



UNIVERSIDADE FEDERAL DA PARAÍBA  
CENTRO DE CIÊNCIAS HUMANAS, LETRAS E ARTES  
DEPARTAMENTO DE PSICOLOGIA  
PROGRAMA DE PÓS-GRADUAÇÃO EM PSICOLOGIA SOCIAL  
MESTRADO EM PSICOLOGIA SOCIAL

**LEGITIMIZING ROLE OF THE CONTENT OF STEREOTYPES IN THE GENDER  
PAY GAP**

ANA KAROLYNE FLORENCIO AMORIM

**João Pessoa – PB  
Março de 2020**



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**O PAPEL LEGITIMADOR DO CONTEÚDO DOS ESTEREÓTIPOS NO  
ENVIESAMENTO SALARIAL DE GÊNERO**

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Dissertação submetida ao Programa de Pós-Graduação em Psicologia Social (Mestrado), da Universidade Federal da Paraíba, como requisito final para a obtenção do grau de *Mestre* em Psicologia Social.

**João Pessoa, Março de 2020**

**Catálogo na publicação**  
**Seção de Catalogação e Classificação**

A524l Amorim, Ana Karolyne Florencio.

Legitimizing Role of the Content of Stereotypes in the  
Gender Pay Gap / Ana Karolyne Florencio Amorim. - João  
Pessoa, 2020.

76 f. : il.

Orientação: Cicero Roberto Pereira.

Dissertação (Mestrado) - UFPB/CCHLA.

1. Justified discrimination. 2. Sexism. 3. Gender pay  
gap. 4. Legitimization. I. Pereira, Cicero Roberto. II.  
Título.

UFPB/CCHLA

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João Pessoa, Março de 2020

*Às mulheres da minha família*

*“Dizem as paredes/3*

*Em Montevideu, no bairro Braço Oriental: Estamos aqui sentados, vendo  
como matam os nossos sonhos. E, no cais na frente do porto de Buceo, em  
Montevideu: Bagre velho: não se pode viver com medo a vida inteira. Em letras  
vermelhas, ao longo de um quarteirão inteiro da avenida Cólón, em Quito:  
E se nos juntarmos para dar um chute nesta grande bolha cinzenta?”*

*Eduardo Galeano*

## AGRADECIMENTOS

Eu sempre quis ser cientista. Quando criança, imaginava que ser cientista seria criar algo em um laboratório e me divertia com essa imaginação. Fui crescendo e percebendo, através de leituras, que a imaginação e a criatividade são uns dos principais elementos para se fazer ciência. Esse tempo no mestrado me proporcionou um imenso aprendizado sobre ser pesquisadora, cientista e porque não, ser uma pessoa, já que não se trata puramente de pesquisa. Com certeza, não aprendi sozinha e devo alguns agradecimentos especiais.

Inicialmente, agradeço ao meu querido orientador, *Prof. Dr. Cicero Roberto Pereira*, a quem eu tenho grande admiração e que me acolheu desde o início, demonstrando acreditar em mim. Toda sua paciência e seus ensinamentos foram imprecindíveis para que eu pudesse percorrer todo esse caminho. Além de exemplo de cientista e professor, é um exemplo de pessoa que quero ser quando crescer.

Agradeço à *Profa. Dra. Ana Raquel Rosas Torres* por ter colaborado com este trabalho ainda em seu andamento, sendo uma honra receber suas contribuições.

À *Profa. Dra. Elza Maria Techio*, meus agradecimentos por se disponibilizar a ler e colaborar com meu trabalho.

Aos membros do *Grupo de Pesquisa em Comportamento Político (GPCP)*, pelo acolhimento, e os momentos de amizade, companheirismo, aprendizagem, como também pelo auxílio no desenvolvimento deste trabalho.

Às mulheres da minha vida, minha mãe, *Maria*, que me criou, me educou e apoiou em absolutamente tudo que quis fazer na minha vida independente das circunstâncias. À minha irmã, *Carla*, por ter me incentivado à começar esse sonho e por ser um dos maiores exemplos de mulher e pessoa pra mim. À elas devo o orgulho de ter em minha vida mulheres sertanejas tão fortes.



Ao meu pai, *Teófilo*, um professor que me fez querer ser professora e me ensinou fora e dentro de salas de aula.

Aos meus amigos que me acolheram em todos os momentos, sendo fáceis ou difíceis, e sem eles tenho certeza que eu não teria chegado aqui.

À todos os professores que me fizeram gostar de pesquisa ou simplesmente gostar de aprender e a ser curiosa.

Aos meus orixás, que estão além do meu âmbito de compreensão, mas sempre comigo.

Finalmente, à CAPES, por ter financiado essa pesquisa, mesmo que atualmente pareça querer matar nossos sonhos. Não importa, avante!

# **LEGITIMIZING ROLE OF THE CONTENT OF STEREOTYPES IN THE GENDER PAY GAP**

## **ABSTRACT**

Discrimination against women is widespread in contemporary societies, and unequal pay for the performance of the same functions suggests that this bias is socially accepted. We addressed the proposed problem that people spontaneously use gender stereotypes in a way that reinforces their motivation to reaffirm gender pay gaps. In Study 1 ( $N = 96$ ), we showed that the simple act of justifying hiring favors the gender pay gap. In Study 2 ( $N = 298$ ), we showed that this difference is mediated by the greater evocation of competence traits to justify hiring a male candidate. Study 3 ( $N = 382$ ) revealed that the gender pay gap is moderated by a position in which the female candidate receives a higher salary when applying for a stereotypically masculine position. Study 4 ( $N = 303$ ) confirmed this finding after the manipulation of stereotypic content associated with male and female candidates. In the discussion, we addressed the central role of the content of gender stereotypes as a justification for the gender pay gap and as a possible source for reversing the direction of this gap.

**Keywords:** justified discrimination, sexism, gender pay gap, legitimization.

## **O PAPEL LEGITIMADOR DO CONTEÚDO DOS ESTEREÓTIPOS NO ENVIESAMENTO SALARIAL DE GÊNERO**

### **RESUMO**

A discriminação contra as mulheres está amplamente difundida nas sociedades contemporâneas, onde o pagamento desigual pelas mesmas funções desempenhadas sugere ser esse enviesadamente socialmente aceito. Abordamos esse problema proposto que as pessoas usam espontaneamente o conteúdo dos estereótipos de gênero de uma forma que reforça a sua motivação para reafirmar as diferenças salariais de gênero. No Estudo 1 (N = 96), mostramos que o simples ato de justificar a contratação favorece a diferença salarial de gênero. O Estudo 2 (N = 298) mostrou que essa diferença é mediada pela maior evocação de traços de competência para justificar a contratação de um candidato homem. O Estudo 3 (N = 382) revelou que a diferença salarial de gênero é moderada pelo tipo de cargo, onde a candidata mulher recebeu salário mais elevado em um cargo masculino. O Estudo 4 (N = 303) confirmou esse feito após manipularmos o conteúdo estereotípico associado a candidatos homem e mulher. Na discussão abordamos o papel central do conteúdo dos estereótipos de gênero como justificação para o “gender pay gap” e como possível fonte de inversão da direção desse “gap”.

**Palavras-chaves:** discriminação justificada, sexismo, “gender pay gap”; legitimação.

## SUMMARY

|                                |           |
|--------------------------------|-----------|
| <b>Introduction</b>            |           |
| .....                          | <b>14</b> |
| <b>Overview of the Studies</b> |           |
| .....                          | <b>17</b> |
| <b>Study 1</b>                 |           |
| .....                          | <b>18</b> |
| Method.....                    | 19        |
| Results.....                   | 21        |
| Discussion.....                | 23        |
| <b>Study 2</b>                 |           |
| .....                          | <b>24</b> |
| Method.....                    | 25        |
| Results.....                   | 27        |
| Discussion.....                | 30        |
| <b>Study 3</b>                 |           |
| .....                          | <b>31</b> |
| Method.....                    | 33        |
| Results.....                   | 34        |
| Discussion.....                | 36        |
| <b>Study 4</b>                 |           |
| .....                          | <b>38</b> |
| Method.....                    | 39        |
| Results.....                   | 40        |
| Discussion.....                | 43        |
| <b>General Discussion</b>      |           |
| .....                          | <b>44</b> |
| <b>References.....</b>         | <b>48</b> |
| <b>Appendix.....</b>           | <b>54</b> |

## LIST OF TABLES

**Table 1.** Means and standard deviations (in parentheses) for the evocation of traits by gender, trait type, and valence

..... 29

**Table 2.** Means and standard errors of the salary estimates regarding position type, absence or presence of justifications, and candidate gender

.....35

## LIST OF FIGURES

|                                                                                                                             |    |
|-----------------------------------------------------------------------------------------------------------------------------|----|
| <b>Figure 1.</b> Salary estimate as a function of candidate gender and justifications                                       | 22 |
| <b>Figure 2.</b> Salary estimate as a function of candidate gender and justifications                                       | 28 |
| <b>Figure 3.</b> Relationship between candidate gender and attributed salary, mediated by positive competence traits        | 30 |
| <b>Figure 4.</b> Mean salary attributed with regard to competence, sociability, and justifications                          | 41 |
| <b>Figure 5.</b> Mean of the salary attributed to the candidates with regard to sociability, competence, and justifications | 43 |

## **Legitimizing Role of the Content of Stereotypes in the Gender Pay Gap**

Discrimination against women is widespread in contemporary societies. For example, even in consolidated Western democracies, only 18% of ministers and 24% of parliamentarians are women, and women occupy only 34% of managerial positions (World Economic Forum, 2018). Additionally, women are more likely to hold informal jobs with limited access to social protection, and they earn 20% less than men, even when they have the same or better qualifications (Organización Internacional del Trabajo, 2018). In fact, unequal pay for the same work function is still a strong indicator of gender discrimination. Recent studies point to the existence of what is called the gender wage gap (Auspurg, Hinz & Sauer, 2017; Beyer, 2016; Blau & Kahn, 2017; Bishu & Alkadry, 2016; Connor & Fiske, 2018; Kilgour, 2013; Matteazzi, Pailhé & Solaz, 2017; Piff, Kraus & Keltner, 2018), a term used to describe the unequal pay between genders. The presence of this disparity is openly tolerated, which suggests that gender discrimination is a descriptive social norm that defies the normative codes written into laws that prohibit the open expression of prejudice, as has recently been shown (e.g., Verniers & Vala, 2018). At least two factors are symptomatic of gender disparity in the workplace: intraoccupational discrimination and occupational segregation.

