feeling of deception might have resulted in less favorable evaluations of the female applicant. But within this explanation, it remains unclear why women in Without Quota are not evaluated less favorable if quota regulation knowledge is high. If participants feel deceived by not honestly mentioning applied affirmative action, not stating quota regulation at all also should enhance feelings of deception; nevertheless, such effect is observed in the pretest, where high knowledge about quotas is related to more favorable evaluations of all female applicants but those not at all associated with affirmative action. In summary, good knowledge about quotas seems to buffer effects of negative stigmatization, and even leads to reversed stigmatization if strong preferential treatment is applied. Future research needs to address issues of potential over-correction that results in

positive stigmatization, as well as possible feelings of deception, if applied affirmative action is not communicated in an honest way.

Effects of perception of discrimination against women

Denial of discrimination has a significant main effect on evaluation of quota beneficiaries. The more an individual denies existence of discrimination against women, the less favorable those who benefit from affirmative action are seen. The significant interaction between denial of discrimination against women and affirmative action plan reveals that effects of denial are especially pronounced if women are associated with quotas (Strong and Super Strong Preferential Treatment). Thus, individuals who strongly deny discrimination against women rate competence of women who benefit from quotas negatively. Individuals who do not acknowledge that women still suffer from sexist discrimination in professional settings will be more apt to perceive affirmative action like quotas as redundant, and its beneficiaries as undeserving. In the eyes of those who deny discrimination against women, the lack of female career success is probably explained with deficiency of women's professional competence. Consequently, women who benefit from measures designed to compensate for sex-based work place discrimination are seen as incompetent by individuals who do not believe in work place discrimination in the first place. On the other hand, individuals who perceive sexist discrimination will be more inclined to attribute lack of women's success to discriminatory work environments. Negative stigmatization of quota beneficiaries by individuals who deny still existing work place discrimination was predicted by attribution theory; but individuals who are aware of discrimination against women were assumed *not* to engage in negative stigmatization; however, *reversed* or positive stigmatization was not expected. Thus, future research should investigate what kind of attributions underpin the occurrence of reversed stigmatization if denial of work place discrimination is low. In the pretest, evaluation of quota regulation beneficiaries is most favorable if denial of discrimination against women is moderate. Although such pattern does not occur in the main study, its possible occurrence should be kept in mind, and future research should address the question if such finding can be the result of political correctness.

Effects of justification strategies

As in the pretest, participants of the main study consent more with justification strategies, which refer to increasing representation of women in certain job positions, than to

justification strategies based on elimination of discrimination. This might not be surprising if one considers that in public debates, quotas are mainly justified with a need to increase female workforce. The Medical University of Vienna, for example, has set the increase of percentage of women at every hierarchical level as reason to apply quotas (Medical University of Vienna, 2004), and each job ad contains representation-based justification stating: “since the Medical University of Vienna aims to increase the proportion of women in [...]” (see Newsletter of the Medical University of Vienna, 2011). Since experimental manipulation was based on such original job ad, and therefore included this phrase, the experimental manipulation of the current study might have further enhanced participants’ consent with representation-based justification strategies. Thus, future research should word experimental manipulations more carefully on this regard. However, it is justification with discrimination that exhibits a significant main effect on evaluation of quota beneficiaries. The significant interaction between discrimination-based justification and affirmative action plan suggests that effects of justification with discrimination vary across the experimental conditions. Ratings of competence, for example, do not differ much in dependence on discrimination-based justification in Opportunity Enhancement and Strong Preferential Treatment. But in Without Quota and Super Strong Preferential Treatment, evaluations of the female applicants’ competence are more favorable if discrimination-based justification is high. Apparently, elimination of discrimination is a strong argument in favor of strict quotas that helps to prevent a stigma of incompetence for female beneficiaries. It remains unclear, why such effects are not found for Strong Preferential Treatment. Possibly, quotas that set the precondition of equal qualification of female applicants are not perceived as vehicle that is efficient enough to fight discrimination against women, and therefore effects of discrimination-based justification do not show to the same degree. The same could be true for opportunity enhancement. Interestingly, ratings of female applicants’ competence are also more favorable in Without Quota if justification with discrimination is high. A possible explanation is that acknowledging discrimination-based justification of quotas means acknowledging discrimination against women. Thus, women who presumably do not benefit from affirmative action in a discriminatory work environment might be perceived as extra competent. However, it remains unclear if it is rather justification with *present* discrimination against women or justification with *past* discrimination against women that plays a significant role in perception of quota beneficiaries. In the current study, both justification with past and justification with present discrimination were combined in one scale; given that correlation

between justification with present and justification with past discrimination is low to moderate in the pretest ($\alpha = 0.55$), and moderate in the main study ($\alpha = 0.62$), future research should examine the impact of each separately to determine, which one predicts evaluation of quota beneficiaries more reliably. Another interesting finding concerning justification strategies is the statistically significant interaction effect between representation-based justification and discrimination-based justification on evaluation of the female applicant. Ratings of extent of qualification in hiring are most favorable if consent to both representation- and discrimination-based justification strategies is high. Hence, effects of the two justification strategies seem to add up. Future research should further investigate the nature of this combined effect.

Effects of social dominance orientation

Social dominance orientation does not show a significant main effect on evaluation of the female applicant; but interaction effects between social dominance orientation and affirmative action plan are significant. For example, ratings of female applicants' competence are less favorable if social dominance orientation is high, and decline in competence ratings is more pronounced in Strong Preferential and in Super Strong Preferential Treatment than in Without Quota. On the other hand, ratings of competence are more favorable in Opportunity Enhancement if social dominance orientation is high. Perhaps, participants high in social dominance orientation tend to better accept opportunity enhancement as affirmative action measure, and hence evaluate its beneficiaries more favorable. Especially, social dominant males might feel less threatened by opportunity enhancement than by harsher affirmative action plans and thus respond toward its beneficiaries more positively. But interaction effects between social dominance orientation and gender are not significant, thus, responses of males and females high in social orientation do not seem to differ as it was predicted. Both men and women high in social dominance orientation seem to react negatively toward women associated with preferential treatment, and positively toward those who benefit from opportunity enhancement. Men high in social dominance orientation might object quotas and their beneficiaries because they want to maintain inequality between men and women; whereas women high in social dominance orientation might aim to hold on to inequality between women who succeed in male-dominated work environments and women who presumably do not, if not supported by affirmative action. But for both highly social dominance oriented males and females, affirmative action might be legitimate if it is limited

to inviting qualified women to apply for certain professional positions. Future research needs to address this odd relationship, and should aim to grasp what attributions individuals high in social dominance orientation make to opportunity enhancement beneficiaries.

Effects of competition pressure

Competition pressure is not found to be a predictor of stigmatization of quota beneficiaries since its main effect is not statistically significant. Interaction between competition pressure and affirmative action only is in tendency statistically significant, as is the interaction between competition pressure and gender. However, effects point in the predicted direction: males who experience high levels of competition pressure evaluate extent to which qualification was considered in hiring the female applicant lower; whereas females who report high competition pressure evaluate competence of the female applicant more favorable. The relationship between competition pressure and gender-specific stigmatization, which roots in the group dominant approach, has good potential to explain differences in men's and women's reactions toward affirmative action and its beneficiaries within a psychological framework other than attribution theory. Considering that the sample of young scientists overall reports rather high competition pressure in their work environment, it seems pretty important to further clarify effects of competition pressure on evaluation of female colleagues that benefit from quotas. Therefore, future research should systematically examine the gender-specific impact of competition pressure on evaluation of quota regulation beneficiaries.

Effects of gender

In general, women evaluate female applicants better than men do in terms of extent of qualification in hiring, competence, and soft skills. But more favorable ratings of females are not consistent in all experimental conditions: women give higher ratings of the female applicant's competence in Without Quota, Strong Preferential Treatment, and Super Strong Preferential Treatment; but in Opportunity Enhancement women's ratings of competence decline, whereas men's ratings of competence increase. Apparently, women react more negatively to opportunity enhancement beneficiaries, while men react more positively toward them. Possibly, these alterations in ratings reflect gender-specific differences in taste for affirmative action plans. Males might feel less threatened by opportunity enhancement since it does not imply preferential selection procedures, and therefore also react more favorable toward its potential beneficiaries. On the other hand, women might experience opportunity

enhancement not as sufficient enough – compared to preferential treatment – and therefore react more negatively toward its beneficiaries. Alternatively, opportunity enhancement might induce different attributions in males and females. Possibly, it is but males that follow the pattern of attributing less competence to affirmative action beneficiaries the more weight is given to gender in a job related decision; whereas women might associate quotas more with qualification and professional competence. Hence, they attribute qualification and competence to quota regulation beneficiaries but not necessarily to women benefitting from other forms of affirmative action like opportunity enhancement. Research to clarify gender-specific differences in evaluations of affirmative action beneficiaries is due. Particularly, future research should examine what males and females associate with different forms of affirmative action and their beneficiaries.

Effects of age

Besides gender, another demographic variable proves a reliable predictor of evaluation of quota beneficiaries: age displays a significant main effect. Interestingly, a drop of competence ratings and ego-oriented soft skills ratings as well as of ratings of extent of qualification in hiring is observable for participants aged 36 to 40; whereas younger and older participants evaluate the female applicant more favorable. Apparently, age 36 to 40 seems to be a sensitive age when it comes to affirmative action. Possibly, for 36 to 40 year-olds affirmative action is especially salient; people in this age group have usually achieved a lot in their career, and higher positions become more and more scarce. Thus, it is mostly people this age that are targeted by affirmative action policies. On the other hand, study participants aged older than 40 often already work in high professional positions and might feel less concerned by affirmative action, since they are neither potentially advantaged, nor potentially disadvantaged by quotas. Furthermore, employees of the Medical University of Vienna aged 36 to 40 might have experienced implementation of quotas and all the debates accompanying their introduction; whereas younger employees mostly have grown up into an organizational system applying such measures. Therefore, they might experience quotas as more natural. Visser and Krosnick (1998) suggest a greater susceptibility to attitude change in early *and* late adulthood than during middle adulthood. Thus, 36 to 40 year-olds might be especially opposed to accept relatively new policies as quotas and its beneficiaries. Interestingly, the drop of ratings for 36 to 40 years old participants is especially pronounced in Opportunity Enhancement. Surprisingly, this age group evaluates women associated with opportunity

enhancement particularly negative. Therefore, future research should especially focus on this age group, and investigate attributions made by individuals aged 36 to 40 to women associated with quota regulation and opportunity enhancement. Doing so, it might be fruitful to include research on developmental and aging psychology.

Working toward a model of stigmatization against quota beneficiaries

As mentioned earlier, affirmative action plan alone does not have a statistically significant main effect on evaluation of women associated with quotas; but as one could see it proves significant in interaction with many other predictors of stigmatization of quota regulation beneficiaries. Hence, affirmative action plan does exhibit influence on evaluations of beneficiaries by altering reactions of study participants in dependence on other predictors.