The first factor corresponds to paying women less to perform the same function as men (Araújo & Ribeiro, 2002). The second factor occurs because women are outnumbered in the highest paid positions. Both factors may be closely linked to stereotypes related to the positions that each gender can occupy and in which they can perform best. Thus, managers discriminate against women because they are subject to social stereotypes that associate women more with traits of sociability and less with those of competence (Cuddy, Glick & Beninger, 2011). The perception of women as less competent than men leads managers to assign them to typically feminine positions focused on care and sociability (Glick, 1991) or to positions that are considered neutral (Glick, Zick & Nelson, 1988). However, when filling positions that are

considered masculine and have higher prestige and higher salary expectations (Hogue, DuBois & Lee Fox-Cardamone, 2010), such as technology-oriented (Braun & Turner, 2014; Viana, 2016) or managerial (Glick, 1991; Glick et al, 1988) positions, managers assign them to men because they infer that men are endowed with greater reliability, assertiveness, and intelligence. This phenomenon suggests that competence traits and sociability can be used by decision makers to legitimize gender disparities in the workplace.

The first question we ask here is whether people possess some motivation that causes them to favor men, especially in terms of pay differences between men and women, even in a social environment where the discourse of equality and nonprejudice against social minorities is promoted. In other words, do people spontaneously value men more than women by giving men higher incomes, even in the absence of objective criteria that indicate that the men are more qualified? The second question we ask is whether people spontaneously perceive men as more competent than women. Finally, the third question is whether this perception of competence is actually associated with people's motivation to attribute higher incomes to men. Our main hypothesis predicts that if the content of the stereotypes functions as a justifying factor for gender disparities, then the evocation of these stereotypes should mediate the gender differences in the incomes of men and women. In other words, decision makers are spontaneously motivated to allocate higher incomes to men than to women because this difference is legitimized by the content of stereotypes that they associate with men and women.

### *Legitimization of Gender Inequalities*

In western democratic societies, discriminatory behaviors need to be justified in order to be perceived as fair, legitimate, and necessary (e.g., Costa-Lopes, Dovidio, Pereira & Jost, 2013; Jost, 2019). People can justify unequal pay for women through the use of motherhood myths. For example, based on the Justified Discrimination Model (Pereira, Costa-Lopes & Vala, 2010; Pereira, Álvaro & Vala, 2018), Verniers and Vala (2018) investigated how



motherhood myths (i.e., beliefs that it is a woman's natural destiny to be a mother and that childcare is her duty) legitimize and mediate the relationship between sexism and gender discrimination and thus are used to justify discrimination against women in relation to their professional careers.

The attribution of the inequality in income between genders to gender roles allows sexist individuals to explain this phenomenon without appearing sexist (e.g., Connor & Fiske, 2018). For example, Glick et al. (1988) manipulated the genders of would-be candidates for positions considered to be typically male, typically neutral, and typically female, by associating the personal characteristics of the candidates in order to match or not match the genders. The results showed a greater preference for candidates whose personal characteristics corresponded to the stereotype of the position. They also showed that the characteristics perceived in the candidates for the job could mediate gender discrimination and that characteristics that are considered “male” are preferred over “female” characteristics.

In another study (also in a hiring context), González, Cortina, and Rodrigues (2019) manipulated the résumés of men and women so that they differed only in relation to the qualifications and whether the candidate had children. The results showed that the women were discriminated against when they were mothers, but this bias was reduced when they were highly qualified and childless, thus demonstrating that the discrimination was motivated by the perception of gender stereotypes. With the same objective of discovering whether professional mothers experience more discrimination than childless professional women or professional men with or without children, Cuddy, Fiske & Glick (2004) observed that women with children were perceived as less competent. This once again indicates how stereotypes can be used to legitimize discrimination against women in employment contexts.

Indeed, research in this area has shown that when the job in question is typically masculine, men are selected more for the work and receive more rewards (Davison & Burke,

2000; Koch, D'Mello & Sackett, 2015), just as women are preferred for typically female positions. However, there is also evidence that, in hiring scenarios, women may be better assessed, especially when they are shown to be more competent (Davison & Burke, 2000; Foschi & Valenzuela 2012; Olman, Schwab & Haberfeld, 1988) or as a counterstereotypic model (Rice & Barth, 2016). In this regard, emphasizing a woman's competence may improve the evaluator's perception of her, but there is still a tendency to match the position with the gender of the candidate in question (Glick, 1991). A more plausible explanation for the role of the perception of competence and sociability in gender disparities in the workplace context is that the content of these stereotypes serves as a contextual justification for giving preference to men. In other words, people may think that their greater appreciation for a man is not motivated by sexism but rather by their belief that in a specific situation, the man was more competent; that is, decision makers can justify their choice by denying being sexist when acting in a way that deliberately favors men. They justify their preference with the argument that men are more competent at performing certain tasks, while women are better at other tasks.

### *Overview of the Studies*

Here, we present the results of a research program with the aim of showing the role that justifications based on gender stereotypes have on people's motivation to attribute higher incomes to men than to women. Using the pay gap as an indicator of gender discrimination, we anticipated that justifications for discrimination would act as the mechanism through which people discriminate against women in a context of hiring for a position in a company. Additionally, we tested the hypothesis that people spontaneously evoke stereotypes of competence and sociability and that these function as justifying factors that promote the gender pay gap. Thus, we analyzed the following: whether the simple fact of justifying the hiring of a male (vs. female) candidate is sufficient to favor that candidate (Study 1); whether the stereotypic content that was evoked spontaneously in the justifications (i.e., sociability and

competence) mediates the pay gap (Study 2); whether the type of position (stereotypically male vs. neutral) moderates the pay gap (Study 3); and whether the experimentally manipulated stereotypic content (competence vs. sociability) provides the direction of this bias, to nullify or alter the gender pay gap in order to favor women (Study 4).

### *Study 1*

The aim of this study was to test the hypothesis that people act in ways that reaffirm the gender pay gap when given the opportunity to justify their decisions in a male vs. female hiring scenario for a job. We used the experimental paradigm developed by Goldberg (1968), which is renowned for offering the opportunity to measure discrimination and manipulate gender without participants realizing the objective of the measure (Eagly & Madlinic, 1994). We produced two résumés (see Appendices I) that had purportedly been submitted for a position that was not considered stereotypically male or female; for example, the position of administrative assistant (Glick et al., 1988). The résumés were exactly the same, differing only in terms of the candidate's gender, which we manipulated by changing each candidate's first and middle names. The participants' task was to evaluate each application and provide salary estimates for each candidate. Half of the participants had the opportunity to justify their decisions, while the other half did not.

Knowing that justifications can be used to discriminate against women (Verniers & Vala, 2018), it was expected that the participants who could justify their decisions would attribute higher salaries to the male candidate than to the female one (e.g., Beyer, 2016; Hogue et al., 2010), given that people are motivated to discriminate against women even in positions considered to be neutral (that is, those that are stereotypical of neither men nor women) (Glick et al., 1988; Glick, 1991). The justifications, in turn, will be related to stereotypes of competence and sociability, given that these stereotypes play an important role in evaluating individuals in organizational contexts (Cuddy et al., 2011). According to our reasoning, if

individuals provide explanations that justify their discriminatory behavior, as predicted by the Justified Discrimination Model (Pereira, Vala & Costa-Lopes, 2010; Verniers & Vala, 2018), it is very likely that the simple act of justifying motivates them to act in ways that attribute higher salaries to men than to women. Additionally, we anticipated that the content of the justifications could be classified in terms of stereotypic competence traits and sociability in which the male candidate is evaluated more in terms of competence and the female candidate is evaluated more in terms of sociability.

### *Method*

*Participants and design.* We defined sample size based on a priori 80% power analyses. At least 90 participants were needed for a detectable middle effect or higher ( $d = .60$ , with  $p = .05$  and power = .80). Accordingly, ninety-six university students (44 men and 52 women) between 17 and 39 years of age ( $M = 23.1$ ,  $SD = 4.03$ ) participated in the study. We randomly allocated the participants to one of four conditions in a 2 (candidate gender: female vs male) x 2 (justification condition: justification vs nonjustification) factorial design, with the factors varying among individuals.

*Context for observing the discrimination.* The study was operationalized on the Qualtrics online platform (2002) and began with a page presenting the informed consent with basic information about the study. After the participants' consent was obtained, the next page stated that the main objective of the study was to obtain their opinions regarding the process of selecting a person for a position. They were then presented the context for observing the discrimination, which addressed a situation in which the participant needed to help a manager from the human resources department to evaluate a candidate for the position of administrative assistant, a profession considered neither stereotypically male nor stereotypically female (Glick et al., 1988). Specifically, the participants read the following text:

“This study is part of a research program to assist human resources managers in the decision-making process. In the questionnaire to be answered, the manager needs to evaluate different people's résumés to ascertain the extent to which each person meets the qualifications required for the position. Your task will be to help the manager make a decision. Below, you will find a résumé and questions about it. Remember: the manager needs your help. Answer as accurately as possible.”

After this, the software randomized the conditions to which the participant would respond, which changed only in terms of the gender of the candidate whose résumé was presented and the absence or presence of justifications.

*Manipulation of the candidate's gender.* To manipulate the candidate's gender, we prepared résumés for a candidate applying for an administrative assistant position, changing only the candidate's name (Maria Cecília Bastos for the female version and José Henrique Bastos for the male version). The information on academic background, work experience, and number of languages in which the candidate was fluent was the same in both résumés.

*Manipulation of the justification.* For the condition in which the participants could provide their justification for hiring the candidate, the participants were asked to answer the following questions: “What positive qualities should this person have in order to be hired?” and “What negative qualities should this person not have in order to be hired?” Our idea was that the act of writing out the candidates' qualities would allow the participants to prepare justifications that favored or disadvantaged the candidates. For the condition without justifications, the participants did not provide their justifications and moved directly to the measurements of the dependent variables.

*Measurements.* In all of the situations, the participants answered some questions unrelated to salary regarding the candidate (“If you were the manager, how likely would you be to hire this person?”; “If you were the person responsible for defending this person's hiring

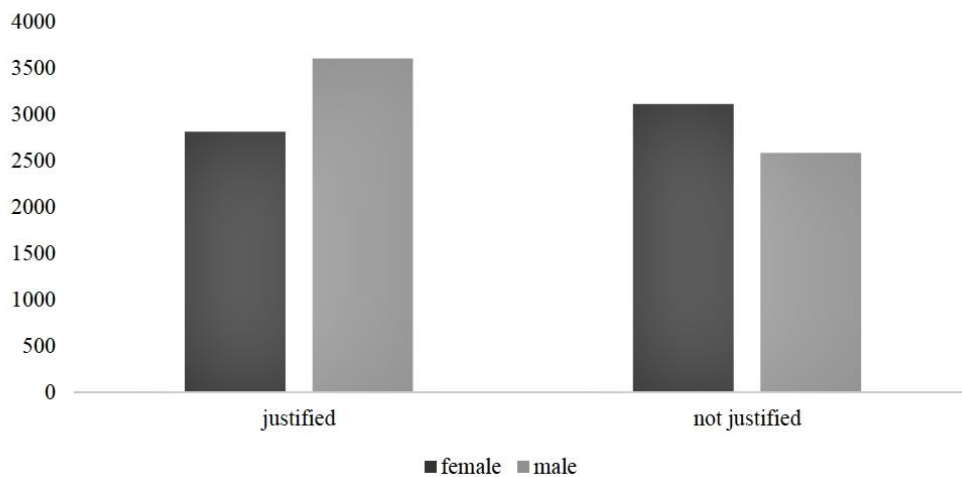
in an open selection process for the company, how much would you agree or disagree with the hiring?"; "How much do you agree or disagree that this person has the ability to perform in the position they are seeking?"; "How much do you agree or disagree that hiring this person is the right decision to make?"). We then measured our dependent variable by asking the participants to indicate how much the candidate should earn if he or she were hired. Specifically, the participants indicated an estimated salary for the candidate in reais (\$R). Finally, the participants answered a question to verify the manipulation ("What is the candidate's gender?"); all participants correctly indicated the candidate's gender.