The present study explored a big variety of different factors that were assumed to predict evaluation of quota beneficiaries. Factors were analyzed separately to avoid confounding effects and to get a better impression of the influence of each possible predictor independently from other factors. However, in reality predictors most certainly are intermingled: attitude toward quotas for example will be confounded with denial of discrimination, whereas discrimination-based justification most certainly depends on denial of discrimination. Furthermore, perception of fairness of and attitude toward quotas surely will interact with each other. Future research should drive to develop a theory-based model which integrates different factors that have been shown to influence evaluation of women associated with quotas or other affirmative action plans, and which manages to describe the complex relationships between those factors. Such a model for example should clarify the effect of gender on evaluation of quota beneficiaries. Does gender directly influence such evaluations due to matters of gender-specific social roles as Eagly and colleagues (2004) suggest? Or does gender moderate such evaluations by influencing factors as perception of discrimination against women that again exhibit influence on evaluation of quota beneficiaries; Konrad and Hartmann (2001) assume for example such moderating role of gender. Naturally, this is but one example for factors whose interrelations need to be clarified by such a model. Alone in the study at hand, several factors showed direct statistically significant influence on evaluation of women associated with quotas; whereby not all of the four dependent measures are affected equally by each factor. Some factors as attitude toward quotas rather influence competence ratings, and others factors as knowledge about quotas exhibit influence rather on ego-oriented soft skills. Furthermore, several interaction effects proved statistically

significant, but the nature of interrelations between many factors and their combined effects remain unclear. Future research should investigate interactions and combined influence of these factors on each dependent variable separately. The development of a theory-driven sophisticated model of stigmatization against quota beneficiaries should result in a more realistic picture of stigmatization effects, and ultimately in a better understanding of such stigmatization – may it be negative or reversed.

Reconciling pretest and main study

Findings of both the pretest and the main study are consistent in that negative stigmatization of quota beneficiaries cannot be observed. The main difference between results of the pretest and the main study is that affirmative action plan that women were associated with exhibits a significant main effect in the pretest, while all other factors – except perception of fairness – only are significant in interaction with affirmative action plan. This suggests that – as predicted – the assumed predictors of stigmatization moderate effects of applied affirmative action plan on evaluation of quota beneficiaries. On the other hand, affirmative action plan does not have a significant main effect in the main study, but is in many cases significant in interaction with one of the other predictors of quota regulation beneficiaries' evaluation. Thus in the main study, applied affirmative action plan rather alters effects of other predictors than the other way around. In the pretest and in the main study, participants' reactions also differ regarding some other effects: for example perception of fairness and evaluation of quota regulation beneficiaries have a positive, linear relationship in the main study; whereas in the pretest an inverted u-shape is found for this relationship with most favorable evaluations if perception of fairness is moderate. Such differences should be taken serious since the show that response behavior of undergraduate psychology students might deviate from reactions of other professional groups as young scientists. This is actually not surprising considering that psychology students are neither directly affected by measures like quotas, nor can the work environment of psychology students necessarily be compared with “real” work environments. Note for example that competition pressure among the young scientists ($m= 5.01, SD = 1.61$) is higher than among the sample of psychology students ($m = 4.37, SD = 1.80$). In general, response behavior of the psychology student sample makes a more disorganized impression. This could be due to sample size that was rather small, and therefore puts more weight on individual reactions. More disorganized response behavior also could have been caused by the sample itself, since students might not yet have formed stringent attitudes toward quotas and

its beneficiaries. Also, knowledge about quotas is considerably lower in the psychology student sample ($m = 1.96$; $SD = 1.61$) than in the young scientist sample ($m = 2.74$, $SD = 1.66$). All in all, we may learn from deviances in findings of the pretest and the main study that results gathered with psychology students are not necessarily externally valid. In conclusion, future research should focus more on “real world” employees that are directly affected by quotas, and investigate their reactions toward real or fictive colleagues that benefit from quotas.

The paradox effects of opportunity enhancement

One experimental condition should have caught the reader’s attention repeatedly with a series of queer findings that were not predicted by Kelley’s (1973) attribution theory, and that hardly can be explained by it: Opportunity Enhancement. In the pretest as well as in the main study, women associated with opportunity enhancement are rated least favorable in terms of extent of qualification in hiring, competence, ego-oriented soft skills, and team-oriented soft skills. As before-mentioned, especially participants aged from 36 to 40 evaluate opportunity enhancement beneficiaries negative. According to Heilman and Blader (2001) women also suffer from a stigma of incompetence if association with affirmative action is ambiguous. If affirmative action is implied but not clearly stated, college students evaluate female applicants as negative as if unmistakably marked as affirmative action beneficiaries. Possibly, opportunity enhancement created a sense of ambiguity in study participants. Inviting women specifically to apply for a certain position could have implied beneficitation from quotas without clearly stating the latter. Note that in the pretest, inviting women explicitly to apply for a job position is stated as advantage of quotas (see table 2). Thus, opportunity enhancement does seem to be quickly associated with quotas. Again, feelings of deception might have strengthened negative reactions toward opportunity enhancement beneficiaries since the application of affirmative action is implied but not openly communicated. On the other hand, women associated with opportunity enhancement are evaluated *more* favorable under certain conditions: for example males give higher competence ratings to women associated with opportunity enhancement, whereas females evaluate opportunity enhancement beneficiaries least favorable. Participants high in social dominance orientation also rate competence of women associated with opportunity enhancement more favorable, while women’s competence is discounted by participants high in social dominance orientation if they are associated with quotas or not at all with affirmative action. Note that interaction

between gender and social dominance orientation is not significant! Higher competence ratings by men and individuals high in social dominance orientation contradict the before-mentioned ambiguity-hypothesis (Heilman & Battle, 2001). In theory, males and especially those high in social dominance orientation should oppose strong preferential treatment and its beneficiaries the most; but there seems no reasonable explanation at hand why they should perceive women benefitting from opportunity enhancement more favorable. After all, opportunity enhancement also is a form of affirmative action. Consequently, research focusing on opportunity enhancement should be conducted. Future research should explore gender-specific associations with opportunity enhancement, and opportunity enhancement beneficiaries. Furthermore, future research should investigate the relationship between positive perception of opportunity enhancement beneficiaries' competence and high social dominance orientation.

Are there no token women in Austria? – Possible reasons why negative stigmatization of quota beneficiaries is not confirmed

All in all, the existence of a stigma of incompetence assigned to women benefitting from quota regulation is not supported by the given results. Even, if ratings of presumed extent of qualification in hiring are low, women are not necessarily seen as less competent – as is the case for strong preferential treatment in the pretest and super strong preferential treatment in main study (see 4.1.6 and 4.2.6). Thus, findings clearly contradict earlier conducted studies (Heilman et al., 1992; Resendez, 2002). This might be quite simply explained by a methodological failure to create strong enough associations between the applicant to evaluate and the experimentally manipulated affirmative action plan. Possibly, women just were not identified as quota beneficiaries, and therefore they are not evaluated less favorable. Although it might be tempting to push the responsibility for the contradictory findings at hand to flaws in study design and method, note that in Heilman and colleagues' (1998) research, it also sufficed to state a university's intent to apply affirmative action in an application ad to induce negative stigmatization. Furthermore, in the professional daily life women are not visibly marked as quota beneficiaries, but association with affirmative action is more subtle, and seems often simply induced by the knowledge that an organization applies preferential selection to some degree. Beside such reflections, it may be more fruitful and inspiring for future research to consider alternative explanations concerning the failure to confirm negative stigmatization of quota beneficiaries in this study. For example, the non-occurrence of

negative stigmatization might be plainly explained by passage of time. Even the youngest cited study on stigmatization effects – Resendez (2002) – was conducted ten years ago. Meanwhile, affirmative action might have become more natural for a majority of individuals. Affirmative action beneficiaries might have proven competent and qualified after all. Thus, over time the stigma of incompetence might have faded. But, study participants still name the same arguments pro and contra affirmative action that were brought on years ago. So, characteristics assigned to affirmative action plans do not seem to have changed over time; why then should the evaluation of beneficiaries have? In the pretest, almost one third of participants are aware that stigmatization of beneficiaries is a potential disadvantage of quotas, and 77 participants (~37%) in the main study believe that it is very likely that stigmatization of quota regulation beneficiaries occurs. What might have changed over time is awareness of stigmatization of affirmative action beneficiaries. Thus, people might be more apt to correct for stigmatization than they were some years ago. It might be hard to study changes over time retrospectively; but future research could and should focus on effects of awareness of stigmatization on evaluation of quota beneficiaries.

Deviations in earlier results also might be explained by cultural differences. Different cultural standards concerning affirmative action – especially quotas – are for instance clearly reflected in legislation. In the US, application of strict quotas is prohibited by law (Iyer, 2009); whereas law in Austria obliges public employers and universities to apply quotas (BGBG, 1993), and the European Union plans to introduce obligatory quotas also for supervisory boards within 2013 (Tucek, 2012). Cited studies were mostly conducted in the US, where historically principles of meritocracy¹⁴ are very important (Lemann, 1999; Young, 1958). Son Hing and colleagues (2002) argue that people high in meritocracy orientation tend to oppose affirmative action since such measures are perceived as violating principles of meritocracy. But meritocracy might not be as important for European societies. Hence, it would be most interesting for future research to address the issue of possible cultural differences in reactions to affirmative action and affirmative action beneficiaries.

Limitations

Strength of the present study is that it was conducted on a real world sample which is actually affected by quotas and other forms of affirmative action. Yet, young medicine scientists

¹⁴ Referring to aristocracy and plutocracy, Young (1958) speaks of meritocracy as „rule not so much by the people as by the cleverest people“ (p.19).

constitute a very specific group, and reactions to quota regulation beneficiaries might not be generalized to other professional groups. Furthermore, response rate in the main study is but 10%; hence, representability might not be given. Besides, some other factors might restrict interpretability of the results.

First, its design as online study might have posed some problems in the matter of interpretability. Although practical in terms of accessibility to and convenience for study participants, online studies have the disadvantage that test situations are uncontrolled. It remains unclear if participants were distraught during the study, if they had the opportunity to consult with others, how carefully they read the test material, or if they understood what was demanded of them.

According to Traver and Alliger (1999; cited after Doverspike et al., 2006), limited information is a precondition of stigmatization. Thus, study participants were given only little information about the fictive applicant they should evaluate. In the given sample though, having limited information induced anger and frustration in some participants. Eight participants complained that they had difficulties to evaluate the fictive candidate since information about her was extremely limited; “How should I get to conclusions about competence, given that little information about the candidate?”¹⁵ One participant complained for example; another stated: “It seemed simply impossible to characterize the applicant. Usually, I had to meet her in person before I could do so”¹⁶ (translations by the author). Instead of engaging in stigmatization based on affirmative action plan the applicant was associated with, some study participants might have felt safest choosing average answer categories for the candidate. Hence, participants’ responses might be biased by a tendency for average ratings. This might be a reason for similar evaluations of the candidate in all experimental conditions, and the statistically insignificant main effect of experimental condition.

Another aspect restricting interpretability of the results might be that the advertised job in the employment ad was too trivial. The job ad offered a position as resident at the Medical University of Vienna. The residency position was chosen to enhance feelings of being personally affected by the job decision in young scientists. Overrepresentation of residents in the final sample might be proof that this strategy was successful; residents constitute about

¹⁵ “Wie sollen aus den wenigen Angaben zur Person im Beispiel Schlüsse über Kompetenz etc. gezogen werden? [...]“

¹⁶ “[...] Es schien mir schier unmöglich der Bewerberin Eigenschaften zuzuschreiben. Im Normalfall könnte ich das erst nachdem ich sie persönlich kennen gelernt hätte [...]“

44% of participants in the final sample of the study; although their base-rate only is about 34% in the population. Thus, further research should keep in mind that offering professional positions in the experimental manipulation, that are similar to the intended samples' profession, might increase response rate. But, although in theory quotas are applied in every hierarchical level of the Medical University of Vienna, in praxis, residency usually is not a position that requires application of quotas, since residency positions are first not scarce (at least not compared to professorates), and second residents do not exhibit a great deal of power in an organization as the Medical University of Vienna. Consequently, it might be not as important if such a position is occupied by a male or female. For the study at hand, it might have been more realistic if participants had to evaluate female applicants for higher positions as a professorship. But again, professorships are rather male sex-stereotyped, what could have been counterproductive for the purpose of the current study that aimed to reveal stigmatization by quotas and not by sex-stereotypes. In addition, hiring a woman as professor might be regarded as rare event, and therefore not trigger negative stigmatization (see Kelley, 1973). However, future research should carefully choose professional positions used for experimental manipulation. Such fictive positions have to be realistic in terms of application of quotas, but also should be balanced for job related sex-stereotypes. As mentioned earlier, it also should be controlled if a certain hiring event is seen as usual or unusual.