*Ethical Considerations.* The studies followed ethical principles, being approved by the Ethics Committee (CAEE: 94619018.4.0000.5188), maintaining the anonymity of the participants and informed consent.

### *Results*

To test our hypothesis that the opportunity to justify the hiring would serve to discriminate the candidates in terms of their estimated salaries, a 2 (female candidate vs. male candidate) x 2 (justification vs. nonjustification) ANOVA was performed, with salary as the dependent variable between individuals. The results indicated that neither the principal effect of the candidate's gender ( $F(1, 94) = .17, p = .67, \eta_p^2 = .02$ ) nor the justifications were significant ( $F(1,94) = 1.31, p = .25, \eta_p^2 = .014$ ). However, and most importantly for our hypothesis, we obtained a significant interaction between the candidate's gender and the justification ( $F(1, 94) = 4.37, p < .05, \eta_p^2 = .046$ ). Multiple comparisons indicated that when the candidate was male, the participants who could justify their decisions provided a higher salary estimate ( $M = 3606.80, SD = 2104.50$ ) than the participants who could not justify their decisions ( $M = 2585.40, SD = 1097.00$ ) ( $b = 1021.43; SE = 469.59, p = .03, d = .45$ ). When the candidate was female, the difference in the means between the justification ( $M = 2815.22, SD = 1632.86$ ) and nonjustification conditions ( $M = 3112.60, SD = 1165.51$ ) was not significant ( $b$

= 297.38; SE = 421.72,  $p = .48$ ,  $d = -0.14$ ). Analyzing the interaction from another perspective, a marginally significant salary difference was observed in relation to the candidate's gender and to the act of justification because when the participants could justify the hiring, they attributed a higher salary to the male candidate ( $M = 3606.86$ ,  $SD = 2104.57$ ) than the female candidate ( $M = 2815.22$ ,  $SD = 1632.86$ ) ( $b = 791.64$ ;  $SE = 459.27$ ,  $p = .08$ ,  $d = .35$ ). When the participants did not have the opportunity to justify the hiring, the difference in the remuneration awarded did not differ significantly between the males ( $M = 2585.43$ ,  $SD = 1097.01$ ) and the females ( $M = 3112.60$ ,  $SD = 1165.51$ ) ( $b = 527.17$ ;  $SE = 432.94$ ,  $p = .23$ ,  $d = .24$ ). These means are shown in Figure 1.



*Figure 1. Salary estimate as a function of candidate gender and justifications*

Given that the participants in the justification condition could write the reasons for their decisions about the candidates ( $n = 44$ ), it was possible to perform an analysis of the content of these reasons by categorizing them in terms of the number of competence traits (e.g., capable, efficient, skillful, competent, intelligent, and confident) and sociability (e.g., friendly, well-meaning, reliable, sincere, humorous, and warm) provided by each participant. We submitted these traits to a 2 (trait type: competence vs. sociability) x 2 (gender: female vs. male) ANOVA. The results showed that there was a principal effect of the type of trait evoked ( $F(1, 43) = 71.3$ ,

$p < .001$ ,  $\eta_p^2 = .62$ ), which indicates that the participants evoked more competence traits ( $M = 1.91$ ,  $SE = .11$ ) than sociability traits ( $M = .37$ ,  $SE = .09$ ). There was a marginally significant interaction between the type of trait described and the candidate's gender ( $F(1, 43) = 2.93$ ,  $p = .09$ ,  $\eta_p^2 = .06$ ). The planned comparisons showed that there was no statistically significant difference in relation to the candidate's gender and the attribution of competence traits ( $b = .23$ ;  $SE = .21$ ,  $p = .28$ ) and sociability traits ( $b = .30$ ;  $SE = .19$ ,  $p = .12$ ). However, it is important to emphasize that the participants attributed more competence traits to the men ( $M = 1.81$ ,  $SE = .14$ ) than to the women ( $M = 1.58$ ,  $SE = .15$ ), while they attributed more sociability traits to the women ( $M = .54$ ,  $SE = .13$ ) than to the men ( $M = .23$ ,  $SE = .14$ ).

### *Discussion*

The summary of the results indicates that the simple act of justifying decisions made during a hiring process played a key role in the gender pay gap. The participants who justified their decisions attributed higher salaries to the men than to the women, while those who could not justify their decisions did not differentiate between the men and women in terms of salary. These results are the first experimental demonstration that the act of justifying a hiring decision influences people's motivation to promote the gender pay gap in a nonstereotypical position, and they corroborate the literature on the Justified Discrimination Model, in which justifications lead to discrimination without participants being aware of it or appearing to be prejudiced (Pereira et al., 2010; Verniers & Vala, 2018). The lower salary attributed to the woman also corroborates the literature that indicates that the gender pay gap disadvantages women in hiring contexts (Hogue et al., 2010). This present study goes further by showing that this occurs when people are allowed to justify their hiring decisions.

As was also observed, there is a bias toward attributing more sociability traits to women and more competence traits to men, a finding that is present in the literature on stereotypes regarding men and women (Cuddy et al., 2004; Heilman, 2012). In the present study, these



traits emerged in the justifications concerning the résumés and, taking into consideration the higher salaries attributed to the men, one can assume that the evocation of the competence traits may be related to the higher salary attributions. In other words, when the participants produced justifications for hiring the candidates, they probably evoked these stereotypes, which, in turn, prompted them to assess the men more positively than they assessed the women, thereby legitimizing the discrimination. If this were an explanatory examination of the effect of the justifications, it is likely that the stereotypes would mediate the observed pay gap. To test this possibility, we conducted a second study that better specified the questions related to the justifications in order to facilitate the evocation of competence traits and sociability traits to determine whether they mediated the gender pay gap.

### *Study 2*

One of the objectives of this second study was to replicate the results of the first study by maintaining the same experimental design. Additionally, we wanted to see whether the stereotypes (specifically those related to competence) would play a justifying role in the discrimination process and whether these stereotypes mediate the relationship between the target gender of the candidate to be hired and the salary attributed. This hypothesis follows the empirical evidence, which indicates that stereotypes contribute to the justification of discrimination of women in the organizational field (Verniers & Vala, 2018; Connor & Fiske, 2018; González et al., 2019) and that individuals use traits perceived as masculine to support this discrimination (Cuddy et al., 2008; Glick et al., 1988; Glick, 1991). Accordingly, the participants would be likely to evoke more competence traits when justifying the hiring of the male candidate than when justifying the hiring of the woman, and the greater evocation of competence traits would be positively related to the higher estimated salary.

Thus, greater attention was given to the content of the justifications raised by the participants, and the following hypotheses were derived from it: a) there will be a tendency to

favor men over women, which will materialize in a difference in estimated salary, especially when the decision can be justified; and b) the competence traits will mediate the relationship between the candidate's gender and the estimated salary, which will indicate that stereotypes are part of the legitimizing mechanism of gender discrimination in hiring situations.

### *Method*

*Participants and design.* We estimated the desired power before data collection by using the procedures proposed by Schoemann, Boulton and Short (2017) to determine power for simple mediation models. Using the expected low correlation between variables (i.e.,  $r = .20$ ) and setting confidence intervals at 95%, we need  $N = 300$  to give an 80% chance of detecting a simple mediation effect. Two hundred and ninety-eight university students (131 men and 167 women) aged between 17 and 57 years of age ( $M = 22.6$ ,  $SD = 6.6$ ) participated in the study. The participants were randomly allocated to one of four conditions in a 2 (candidate gender: female vs. male)  $\times$  2 (justification condition: justification vs. nonjustification) factorial design, with the factors varying between individuals.

*Manipulation of gender and the justifications.* The context for the discrimination remained the same as in the first study: a situation in which a candidate sought an administrative assistant position. The gender of the candidate was manipulated in the same way as in the first study, with the résumés constructed with the aim of being hired for an administrative assistant position, with only the name of the candidate changed. The information on academic background, work experience, and number of languages in which the candidate was fluent was the same for both résumés. The manipulation of the justification also occurred the same way as in the first study, except for a slight change in the questions. Instead of "What positive qualities should this person have in order to be hired?" and "What negative qualities should this person not have in order to be hired?", the questions were changed to "What positive qualities does this person have that justify hiring him/her?" and "What negative qualities does this person

have that justify not hiring him/her?” For the condition involving the absence of justifications, just as in the first study, the participants did not provide justifications and moved directly to the measurements of the dependent variables.

*Measurements.* For all of the conditions, the participants answered the same questions regarding their attitude toward hiring the candidate from Study 1. Our main dependent variable was, once again, the participants’ answer to the question about how much the candidate should earn if he/she were hired. We then asked the participants to indicate the candidate's gender in order to verify the effectiveness of the manipulation.

*Access to stereotypes.* In the condition in which the participants provided justifications ( $n = 126$ ), we analyzed the content of the justifications and categorized them into four classes: positive competence traits, negative competence traits, positive sociability traits, and negative sociability traits. The categorizations were based on the stereotype content model of Fiske, Cuddy, Glick & Xu (2002). The sociability traits were friendly, well-meaning, reliable, sincere, humorous, and warm, while the competence traits were capable, efficient, skillful, competent, intelligent, and confident. For each participant, we counted the number of times each trait was mentioned in the justification for the hiring. To determine whether the categorizations were consistent, an analysis was performed in which two intergroup relations specialists repeated the categorization of the traits and counted the number of traits evoked in each category. We analyzed the interrater consistency, which showed that the categorizations of the traits were highly consistent (positive competence traits,  $\alpha = .99$ ; negative competence traits,  $\alpha = .99$ ; positive sociability traits,  $\alpha = 1.00$ ; and negative sociability traits,  $\alpha = .96$ ).

*Procedures.* The questionnaires were answered in person in the classrooms of a public university. To obtain access to the classrooms, we contacted the departmental professors via their e-mail addresses, which were available on the university platform, and requested permission to conduct the research. After permission was granted, the questionnaires were

administered in the corresponding classrooms. The students were informed that the research was part of a study about decision-making processes, after which the questionnaires were distributed. In addition to the guidance provided by the researchers, the initial sheet of the questionnaires contained instructions on how to proceed with the study as well as the contact information for the researcher responsible for possible debriefing.