Although many factors examined in the present study exhibit statistically significant effects on evaluation of quota beneficiaries, effects are rather small ranging from $\eta^2 = 0.05$ to $\eta^2 = 0.14$. The biggest effect is observed for perceived fairness of quotas that can explain at least 14% of the occurred variance, followed by age that explains 10% of variance. On the other hand, attitude toward quotas explains but 7% of variance and denial of discrimination against women only 6% of variance. Consequently, in each of the tested models around 90% of variance remains unexplained! Since factors that are most likely interdependent were tested in separate models it is hard to estimate, how much variance they might explain if combined in but one model. If effects of the different predictors simply could be added, a quite big deal of total variance in evaluation of quota beneficiaries would be explained. But most likely, simple addition does not suffice to describe the complex relationships between the different factors that influence perception of women benefitting from quotas. As mentioned earlier, future research needs to summarize the different factors that influence stigmatization in one model to obtain maximal power to explain variance in evaluation of women who do, and who do not benefit from quotas.

Political implications

First, it has to be emphasized that political implications based on the results of one single study that left more questions open than it managed to answer should be considered very carefully. I would even go as far and claim that at this point drawing political implications in fact is improper. Nevertheless, I will try to summarize what might be learned from the current results in regard of the application of quotas.

The most important result might be that negative stigmatization of women benefitting from quotas does not seem as certain as often proclaimed by opponents of quotas. Other than in studies conducted by Heilman and colleagues (1992; 1996; 1997; 2001), negative stigmatization of women associated with preferential selection neither occurred in the sample of undergraduate psychology students (pretest), nor among young scientists in Medicine (main study). Hence, affirmative action policies as quotas that aim to help women should not be waved aside to quickly referring to potential harm they can do to beneficiaries; actually this potential harm might not even exist in Austria.

In the current study, less favorable evaluation of women associated with quotas are not caused by the applied affirmative action plan alone; rather less favorable evaluation of all women are associated with other factors as perception of fairness of quotas, attitude toward quotas and knowledge about quotas. Consequently, instead of questioning affirmative action plans and quotas as a whole, one should try to enhance knowledge about those plans and quotas. It seems essential that employees perceive quotas as fair. To enhance perception of fairness organizations as the Medical University of Vienna should take time to educate its employees about current problems of sex-based discrimination and possible solutions to this problem. To help employees build attitudes toward quotas that are based on knowledge rather than on (false) beliefs it should be made clear what quotas do (for example encouraging women to apply) and what quotas do not (favoring women independently of their qualification). White, Charles, and Nelson (2008) emphasize the importance of persuasive arguments to influence well educated individuals' affirmative action attitude and expressed behavior. Hence, when it comes to quotas, educating employees seems a key factor in enhancing their understanding of this measure, its aims, and its potentials.

As shown in the results, justifying quotas with discrimination has a more favorable impact on evaluation of quota beneficiaries than justifying quotas with increase of women's representation. Thus, universities might want to make more use of a justification strategy that

emphasizes past and current discrimination against women, instead of only urging increase in numbers of female employees.

Another promising way to enhance understanding and support of affirmative action and quotas in employees is to include them in the process of developing and improving such measures. Hideg, Michela, and Ferris (2011) show that nonbeneficiaries of employment equity policies are more inclined to promote those measures if they participated in the development process. According to the authors, participation in policy formulation leads to a sense of psychological ownership of the policies in question.

In general, universities implementing affirmative action policies are well advised to consider scientific results and best practice examples in doing so. Furthermore, the implementation of quotas should be accompanied by repeated evaluations to observe its effects. Naturally, such evaluations should look beyond the scope of increase or decrease in numbers of females, but also consider reactions of beneficiaries and nonbeneficiaries. Positive evaluation results might serve as profound arguments in favor of the implemented measure; whereas unfavorable results might point at improvement potential of the measure in question, or of the way it is communicated to employees: “In terms of impact on opposition to A[ffirmative]A[ction]P[lan]s, organizational communication about the AAP may be as important as its structure” (Harrison et al, 2006, p. 1021).

Quotas, as controversial affirmative action measure, still receive a great deal of public attention, and although research on outcomes of quotas is scarce in Austria, possible effects are at least considered and discussed. But quotas are by far not the only measure applied to support women in academia and other professions. Despite the public focus on quotas, universities should take other measures as opportunity enhancement as serious as quotas. In the current study, beneficiaries of opportunity enhancement are evaluated less favorable than women associated with quotas. Especially women evaluate opportunity enhancement beneficiaries negatively. Of course, this is but one study, and further research has to be done on that phenomenon; Still, these findings might serve as reminder that other affirmative action plans beside quotas deserve attention, and their possible effects should be evaluated as carefully as that of quotas.

5 Conclusion

In two studies the stigma of incompetence due to women quotas as they are implemented at Austrian universities were scrutinized; several factors were considered as moderators of such stigmatization. Neither the pretest on a sample of undergraduate psychology students, nor the main study that used young scientists in medicine as a sample confirmed a stigma of incompetence assigned to women associated with quotas. Apparently, the presence of quotas alone does not suffice to induce negative stigmatization of its beneficiaries – other factors seem to be more reliable in predicting the evaluation of women associated with affirmative action, such as perceived fairness of quotas, attitude toward quotas, knowledge about quotas, denial of discrimination against women, and – interestingly – raters' age. The present study is a first look on stigmatization due to quotas, and possible factors influencing it. Thus, many questions remain unanswered, and a big deal of further research has to be done. Concrete implications for such were given, as were political implications that should be regarded carefully considering the study's limitations, as well as the fact that it is among the first of its kind in Austria. But, already in this early state of research on quotas in Austria, it can be concluded that stigmatization of beneficiaries of such policies might not be as certain a fact as it is often claimed in public debates. In a way, the existence of token women might as well be a myth.