### *Results*

*Estimated salary.* Initially, the 13 extreme outliers (i.e., those that were three standard deviations beyond the mean) and the individuals who responded incorrectly to the manipulation check ( $n = 35$ ) were removed from the sample, which left 250 samples. Subsequently, to test the hypothesis that the act of justification influences the gender pay gap, we used a 2 (female vs. male)  $\times$  2 (justification vs. no justification) ANOVA with salary as the dependent variable. We observed no significant principal effect of the justifications ( $F(1,247) = .08, p = .76, \eta_p^2 = .00$ ) or the candidate's gender ( $F(1,247) = .54, p = .46, \eta_p^2 = 0.00$ ), nor was there an interaction effect between the target gender of the candidate and the justifications ( $F(1,247) = .78, p = .46, \eta_p^2 = .00$ ), which did not replicate the findings in Study 1. Indeed, although in the justification condition, the participants attributed higher salaries to the men ( $M = 3235.15$ ;  $SE = 166.41$ ) than to the women ( $M = 2966.31$ ;  $SE = 163.79$ ) ( $b = 268.84, SE = 233.49, p = .25$ ), while in the no justification condition, they attributed a slightly lower salary to the men ( $M = 3038.84$ ;  $SE = 172.05$ ) than to the women ( $M = 3064.16$ ;  $SE = 160.08$ ) ( $b = 25.32, SE = 235.01, p = .91$ ), the observed effects were not significant in any of the situations. The mean values are shown in Figure 2.

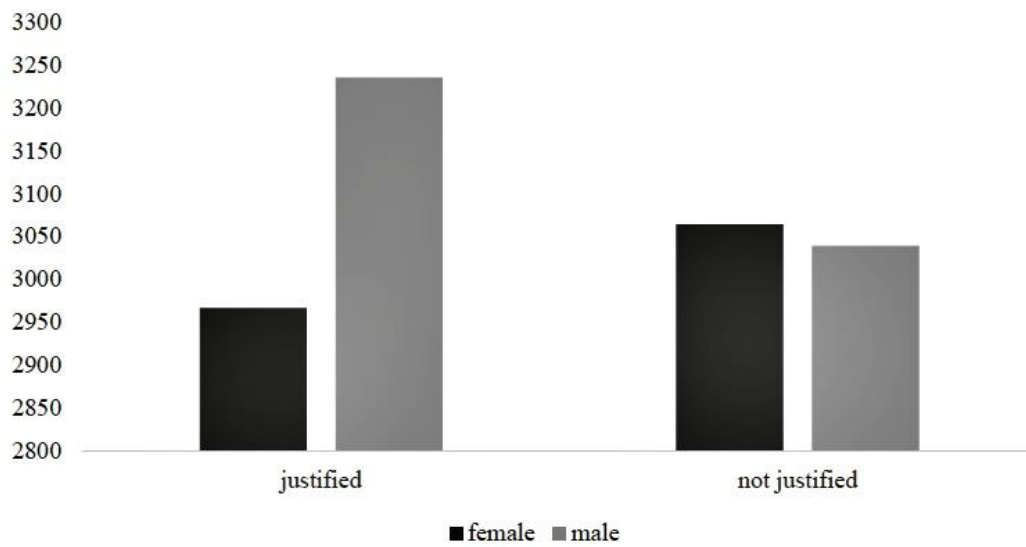


Figure 2. Salary estimate as a function of candidate gender and justifications

*Evocation of stereotypes.* Table 1 shows the descriptive statistics for the stereotypes evoked. A 2 (competence trait vs. sociability trait) x 2 (positive valence vs. negative valence) x 2 (female candidate vs. male candidate) ANOVA showed a significant principal effect of trait type ( $F(1, 127) = 427.24, p < .0001, \eta_p^2 = .77$ ), which indicates that the participants attributed more competence traits than sociability traits to the candidates. The principal effect of valence was also significant ( $F(1, 127) = 404.65, p < .0001, \eta_p^2 = .76$ ) because the participants attributed more positive traits than negative ones. We observed significant interactions between valence and gender ( $F(1, 127) = 5.24, p < .05, \eta_p^2 = .04$ ) and between trait type and valence ( $F(1, 127) = 202.55, p < .0001, \eta_p^2 = .62$ ). Most importantly, these interactions were qualified in the triple interaction between trait type, valence, and candidate gender ( $F(1, 127) = 3.92, p = .05, \eta_p^2 = .03$ ). The planned comparisons showed that there was no significant difference by gender for the other trait types or valence. Nonetheless, the individuals attributed more positive competence traits to the male candidates ( $M = 2.46, SE = .12$ ) than to the female candidates ( $M = 2.19, SE = .12$ ) ( $b = .27; SE = .17, p = .12$ ).

Table 1. Means and standard deviations (in parentheses) for the evocation of traits by gender, trait type, and valence

|        | Competence    |              | Sociability  |              |
|--------|---------------|--------------|--------------|--------------|
|        | Positive      | Negative     | Positive     | Negative     |
| Male   | 2.46<br>(.12) | .29<br>(.07) | .34<br>(.06) | .09<br>(.03) |
| Female | 2.19<br>(.12) | .50<br>(.07) | .25<br>(.06) | .02<br>(.03) |

*Analysis of mediation.* To test the hypothesis that positive competence traits (i.e., those that were evoked differently according to the gender of the candidates) mediate the relationship between candidate gender and the attributed salary, we estimated a mediation model in PROCESS (Hayes, 2013, Model 4), using the positive competence traits as mediators, the candidate's gender as the independent variable, and salary as the dependent variable (Figure 2). As we observed in the ANOVA, the effect of the candidate's gender on positive competence traits indicates that the participants presented more traits for the male candidate than for the female candidate ( $b = .33$ ,  $SE = .18$ ; 90%IC: .03; .62). We also verified that the more traits that were described, the higher the attributed salary was ( $b = 323.20$ ,  $SE = 131.60$  90%IC: 105.17; 541.23). These results indicate that the attribution of positive competence traits functions as a mediator of the effect of the gender on the salary, so that participants described the male candidate as more competent than the female candidate and that the more competent the candidate was perceived as being, the higher the salary attributed to him/her. However, the indirect effect was marginally significant ( $b = 105.47$ ,  $SE = 82.21$  90%IC: -1.74; 258.04). This process can be seen in Figure 3.

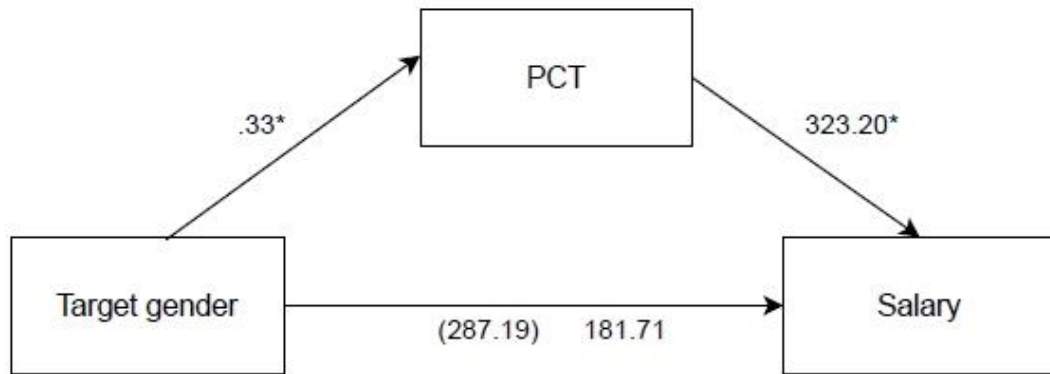


Figure 3. Relationship between candidate gender and attributed salary, mediated by positive competence traits. PCT = Positive Competence Traits.  $*p < .05$ .

### Discussion

The results of this study do not replicate the interaction effect between the candidate's gender and the act of justification that was observed in Study 1, although the pattern of the differences between the means followed what was observed in Study 1. However, these participants named more positive competence traits when describing the male candidate, and the stronger this evocation, the higher the value of the attributed salary was. These results corroborate studies in which subjects privileged the male candidate to the detriment of the female candidate (Olian et al., 1988; Glick, 1991) and attributed higher salaries to men (Beyer, 2016) using gender stereotypes regarding salary expectations (Hogue et al., 2010). However, in regard to neutral positions, some studies show that there is no gender preference (Glick et al., 1988; Koch et al., 2015). This indicates the possible existence of process that may have underscored this discrimination, making it necessary to further investigate the role of justifications in this context and the effect that a stereotypically male position might have on this process.

As observed in the mediation analysis, the gender pay gap emerged indirectly; more competence traits were attributed to the male candidate, and these traits were related to the attributed salary. We can think of this path as the process through which discrimination occurs in hiring: one first perceives the gender of the candidate and then applies stereotypes that result in a differentiated evaluation between men and women, which is then related to the pay gap. Although we know that stereotypical categorizations regarding gender are inferred as a way of making sense of the world (Ellemers, 2018), it is important to note that one stereotype (competence) applied in this situation is contextually regarded as positive because it is a masculine trait, and it is used to discriminate. Thus, even when women are presented as competent, they will be evaluated more favorably because they possess a trait that is perceived as a masculine quality (Glick et al., 1988); that is, male standards are still used to evaluate whether a candidate is good. Nonetheless, it may be possible to reverse the gender pay gap by combining the typically masculine trait of competence with the female candidate's performance.

As previously discussed, there seems to be a process underlying gender discrimination in the hiring context. However, we tested this process for a position that is considered neutral. To further clarify this process, it is necessary to test whether it can also occur during hiring for a stereotypically male position and how participants react when this stereotype is applied to a female candidate. Thus, we designed a new study that manipulated the type of position (i.e., neutral vs. stereotypical of men) and observed whether the gender pay gap remained or was reversed.

### *Study 3*

In Study 1, we found that the simple act of justifying the hiring of a man leads people to attribute a higher salary to the male candidate than they do when justifying the hiring of a woman. In Study 2, we showed that this gender pay gap occurs because people associate more



positive competence traits with men than with women. In fact, when the target person is male, the participants spontaneously used more competence traits to describe that person, and the more competence traits that the participants describe, the higher the salary they attribute to the candidate. However, we do not yet know what happens with the gender pay gap in the context of hiring for a stereotypically male position. Thus, in this study, we aimed to understand whether the justification of discrimination is more evident in this type of position. Previous studies have shown that there is clear discrimination against women in this context (Beyer, 2016; Davison & Burke, 2000; Hall, Schmader, Aday & Croft, 2018; Hogue et al., 2010; Hoyt, 2012; Hinz & Sauer, 2017; Koch et al., 2015) and that it may be related to stereotypes (Glick et al., 1988; Glick, 1991; Rattan, Steele, Ambady, 2017). For example, Viana, Sousa, and Torres (2018) showed that the stereotyping of female professionals in fields with a greater predominance of men (e.g., engineering) is related to traits considered to be masculine (e.g., competence), as if it were necessary to prioritize these types of traits over attributes that demonstrate femininity in order for women to perform their role well in this kind of context. Female teachers are seen as more competent and sociable in programs considered to be more feminine than masculine, which shows that evaluations based on stereotypes depend on the contextual configuration in which the woman finds herself.