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7 Appendix: Original study material (main study)

7.1 Employment ad

Ausschreibung:

An der Medizinischen Universität Wien ist an der Universitätsklinik für Augenheilkunde und Optometrie eine Stelle mit einem Beschäftigungsausmaß von 40 Wochenstunden mit einer Ärztin/ einem Arzt in Facharztausbildung im Sonderfach „Augenheilkunde und Optometrie“ zu besetzen.

Als eines der führenden universitären Zentren in Europa bieten wir spezielle Nachwuchsförderung in wissenschaftlicher Forschung und Lehre im Fach Augenheilkunde und Optometrie an.

Anstellungserfordernisse sind ein abgeschlossenes Medizinstudium sowie die Bereitschaft zur Mitwirkung an Forschung und Lehre.

7.1.1 Experimental manipulations

Without Quota

No further statement was added to the employment ad.

Opportunity Enhancement

Die Medizinische Universität strebt eine Erhöhung des Frauenanteils insbesondere in Leitungsfunktionen und beim wissenschaftlichen Personal an und fordert deshalb qualifizierte Frauen ausdrücklich zur Bewerbung auf.

Strong Preferential Treatment

Die Medizinische Universität strebt eine Erhöhung des Frauenanteils insbesondere in Leitungsfunktionen und beim wissenschaftlichen Personal an und fordert deshalb qualifizierte Frauen ausdrücklich zur Bewerbung auf. Frauen werden bei gleicher Qualifikation vorrangig aufgenommen bis eine Quote von 40% erreicht ist.

Super Strong Preferential Treatment

Die Medizinische Universität strebt eine Erhöhung des Frauenanteils insbesondere in Leitungsfunktionen und beim wissenschaftlichen Personal an und fordert deshalb Frauen ausdrücklich zur Bewerbung auf. Frauen werden vorrangig aufgenommen bis eine Quote von 40% erreicht ist.

7.1.2 Introduction of the applicant Martina Staller

Die ausgeschriebene Stelle wurde mit der Bewerberin **Martina Staller** besetzt. Martina Staller ist 27 Jahre alt und hat ihr Medizinstudium (Sonderfach Augenheilkunde und Optometrie) kürzlich abgeschlossen.

Ausbildung:

Oktober 2006 – März 2012: Studium der Humanmedizin an der Medizinischen Universität Wien

Juni 2006: Matura

Auslandserfahrung

September 2010 - Januar 2011: Erasmus-Aufenthalt an der University of Liverpool

Sprachkenntnisse

deutsch (Muttersprache)

englisch (fließend)

7.2 Questionnaire

7.2.1 Perceived competence

(Based on Heilman et al, 1992; Resendez, 2002)

Beantworten Sie bitte folgende Fragen zu der Bewerberin Martina Staller. Antworten Sie spontan und ohne lange zu überlegen. Es gibt keine richtigen und falschen Antworten.

	gar nicht					sehr
	1	2	3	4	5	6
Wie kompetent wird die Bewerberin die Arbeit an der ausgeschriebenen Stelle erledigen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wie effektiv wird die Bewerberin die Arbeit an der ausgeschriebenden Stelle erledigen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7.2.2 Ego- and team-oriented soft skills

(Based on Heilman et al, 1992; Resendez, 2002)

Es werden Ihnen nun mehrere Begriffe gezeigt, anhand derer Sie die Bewerberin Martina Staller beschreiben können. Kreuzen Sie jenen Wert an, der Ihrer Meinung nach am ehesten zutrifft. Antworten Sie spontan. Es gibt keine richtigen und falschen Antworten.

	1	2	3	4	5	6	
faul	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	fleißig
gibt schnell auf	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	hartnäckig
aktiv*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	passiv
verantwortungsvoll*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	verantwortungslos
schwach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	stark
hilfsberei*t	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	nicht hilfsbereit
schüchtern	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	energisch
kooperativ*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	unkooperativ
träge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	tatkräftig
vertrauenswürdig*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	nicht vertrauenswürdig
weich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	hart
gute Kollegin*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	schlechte Kollegin

* inverted

7.2.3 Extent of qualification in hiring

(Based on Heilman et al, 1992; Resendez, 2002)

Bitte beantworten Sie folgende Frage, indem Sie den Schieberegler in die von Ihnen gewünschte Position bringen.

	0%	100%
Zu welchem Ausmaß wurde die Bewerberin auf Grundlage ihrer Qualifikation eingestellt?		

7.2.4 Competition Pressure

Auf den folgenden Seiten geht es um *Ihre* Meinungen und Einschätzungen. Es gibt keine falschen Antworten

	gar nicht					sehr
	1	2	3	4	5	6
Empfinden Sie Konkurrenzdruck in Ihrem Arbeitsumfeld?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7.2.5 Attitude toward quotas

Bitte geben Sie an, für wie wahrscheinlich Sie das Eintreten der Ereignisse in den folgenden Aussagen halten.

(1 = gar nicht wahrscheinlich; 6 = sehr wahrscheinlich)

	gar nicht wahrscheinlich			Sehr wahrscheinlich		
	1	2	3	4	5	6
Durch die Quotenregelung werden die Jobchancen für Frauen erhöht.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quotenregelung trägt dazu bei, dass Diskriminierung gegen Frauen abgebaut wird.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quotenregelung hilft Chancengleichheit zwischen den Geschlechtern herzustellen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quotenregelung diskriminiert Männer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quotenregelung führt vor allem in höheren Positionen zu einer Erhöhung des Frauenanteils.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quoteregelung fördert Innovation und Vielfalt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quotenregelung führt zu einer Stigmatisierung von Frauen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quotenregelung ermutigt Frauen, sich zu bewerben.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quotenregelung führt dazu, dass weniger gut qualifizierte Frauen eingestellt werden.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Bitte *bewerten* Sie das Eintreten der Ereignisse. Es gibt keine richtigen oder falschen Antworten; ihre Meinung zählt.