To represent a stereotypically male position, we chose a role related to the field of technology, mathematics, science, and engineering given that this field is recognized for the underrepresentation of women (Braun & Turner, 2014) and is stereotypically associated with men (Viana et al., 2018). Thus, we hypothesized that a) when the participants can justify their choices, they will attribute higher salaries to the men than to the women and b) this effect should be moderated by the type of employment; the salary estimate will be higher for the men in the position considered to be male than those in the neutral position, which represents greater discrimination in this context.

## Method

*Participants and design.* We defined sample size based on a priori 80% power analyses. At least 350 participants were needed for a detectable low effect for our research design ( $d = .30$ , with  $p = .05$  and power = .80). Thus, three hundred eighty-two (162 men and 220 women) university students aged between 16 and 64 years of age ( $M = 23.2$ ;  $SD = 7.4$ ) participated in the study. The participants were randomly allocated to one of eight conditions in a 2 (candidate gender: female vs. male)  $\times$  2 (justification condition: justification vs. nonjustification)  $\times$  2 (stereotyped position vs. nonstereotyped position) factorial design, with the factors varying among individuals.

*Manipulations.* The context for the discrimination was the same as in the previous studies. We manipulated the gender of the candidate the same way, with résumés that were constructed with the aim of being hired for the positions in question and that differed only in the candidate's name. The information relevant to the position was the same for both genders for both the neutral position and the stereotyped position. We manipulated the type of position, indicating that the hiring was for an administrative assistant (i.e., a neutral position) or a systems programmer (i.e., a stereotypically male position). The manipulation of the justification was the same as in the second study, using the following questions: "What positive qualities does this person have that justify hiring him/her?" and "What negative qualities does this person have that justify not hiring him/her?". In the condition with the absence of justifications, the participants did not provide justifications and moved directly to the measurement of the dependent variables.

*Measurements.* For all of the conditions, the participants answered the same questions regarding the hiring of the candidate that were used in the previous studies. Our main dependent variable was, once again, the answer to the question regarding how much the candidate should

earn if he or she were hired. As a manipulation check, we asked the participants to indicate the candidate's gender.

*Access to the stereotypes.* The categorizations of the stereotypes evoked to justify the hiring were the same as those used in the second study. As in the previous study, the categories were based on the stereotype content model (Glick et al. 1999). Once again, two judges evaluated the categorization, demonstrating consistency (positive competence traits,  $\alpha = .97$ ; negative competence traits,  $\alpha = .99$ ; positive sociability traits,  $\alpha = .99$ ; and negative sociability traits  $\alpha = 1.00$ ).

### *Results*

*Attributed salary.* Initially, the extreme outliers ( $n = 5$ ) and the individuals who failed the manipulation check ( $n = 43$ ) were removed from the sample, which left 334 valid cases for analysis. We performed a 2 (target gender: male vs. female)  $\times$  2 (type of position: neutral position vs. male position)  $\times$  2 (justification: justified vs. not justified) ANOVA, with salary estimate as the dependent variable. A principal effect —  $F(1, 326) = 17.34, p < .0001, \eta_p^2 = .05$  — of the position was observed. The participants attributed a higher salary to the systems programmer ( $M = 4026.14, SE = 165.09$ ) than to the administrative assistant ( $M = 3000.58, SE = 182.72$ ). We found a significant principal effect of the justifications ( $F(1, 326) = 5.55, p < .05, \eta_p^2 = .17$ ), indicating a higher salary when the hiring decision was justified ( $M = 3803.35, SE = 172.95$ ) than when it was not justified ( $M = 3223.37, SE = 175.29$ ). The principal effect of the candidate's gender was also significant ( $F(1,326) = 6.59, p < .05, \eta_p^2 = .02$ ): the participants attributed a higher salary to the women ( $M = 3829.41, SE = 171.94$ ) than to the men ( $M = 3197.31, SE = 176.29$ ). The interaction effects were not significant: position  $\times$  justifications ( $F(1,326) = 147, p = .23$ ); position  $\times$  candidate's gender ( $F(1,326) = .65, p = .42$ ); justifications  $\times$  target gender ( $F(1,326) = 1.61, p = .20$ ); and justifications  $\times$  type of position  $\times$  gender ( $F(1,326) = .60, p = .44$ ). Although these interactions were not significant,

we analyzed the descriptive statistics of each experimental condition in an attempt to identify what motivated the attribution of higher salaries to the woman than to the man, which reflects an inversion of the expected pattern in the gender pay gap effect. We noted the presence of a very interesting phenomenon: the salary overvaluation of women in the stereotypically male position. In fact, there was a difference in attribution of salary that favored the women ( $M = 5133.93$ ,  $SE = 322.76$ ) over the men ( $M = 3797.58$ ,  $SE = 322.76$ ) only in the situation of the stereotyped position when the hiring could be justified ( $b = 1336.35$ ,  $SE = 456.45$ ,  $p < .05$ ;  $d = .60$ ). The means of all of the conditions are shown in Table 2.

Table 2. Means and standard errors of the salary estimates regarding position type, absence or presence of justifications, and candidate gender.

|        | With justifications |                                  | Without justifications |                      |
|--------|---------------------|----------------------------------|------------------------|----------------------|
|        | Neutral position    | Stereotyped position             | Neutral position       | Stereotyped position |
| Female | 3417.57<br>(367.62) | 5133.94 <sub>a</sub><br>(322.76) | 3016.35<br>(353.56)    | 3749.80<br>(329.69)  |
| Male   | 2864.32<br>(367.62) | 3797.58 <sub>b</sub><br>(322.76) | 2704.11<br>(372.69)    | 3423.24<br>(345.04)  |

Note: Means with different subscripts indicate significant differences with  $p < .05$  in the multiple comparisons.

*Evocation of stereotypes.* A 2 (type of trait: competence vs. sociability) x 2 (valence: positive vs. negative) x 2 (gender of the target: female candidate vs. male candidate) ANOVA applied to the evocation of stereotypes showed a significant principal effect of the type of trait ( $F(1, 171) = 726.12$ ,  $p < .001$ ,  $\eta_p^2 = .81$ ), indicating that the participants attributed more competence traits ( $M = 1.36$ ,  $SE = .04$ ) than sociability traits ( $M = .08$ ,  $SE = .01$ ) to the candidates. The principal effect of the valence was also significant ( $F(1, 171) = 617.22$ ,  $p < .001$ ,  $\eta_p^2 = .78$ ) and showed that the participants attributed more positive traits ( $M = 1.24$ ,  $SE = .04$ ) than negative ones ( $M = .19$ ,  $SE = .02$ ). We observed significant interactions between

valence and gender ( $F(1, 171) = 3.86, p < .05, \eta_p^2 = .02$ ), indicating that the individuals attributed fewer positive traits to the men ( $M = 1.19, SE = .05$ ) than to the women ( $M = 1.30, SE = .05$ ), although the planned comparisons showed that this difference was not statistically significant ( $b = .10, SE = .07, p = .16$ ). There was also a significant interaction between trait type and valence ( $F(1, 173) = 431.63, p < .001, \eta_p^2 = .72$ ), indicating that the participants attributed more positive competence traits ( $M = 2.35, SE = .07$ ) than negative competence traits ( $M = .37, SE = .04$ ) ( $b = 1.98, SE = .08, p < .001, d = 2.65$ ) and more positive sociability traits ( $M = .15, SE = .03$ ) than negative sociability traits ( $M = .02, SE = .01$ ) ( $b = .13, SE = .03, p < .001, d = .44$ ). The triple interaction among trait type, valence, and candidate gender was not significant —  $F(1, 73) = 0.62, p = .43, \eta_p^2 = .00$ .

### *Discussion*

The results of the study that warrant special attention are related to the participants' greater preference for women in a stereotypically male position, especially the participants were allowed to justify their decisions. Although this finding does not support the main assumptions, which predicted greater favoritism toward men (specifically in a position in which stereotypes indicate that men perform better), the results can be discussed in the context of theories that explain these contradictions and specify that the stereotyping can vary according to context; for example, the shifting standards model (Biernat & Kobrynowicz, 1997). According to this model, the context is defined as the scenario or environment in which a stereotype can be generated or applied. When we judge members of stereotyped groups along dimensions relevant to the stereotype, we use reference points or standards within the category. For example, given the stereotypes that men are more competent than women, we are likely to judge a particular woman's competence in relation to the lower competence standards that are expected of women and the competence of a particular man in relation to the higher competence standards expected for men. Therefore, stereotype-based standards may make it easier for a woman than for a man

to overcome the low standards expected of her group and to be seen as impressively competent (e.g., "for a woman, she is *very* competent") (Biernat & Thompson, 2002). Thus, in the context of this study, the results may indicate that the participants viewed women programmers as an example of the rare cases that break the stereotype. Therefore, according to the above model, when some women show excellent performance in socially valued functions at which men are considered more competent, these "special" women can be evaluated as being far superior to other women. In other words, according to this evaluation, women programmers would be exceptional. Thus, this standard of intracategorical comparisons may have led to the overvaluation of the female candidate, indicating that she was perceived as exceptional.

The shifting standards model also predicts that in stereotypical contexts, subjective response scales involve biased judgments. As observed, the participants rewarded women more both in terms of salary and the attribution of competence in the justification condition (especially for the stereotyped position), which required subjective responses. These results may be a consequence of the fact that because the candidates were incongruent with the stereotype, they may have triggered the so-called "wow effect": "She truly is competent compared to the other women!" (Biernat & Kobrynowicz, 1997).

These findings can also be discussed in light of the results of the studies of Viana et al. (2018), who sought to understand the dynamics of the malleability of stereotypes of men and women in the professional context. In fact, as already mentioned, in counterstereotypical professions, women are attributed more traits that are considered to be masculine (e.g., competence), and these seems to not coincide with feminine traits. Thus, as we have already seen in the second study, competence plays a key role in the attributed salary, and in the present study, this may have added to the aforementioned "wow effect", which suggests that the inverted gender pay gap is an exception that favors a target candidate who is perceived as an exception to the category to which she belongs. Study 4 addresses these issues more directly.

#### *Study 4*

Considering the findings of Studies 1, 2, and 3, in the present experiment, we decided to test whether manipulating the content of stereotypes directly affects the reversal of the gender pay gap when the participants justify or do not justify their decisions. Previous studies have shown that when there is relevant information about women or when they are shown to be counterstereotypical in the sense that it makes their competence better, there is a tendency for people to show reduced gender bias (Rice & Barth, 2015; Hoyt, 2012; Gonzalez et al., 2019; Davison & Burke, 2000; Foschi & Valenzuela, 2012). This present study addresses this issue by manipulating the content of the stereotypes of sociability and competence, and we observed the effect of these stereotypes on the gender pay gap in a situation in which the decision-making process involves a position considered stereotypically male. Thus, this present study aims to test the hypothesis of the inversion of the gender pay gap when a woman is described as having stereotypically male characteristics (i.e., competence) but not when she is described as having traits that are perceived as typically female (i.e., sociability).

In this present study, we followed the standard procedures used in the previous studies, except that we decided to emphasize gender categorization before administering the tasks in which we manipulated the justification condition, the candidate's gender, and the content of the stereotypes. The emphasis on categorization was accomplished through a preliminary task in which we presented a list of sexually ambiguous names and asked the participants to indicate to which category (male vs. female) the name belonged. This procedure was based on the study of Costa-Lopes, Pereira & Judd (2014), which showed that it is important to highlight the categories to which the targets belong for a better understanding of intergroup attitudes and behavior.

## Method

*Participants and design.* Three hundred three university students (125 men and 178 women) aged between 17 and 65 years ( $M = 24.90$ ,  $SD = 8.46$ ) participated. Post-hoc sensitivity analysis for fixed main effects and interactions in ANOVA using the Webpower (Zhang, & Yuan, 2018) with  $\alpha = .05$  showed that we had an 80% chance of detecting an effect as small as  $d = 0.32$ . The participants were randomly allocated to one of eight conditions in a 2 (candidate gender: female vs. male)  $\times$  2 (justification condition: justification vs. nonjustification)  $\times$  2 (sociability stereotype vs. competence stereotype) factorial design, with the factors varying between individuals.

*Manipulations.* The context for the discrimination was the same as in the previous studies; however, the candidate in question sought only the position of systems programmer, and the respondent was requested to assist the manager in a hiring decision, in which the person had already done a preliminary analysis and had commented on the candidate on their résumé. We manipulated the candidate's gender in the same way as in the previous studies. Similarly, we followed the same procedures as the previous studies for manipulating the justifications. In this study, however, the question related to the justification was “In your opinion, what positive qualities the candidate Maria Cecília (or José Henrique) has that justifies her (or him) being hired?” For the situation with the absence of justifications, just as in the previous studies, the participants did not perform the justifications, and moved directly to the measurements of the dependent variables.

For the manipulation of the stereotypes, six stereotypes based on the stereotype content model (Fiske et al., 2002) were selected, which varied according to the situation — the stereotypes of sociability were cheerful, humorous, sincere, warm, reliable, and sociable, while the stereotypes of competence were qualified, efficient, organized, skillful, intelligent, and effective. The stereotypes were presented to the participants in the form of comments from the



manager at the end of the résumés, and depended on the situation. For example, in the situation describing sociability traits, the participants read the following: “Manager's comment after interview and analysis of the candidate's profile: Cheerful, humorous, sincere, warm, reliable, and sociable”. In the competence situation, they read the following: “Manager's comment after interview and analysis of the candidate's profile: qualified for the position, efficient, organized and skillful, intelligent and effective.”

*Measurements.* In all of the situations, the participants answered the questions from the previous studies related to the attitude toward hiring the candidate. Our main dependent variable was, once again, the answer to the question about how much the candidate should earn if they were hired. We added two new salary estimation requests, in which they indicated the salary that the candidate should receive if the participant was the owner of the company; and the salary that the candidate should receive regardless of being hired or not. The three answers regarding the salary estimation had very high internal consistency ( $\alpha = .92$ ) and, therefore, they were grouped by the mean of the three estimates, thus forming a general index of the estimated salary value. After this, the manipulation checks consisted of questions about the candidate's gender and about what was asked to write after the presentation of the résumé.

### *Results*

To test our main hypothesis, a 2 (female candidate vs. male candidate) x 2 (sociability vs. competence) x 2 (justifications vs. absence of justifications) ANOVA was performed, with the salary estimate as the dependent variable. There was no significant principal effect from the candidate's gender ( $F(1, 232) = .14, p = .70, \eta_p^2 = .00$ ), from the stereotypes ( $F(1, 232) = .14, p = .70, \eta_p^2 = .00$ ), or from the justifications ( $F(1, 232) = .92, p = .34, \eta_p^2 = .00$ ). There was also no significant interaction effect between stereotype and the candidate's gender ( $F(1, 232) = .60, p = .44, \eta_p^2 = .00$ ), or from the justifications and the candidate's gender ( $F(1, 232) = .02, p = .88, \eta_p^2 = .00$ ). However, we found a marginally significant interaction between the

stereotypes and the justifications ( $F(1, 232) = 3.47, p = .06, \eta_p^2 = .01$ ). The planned comparisons showed (see Figure 3) that in the situation in which the candidate was described as competent, the act of justifying led to the attribution of a higher salary ( $M = 3697.67, SE = 223.17$ ) than when not justified ( $M = 3018.69, SE = 252.93$ ) ( $b = 678.99, SE = 337.32, p < .05, d = .33$ ). When the candidate was described as sociable, the act of justifying resulted in a lower salary ( $M = 3482.37, SE = 245.85$ ) than when not justified ( $M = 3700.40, SE = 239.43$ ), but this difference was not significant ( $b = -218.03, SE = 343.18, p = .53, d = -.10$ ). The mean values are shown in Figure 4.

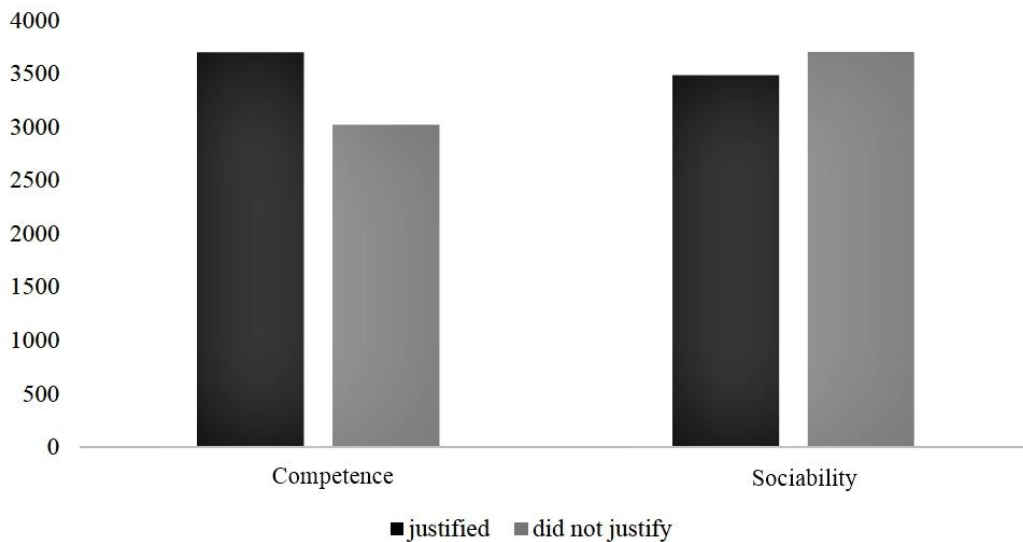


Figure 4. Mean salary attributed with regard to competence, sociability, and justifications.

We also analyzed the effects obtained under each of the experimental conditions (see Table 3), even though the triple interaction between the target gender of the candidate, stereotypes, and justifications had not reached the desired significance level ( $F(1, 232) = 1.89, p = .17, \eta_p^2 = .00$ ). In the situation in which the participants analyzed the résumé of a candidate with competence traits, the act of justifying led to a higher salary estimate ( $M = 3929.41, SE = 317.89$ ) than when not justified ( $M = 2884.00, SE = 370.72$ ) ( $b = 1045.41, SE = 488.35, p < .05, d = .50$ ). An inverse effect occurred when the participants analyzed the résumé of a candidate with sociability traits, to whom they attributed a lower salary when justifying than

when they did not justify; however, this difference was not significant ( $b = -512.38$ ,  $SE = 482.70$ ,  $p = .29$ ,  $d = -.17$ ). It is interesting to note that, when the participants were asked to justify the hiring of the person they analyzed (situation with justification), they tended to attribute a higher salary to the woman described as competent than to the man, but they attributed a lower salary to the woman characterized as sociable than to the man with these same characteristics. However, in the situation in which they did not justify, they tended to make salary estimates according to the stereotypical content: they attributed a higher salary to the competent man than to the woman, while they attributed a higher salary to the sociable woman (see Figure 5).

Table 3. Means and standard errors of the salary attributed with regard to competence, sociability, justifications, and the target gender of the candidate.

|        | With justifications |                      | Without justifications |                      |
|--------|---------------------|----------------------|------------------------|----------------------|
|        | Sociability         | Competence           | Sociability            | Competence           |
| Female | 3196.23<br>(338.42) | 3929.41*<br>(317.89) | 3708.62<br>(344.20)    | 2884.00*<br>(370.72) |
| Male   | 3768.51<br>(356.72) | 3465.94<br>(313.31)  | 3692.19<br>(332.91)    | 3153.37<br>(344.20)  |