(1 = sehr negativ; 6 = sehr positiv)

	sehr negativ				sehr positiv	
	-3	-2	-1	1	2	3
Durch die Quotenregelung werden die Jobchancen für Frauen erhöht.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quotenregelung trägt dazu bei, dass Diskriminierung gegen Frauen abgebaut wird.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quotenregelung hilft Chancengleichheit zwischen den Geschlechtern herzustellen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quotenregelung diskriminiert Männer.*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quotenregelung führt vor allem in höheren Positionen zu einer Erhöhung des Frauenanteils.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quoteregelung fördert Innovation und Vielfalt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quotenregelung führt zu einer Stigmatisierung von Frauen.*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quotenregelung ermutigt Frauen, sich zu bewerben.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Quotenregelung führt dazu, dass weniger gut qualifizierte Frauen eingestellt werden.*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* inversed

7.2.6 Knowledge about quotas

Denken Sie, dass die folgenden Aussagen auf die Meduni Wien zutreffen?

Die Meduni Wien ermuntert qualifizierte Frauen, sich zu bewerben.

- Ja.
- Eher ja.
- Eher nein.
- Nein.
- Ich weiß nicht.

Die Meduni Wien zieht Frauen als Bewerberinnen vor, selbst wenn diese weniger gut qualifiziert sind.

- Ja.
- Eher ja.
- Eher nein.
- Nein.
- Ich weiß nicht.

Die Meduni Wien zieht Frauen nur dann vor, wenn diese mindestens gleich gut qualifiziert sind wie der beste männliche Bewerber.

- Ja.
- Eher ja.
- Eher nein.
- Nein.
- Ich weiß nicht.

7.2.7 Denial of discrimination against women

(Eckes & Six-Materna, 1998; English from Swim et al., 1995)

Bitte geben Sie an, inwiefern Sie folgenden Aussagen zustimmen.

	trifft gar nicht zu		3	4	trifft voll und ganz zu	
	1	2			5	6
Frauen und Männer haben in der heutigen Gesellschaft die gleichen Chancen etwas zu erreichen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diskriminierung von Frauen ist in Österreich immer noch ein Problem.*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Forderungen von Frauen nach Gleichberechtigung sind leicht nachzuvollziehen.*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wenn Frauen tatsächlich einmal schlechter bezahlt werden als Männer, dann nur deshalb, weil sie einfachere Arbeit zu leisten haben.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heutzutage werden Frauen im Berufsleben fair behandelt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In den westlichen Ländern ist Gleichberechtigung von Frauen schon lange verwirklicht.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frauen finden häufig keine gut bezahlte Arbeit, weil sie diskriminiert werden.*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* inversed

7.2.8 Justification strategies

Item 1 and 3 measure justification with discrimination and item 2 and 4 measure justification with increase in representation.

Bitte geben Sie an, inwiefern Sie folgenden Aussagen zustimmen.

	trifft gar nicht zu		3	4	trifft voll und ganz zu	
	1	2			5	6
Mit der Quotenregelung wird noch immer bestehende Diskriminierung gegen Frauen ausgeglichen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mit der Quotenregelung wird der Anteil von Frauen in leitenden Positionen erhöht.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mit der Quotenregelung wird vergangene Diskriminierung gegen Frauen ausgeglichen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mit der Quotenregelung wird der Anteil von Frauen in Bereichen, in denen sie unterrepräsentiert sind, erhöht.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7.2.9 Perceived fairness

	gar nicht gerecht		3	4	5	sehr gerecht	
	1	2				6	7
Als wie gerecht empfinden Sie die Quotenregelung an der Medizinischen Universität Wien?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7.2.10 Social dominance orientation

(Pratto et al., 1994 - short version; own translation)

Bitte bewerten Sie folgende Aussagen. Es gibt keine richtigen und falschen Aussagen. Entscheidend ist *Ihre Meinung!*

	sehr negativ		3	4	5	sehr positiv	
	1	2				6	7
Manche Gruppen sind anderen Gruppen einfach überlegen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Es ist ok, dass manche Gruppen bessere Chancen im Leben haben als andere.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manchmal kann man im Leben nur auf Kosten anderer Gruppen weiterkommen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unterlegene Gruppen sollten ihre Grenzen kennen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gleichheit zwischen Gruppen sollte unser Ideal sein.*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wir sollten tun was wie können, damit alle Gruppen die gleichen Chancen haben.*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Soziale Gleichheit sollte erhöht werden.*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wir hätten weniger Probleme, wenn wir alle Menschen gleich behandeln würden.*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* inversed

7.2.11 Manipulation check: Sex-stereotype of ophthalmology

	weiblich					männlich	
	1	2	3	4	5	6	7
Ich empfinde das Fach Augenheilkunde und Optometrie eher als:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7.2.12 Demographics: Gender, age, professional position

Zuletzt darf ich Sie um Angaben zu Ihrer Person bitten:

Geschlecht

- weiblich
- männlich

Alter

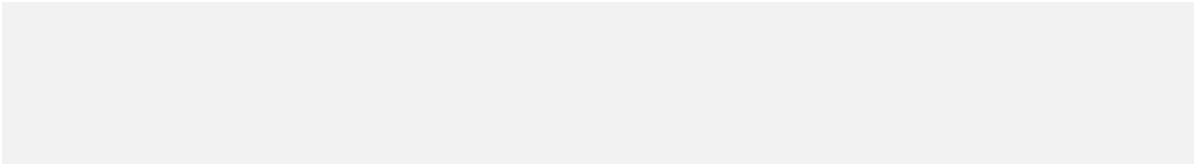
- bis 20
- 21 bis 25
- 26 bis 30
- 31 bis 35
- 36 bis 40
- 41 bis 45
- 46 bis 50
- 51 bis 55
- 56 bis 60
- über 60