\* $p < .05$

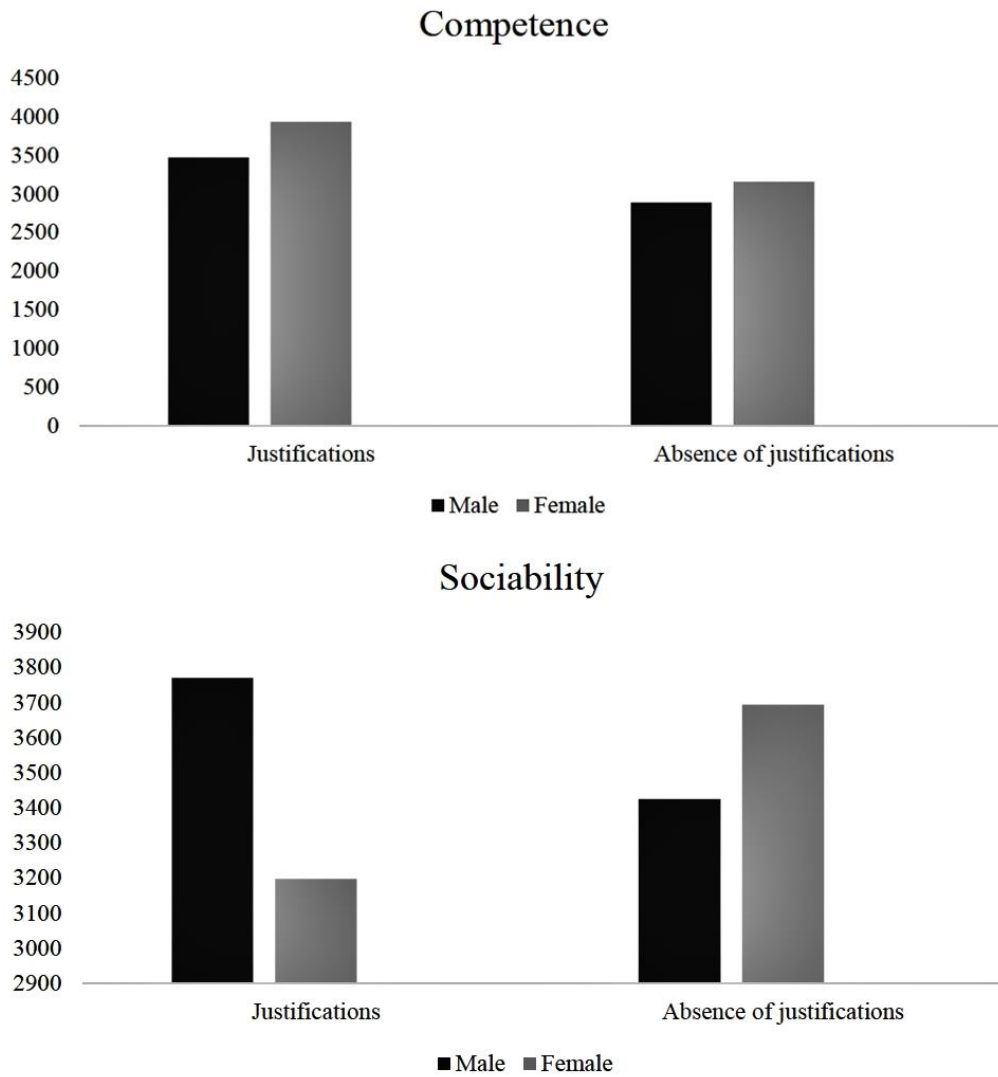


Figure 5. Mean of the salary attributed to the candidates with regard to sociability, competence, and justifications.

### Discussion

The results indicated the tendency of the participants to reward the competent candidates more when they could justify their decisions. This shows the influence that competence traits have on the appreciation of a target person, especially in a position in a domain considered to be masculine (Heilman, 2012). However, it was shown that the role of the act of justifying depends on the gender of the candidates. As observed, justification led participants toward favoring a competent woman over a competent man. This result may provide an explanation for the inversion of the gender pay gap also observed in the third study, in which the people

better evaluated a woman when justifying her hiring for a male position. The present study goes further by showing that the greater appreciation of this woman occurred because of the stereotypical content of the description of her characteristics. When one can rationalize about the stereotype, especially if the information we have is counterstereotypic, processing occurs with greater attention, and this also happens with gender stereotypes (Heilman, 2012). Accordingly, highlighting a candidate's competence, or emphasizing the counterstereotypic information, can reduce gender bias (Heilman & Caleo, 2018), which corroborates the findings of studies that reinforce this assumption (Foschi & Valenzuela 2012; Davison & Burke, 2002). On the other hand, it is important to note that, although no significant difference was found in the estimation of the conditions in which the candidate was sociable and justifications could or could not be made, it could be seen that when justifications were not made, the estimate was higher for the sociable candidate. This may be because sociability in women is an implicit stereotype; therefore, by not justifying a sociable woman's résumé, there is a reward for her being as she *should* be (Rudman & Glick, 2001).

### *General Discussion*

This present research program presented four studies examining how people legitimize gender discrimination through justifications that appear to be nondiscriminatory. By doing so, people use a legitimizing mechanism — in this case, the justifications based on stereotypes to discriminate against women. Accordingly, we found that the justifications serve to allocate higher earnings to a male candidate than to a female candidate, and the justifications are through the stereotypes of sociability and competence (Study 1). The stereotypes of competence serve to mediate the process between perceiving a candidate as a man to attribute to him a higher salary estimate (Study 2). However, this pattern can change when a woman is seen in a position that requires competence, with her being a counterstereotypic target (Study 3), which leads the people toward favoring a woman who is shown to be competent in a “male” position, and hiring

this female candidate can be justified (Study 4). In sum, these findings suggest the content of stereotypes is on the base of the gender pay gap and serve to legitimise it.

### *Theoretical Implications*

These results have several interesting theoretical implications. First, there seems to be a tendency to legitimize it by resorting to stereotypes associated with men and women. Our initial studies indicated this tendency (Studies 1 and 2), given that there were salary estimates that privileged the men but not the women. Thus, these findings provide new insight into the role played by the content of stereotypes on the gender pay gap by showing their underlying motivation for legitimizing discrimination: it is appropriate and fair to maintain the status quo (Jost, 2019). That is, it is appropriate to attribute a higher income to men because of gender per se because this is "natural" and because one can justify and implicitly maintain this pay inequality without realizing it.

Second, our findings show the degree to which gender stereotypes can serve to justify this status quo. If we understand how we think of gender, that it is “a constitutive element of social relationships based on perceived differences between the sexes and gender is a primary way of signifying relationships of power” (Scott, 1986, p. 1067) and that stereotypes are grounded in a duality between the masculine and the feminine, this suggests how our society is constructed through gender relations. It is known that stereotypes are our cognitive means of understanding the world, but they are also socially constructed and difficult to modify because they underpin the motivation to believe that the world is fair and to apply other legitimizing mechanisms (Ellemers, 2018). Thus, the circumscribed duality in the perception of gender stereotypes does not stop with the cognitive aspect, but it also underpins the inequality that is legitimized in the form of justifications about how everything “should” be, thereby naturalizing the material economic privilege of men and maintaining the status quo. This is an important theoretical consideration that adds to the reflections raised in previous research on the

legitimization of gender discrimination. It also indicates that motherhood myths are the main justifier for discriminating against women in an organizational context (Verniers & Vala, 2018), which is related to stereotypes or expectations regarding gender. The present research advances prior research on this topic by experimentally providing the understanding of this phenomenon and showing the mediation effect of stereotypes, which revealed the process underlying the gender pay gap.

Finally, the findings of the latter studies (Studies 3 and 4) seem to provide us an initial way to mitigate this whole process. It is known that in order to change stereotypes, it is important provide counterstereotypic information by presenting group members who are atypical in order for these stereotypes to gradually change (Vala & Monteiro, 2004), reducing the implicit bias (Burns, Monteith & Parker, 2017). The lack-of-fit model (Heilman & Caleo, 2018) starts with the assumption that discrimination in the work context occurs due to the perceived lack of fit between the attributes of women and the attributes required for positions considered to be masculine. In this case, people already start from a position of negative expectations that bias information processing in work contexts and thus result in discrimination. The way out of this process is to diminish this perception of lack of fit and break the link between this perception and biased gender expectations in the decision-making process (Heilman & Caleo, 2018). Indeed, some studies have provided evidence that individualized counterstereotypical information about a candidate can reduce discrimination (Glick, Zion & Nelson, 1988; Heilman, 1984). The results of Studies 3 and 4 add further evidence that seems to indicate that it would be ideal to emphasize women's competence in environments in which this is unexpected. Additionally, to provide stimuli to encourage better processing of this information through justifications that further emphasize the stereotype, thereby adding to the justified discrimination model a beneficial aspect of justifications that can be tested in future studies through better measurement.

### *Limitations and Further Directions*

Our study is subject to the usual typical limitations of research on university student samples, which may be a less pressing concern in the present case given the social relevance of the gender pay gap effect for this group. The extent to which these students have been involved in or know about hiring processes is unknown. Although our studies demonstrated the societal bias toward discrimination, future studies could explore how the discrimination mechanism occurs within companies themselves - to determine whether this bias remains in individuals who are expected to be trained to avoid biased judgments - as well as among the victims of discrimination themselves, the women.

Another important limitation was the nonmanipulation of other important categories of analysis, such as race. Studies have already shown the importance of information in more than one category to understanding the relationship between stereotyping and discrimination, given that we do not process just one category. Moreover, future studies could also manipulate a job considered to be feminine by presenting counterstereotypic men in order to understand the role of the justifications in legitimizing in this context. Longitudinal studies that could observe the selection process to determine the evaluations of women after they are hired would also be interesting.

In conclusion, our findings are expected to provide important insights into how stereotypes can serve to legitimize discrimination through justifications and mitigate it in the hiring context. Additionally, this study shows how stereotypes interfere with the estimates of the salaries that people believe that the candidates should earn. However, a better understanding is needed of how the presence of counterstereotypical information can change stereotypes in the long term and how this can impact everyday life in organizations. Only in this way can we contemplate changes in gender relations in order to achieve pay equality.



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## **APPENDIX**

**Scenarios of Studies 1 and 2**  
**FREE INFORMED TERM OF CONSENT -FITC**

Dear participant

We need your collaboration in this study conducted to know the opinion of people like you on how best to make decisions regarding the professional profile of a candidate for a job.

Their collaboration, which we appreciate, is voluntary and may be discontinued at any time.

We need your consent to participate. If you agree, please answer the following questions. Otherwise, given the forms to responsible researchers.

Any questions or additional questions about the study can be sent to:  
karollyne\_amoriim@hotmail.com

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**Dear participant**

This study is part of a research program to help human resource managers in the decision-making process.

In the questionnaire to be answered, **the manager needs to evaluate different people's resumes to find out to what extent each person meets the qualifications required by the position. Your task will be to help the manager make a decision.**

**Below you will find a resume of a person who applied for the position.** Remember: the manager needs your help. Respond as accurately as possible.



## RÉSUMÉ

Maria Cecília Bastos

Rua Venâncio José Neto, Bancários, João Pessoa, PB

Date of Birth: March 26, 1980

### OBJECTIVE

Administrative assistant position

### PROFESSIONAL EXPERIENCE

#### **01/2009 – 12/2017 Assistant to the Director**

Company: **MEDIALUSO**

- Managing the operational director's schedule;
- Organization of electronic mail;
- Preparation of budgets;
- Preparation of meeting minutes;
- Preparation of letters to customers and suppliers in conjunction with the accounting department.

#### **08/2001 – 12/2008 Financial Assistant**

Company: **LEO BURNETT**

- Payment of accounts;
- Cash flow control;
- Payroll;
- Consolidation of the monthly balance.

### EDUCATION/TRAINING

- Undergraduate degree in Business Administration – UFMG
- Graduate degree in Financial Management – IBMEC

### LANGUAGES

- Mother tongue: Portuguese
- English: Excellent
- French: Moderate

## RÉSUMÉ

José Henrique Bastos  
Rua Venâncio José Neto, Bancários, João Pessoa, PB  
Date of Birth: March 26, 1980

### OBJECTIVE

Administrative assistant position.

### PROFESSIONAL EXPERIENCE

#### **01/2009 – 12/2017 Assistant to the Director**

Company: **MEDIALUSO**

- Managing the operational director's schedule;
- Organization of electronic mail;
- Preparation of budgets;
- Preparation of meeting minutes;
- Preparation of letters to customers and suppliers in conjunction with the accounting department.

#### **08/2001 – 12/2008 Financial Assistant**

Company: **LEO BURNETT**

- Payment of accounts;
- Cash flow control;
- Payroll;
- Consolidation of the monthly balance.