Derzeitige berufliche Position

- Arzt/ Ärztin in Facharztausbildung
- im PhD-Studium
- post-doc

7.2.13 Open comments

Anmerkungen und Kommentare:



8 Abstract English

The research reported in this diploma thesis studies the stigma of incompetence which is – considering Kelley’s (1973) attribution theory – assigned to women benefitting from quotas at Austrian universities. The pretest was conducted on a sample of undergraduate psychology students to get a first insight in stigmatizing effects, and to develop a questionnaire on attitude toward quotas. The main study, which used young scientists at the Medical University of Vienna as a sample, aimed to reveal if stigmatization of women due to association with quotas occurs; furthermore, it scrutinized several factors that were hypothesized to moderate stigmatizing effects. Neither pretest, nor main study confirms that women associated with quotas suffer from a stigma of incompetence. Negative stigmatization is not induced solely based on the application of quotas; other factors seem to be more important in predicting evaluation of female quota beneficiaries, such as perception of fairness, attitude toward and knowledge about quotas, denial of discrimination, and – interestingly – raters’ age. The present study is but a first look at stigmatization due to quotas, and among the first of its kind in Austria; therefore a lot of questions remain unanswered, and a lot more research has to be done. Concrete implications for such are given with the goal to further pursue understanding of quotas and their consequences.

9 Abstract German

Die vorliegende Diplomarbeit widmet sich dem Stigma der Inkompetenz, das – attributionstheoretischen Überlegungen (Kelley, 1973) zu Folge – Frauen anhaftet, die mit der Quotenregelung an österreichischen Universitäten in Verbindung gebracht werden. Im Rahmen des Vortests, der mit Psychologiestudent/innen der Universität Wien durchgeführt wurde, wurden erste Erkenntnisse zu derartigen Stigmatisierungseffekten gewonnen, sowie ein Fragebogen zur Erfassung der Einstellung zur Quotenregelung konstruiert. Die Hauptstudie, die Nachwuchswissenschaftler/innen der Medizinischen Universität Wien als Stichprobe heranzog, untersuchte, ob Stigmatisierungseffekte im Zusammenhang mit der Quotenregelung auftreten. Zudem wurden mehrere Variablen, von denen ein moderierender Einfluss auf Stigmatisierungseffekte angenommen wurde, betrachtet. Weder die Ergebnisse des Vortests noch jene der Hauptstudie bestätigen das vorhergesagte Stigma der Inkompetenz für Frauen, die mit der Quotenregelung in Verbindung gebracht werden. Anderen Faktoren scheinen bei der Bewertung von Profiteurinnen der Quotenregelung von größerer Bedeutung zu sein: zum Beispiel die wahrgenommenen Fairness von Quoten, die Einstellung zu und das Wissen über Quoten, Verleugung bestehender sexistischer Diskriminierung und – überraschenderweise – das Alter der Urteiler/innen. Die vorliegende Arbeit ist eine der Ersten, die sich in Österreich mit dem Thema der Stigmatisierung durch Quotenregelungen befasst; sie ist daher als erster Überblick zum Thema zu begreifen. Viele Fragen bleiben derzeit offen und Forschung zum Thema Quotenregelung und ihren möglichen Konsequenzen ist dringend erforderlich. Im Laufe der Arbeit werden daher konkrete Implikationen für zukünftige Forschung formuliert.

10 Curriculum Vitae

Miriam Katharina Zehnter

Born July 3, 1985

In Oberndorf bei Salzburg (Austria)

Academic Education

January to June 2011	Washington and Jefferson College (USA)
	Joint Studies in Psychology, Philosophy of Mind, and American Literature
March 2007 to present	University of Vienna (Austria)
	Diploma-Studies in Psychology
October 2005 to June 2007	Ludwig-Maximilian-University Munich (Germany)
	Magister-Studies in French, German Literature and Psychology
September 1996 to June 2005	Karls gymnasium Bad Reichenhall (Germany)
	Graduation in English, French, Biology, and Catholic Theology

Professional development

October 2011 to present	Medical University of Vienna; Department of Staff Development – staff developer
August to September 2011	Medical University of Vienna; Department of Staff Development – student apprentice
December 2007 to January 2011	Grünalternative Jugend Wien – administrator
September 2003 to October 2005	Studienkreis Freilassing (Germany) – teacher
1999 to 2003	Different jobs alongside school

Professional education

Conferences (attended)

October 18, 2012	Diversity in research, teaching, and patient care at the Medical University of Vienna (Vienna; Austria)
August, 26 to 30, 2012	AMEE 2012: The Continuum of Education in Medicine and the Healthcare Professions (Lyon, France)
March 7 to 8, 2012	Dortmund Spring School for Academic Staff Developers (Dortmund; Germany)

January 31, 2012 Social Skills – Factors of Success at Universities (Vienna, Austria)
October 17, 2012 How are Quotas introduced at Universities? (Vienna, Austria)

Workshops (attended)

July, 2, 2012 Current trends and future directions in Medical Education (Vienna, Austria)

May, 15 to 16, 2012 Managing Evaluations (Krems; Austria)

November 28, 2011 Gender Competence (Vienna, Austria)

September 5 to 6, 2011 Medical Education at the Medical University of Vienna (Vienna, Austria)

Prior Research Experience

November 2008 to Co-authorship in a study of motor learning
January 2009 Dirnberger G., Novak J., Nasel, C. and Zehnter M. (2010).
Separation of motor-coordinative and motor-executive dysfunction
in cerebellar disease. *Neuropsychologica* 48; 1200-1208.

Languages

German (native speaker)	Spanish (basics)
English (advanced)	Hebrew (basics)
French (advanced)	