### EDUCATION/TRAINING

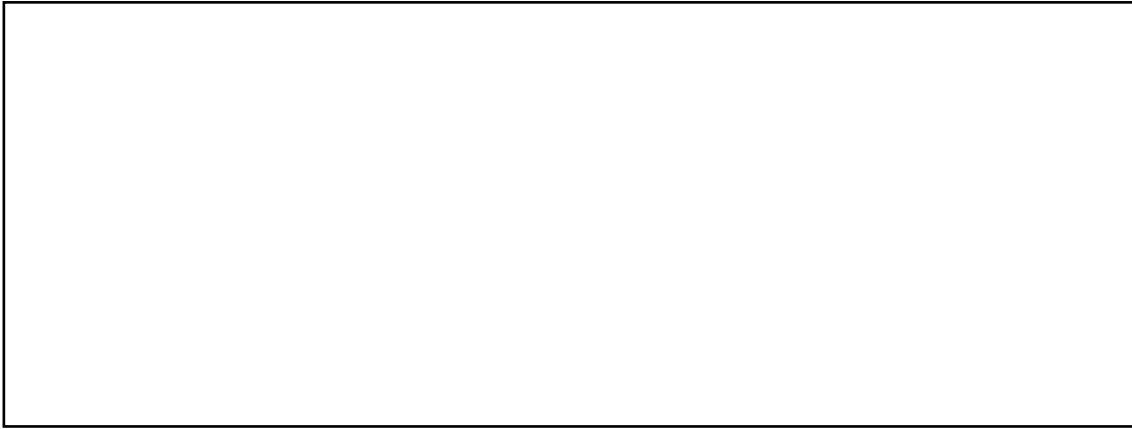
- Undergraduate degree in Business Administration – UFMG
- Graduate degree in Financial Management – IBMEC

### LANGUAGES

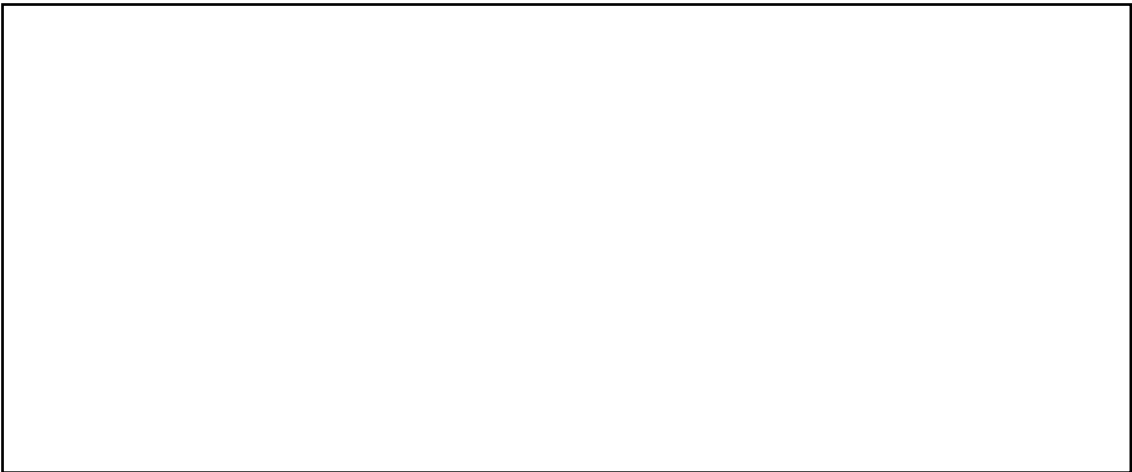
- Mother tongue: Portuguese
- English: Excellent
- French: Moderate

**On the curriculum analysis, please answer:**

What are the positive qualities that this person has to justify being hired?

A large, empty rectangular box with a thin black border, intended for the user to write their response to the question about positive qualities.

What are the negative qualities that this person has to justify being hired?

A large, empty rectangular box with a thin black border, intended for the user to write their response to the question about negative qualities.

**In the tables below, fill in the circle that indicates your answer.**

If you were the manager, how likely would your decision be to hire this person?

|                          |                                |                             |                       |                              |                        |
|--------------------------|--------------------------------|-----------------------------|-----------------------|------------------------------|------------------------|
| <input type="radio"/>    | <input type="radio"/>          | <input type="radio"/>       | <input type="radio"/> | <input type="radio"/>        | <input type="radio"/>  |
| <b>Very<br/>unlikely</b> | <b>Moderately<br/>unlikely</b> | <b>Shortly<br/>unlikely</b> | <b>Not<br/>likely</b> | <b>Moderately<br/>likely</b> | <b>Very<br/>likely</b> |

If you were responsible for defending the hiring of that person in a selection process opened by the company, how much would you agree or disagree with the hiring?

|                           |                                |                       |                       |                             |                       |
|---------------------------|--------------------------------|-----------------------|-----------------------|-----------------------------|-----------------------|
| <input type="radio"/>     | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       | <input type="radio"/> |
| <b>Disagree a<br/>lot</b> | <b>Disagree<br/>moderately</b> | <b>Disagree</b>       | <b>Agree</b>          | <b>Agree<br/>moderately</b> | <b>Agree a lot</b>    |

How much do you agree or disagree that this person has the ability to the position that objective?

|                              |                                |                       |                       |                             |                           |
|------------------------------|--------------------------------|-----------------------|-----------------------|-----------------------------|---------------------------|
| <input type="radio"/>        | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       | <input type="radio"/>     |
| <b>Strongly<br/>disagree</b> | <b>Moderately<br/>disagree</b> | <b>Disagree</b>       | <b>Agree</b>          | <b>Moderately<br/>agree</b> | <b>Strongly<br/>agree</b> |

How much do you agree or disagree that hiring that person is the right decision to make?

|                              |                                |                       |                       |                             |                           |
|------------------------------|--------------------------------|-----------------------|-----------------------|-----------------------------|---------------------------|
| <input type="radio"/>        | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       | <input type="radio"/>     |
| <b>Strongly<br/>disagree</b> | <b>Moderately<br/>disagree</b> | <b>Disagree</b>       | <b>Agree</b>          | <b>Moderately<br/>agree</b> | <b>Strongly<br/>agree</b> |

According to your curriculum evaluation, how much do you think this person should earn?  
R\$\_\_\_\_\_

**Please, without looking at the curriculum, answer:**

What is the candidate's sex? ( ) Male ( ) Female

**Sociodemographic data**

Age: \_\_\_\_\_

Gender: ( ) Female ( ) Male

Course: \_\_\_\_\_

Education level:

( ) Elementary School ( ) High School ( ) Incomplete Higher Education

( ) Complete Higher Education ( ) Postgraduate

Religion: ( ) Catholic ( ) Spiritist ( ) Protestant ( ) Has no religion ( ) Other

### Scenarios of Study 3

#### FREE INFORMED TERM OF CONSENT -FITC

Dear participant

We need your collaboration in this study conducted to know the opinion of people like you on how best to make decisions regarding the professional profile of a candidate for a job.

Their collaboration, which we appreciate, is voluntary and may be discontinued at any time.

We need your consent to participate. If you agree, please answer the following questions. Otherwise, given the forms to responsible researchers.

Any questions or additional questions about the study can be sent to:  
karollyne\_amoriim@hotmail.com

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#### Dear participant

This study is part of a research program to help human resource managers in the decision-making process.

In the questionnaire to be answered, **the manager needs to evaluate different people's resumes to find out to what extent each person meets the qualifications required by the position. Your task will be to help the manager make a decision.**

**Below you will find a resume of a person who applied for the position.** Remember: the manager needs your help. Respond as accurately as possible.

## RÉSUMÉ

Maria Cecília Bastos

Rua Venâncio José Neto, Bancários, João Pessoa, PB

Date of Birth: March 26, 1980

### OBJECTIVE

Administrative assistant position

### PROFESSIONAL EXPERIENCE

#### **01/2009 – 12/2017 Assistant to the Director**

Company: **MEDIALUSO**

- Managing the operational director's schedule;
- Organization of electronic mail;
- Preparation of budgets;
- Preparation of meeting minutes;
- Preparation of letters to customers and suppliers in conjunction with the accounting department.

#### **08/2001 – 12/2008 Financial Assistant**

Company: **LEO BURNETT**

- Payment of accounts;
- Cash flow control;
- Payroll;
- Consolidation of the monthly balance.

### EDUCATION/TRAINING

- Undergraduate degree in Business Administration – UFMG
- Graduate degree in Financial Management – IBMEC

### LANGUAGES

- Mother tongue: Portuguese
- English: Excellent
- French: Moderate

## RÉSUMÉ

José Henrique Bastos  
Rua Venâncio José Neto, Bancários, João Pessoa, PB  
Date of Birth: March 26, 1980

### OBJECTIVE

Administrative assistant position.

### PROFESSIONAL EXPERIENCE

#### **01/2009 – 12/2017 Assistant to the Director**

Company: **MEDIALUSO**

- Managing the operational director's schedule;
- Organization of electronic mail;
- Preparation of budgets;
- Preparation of meeting minutes;
- Preparation of letters to customers and suppliers in conjunction with the accounting department.

#### **08/2001 – 12/2008 Financial Assistant**

Company: **LEO BURNETT**

- Payment of accounts;
- Cash flow control;
- Payroll;
- Consolidation of the monthly balance.

### EDUCATION/TRAINING

- Undergraduate degree in Business Administration – UFMG
- Graduate degree in Financial Management – IBMEC

### LANGUAGES

- Mother tongue: Portuguese
- English: Excellent
- French: Moderate

## RÉSUMÉ

Maria Cecília Bastos

Rua Venâncio José Neto, Bancários, João Pessoa, PB

Date of Birth: March 26, 1980

### OBJECTIVE

Systems programmer position.

### PROFESSIONAL EXPERIENCE

**01/2009 – 12/2017 Programmer / Analyst**

Company: **Betha Sistemas**

- Experience in the methodology of the software development process adopted by the company (Model directed to planning).
- System automation with Microsoft Word using Visual Basic macros.
- Power Builder 5 and 9.
- Banco Sybase 9 and its administrative tools.
- Data Architect (Conceptual and Physical Modeling).

**08/2001 – 12/2008 Programmer**

Company: **Domínio Sistemas**

- SQL - PL SQL.
- Power Builder 12.
- Sybase Bank 9 and its administrative tools.
- Basic in java and jsp.

### EDUCATION/TRAINING

- Graduate degree in Computer Science - UFMG

### LANGUAGES

- Mother tongue: Portuguese
- English: Excellent



## RÉSUMÉ

José Henrique Bastos  
Rua Venâncio José Neto, Bancários, João Pessoa, PB  
Date of Birth: March 26, 1980

### OBJECTIVE

Systems programmer position.

### PROFESSIONAL EXPERIENCE

#### 01/2009 – 12/2017 **Programmer / Analyst**

Company: **Betha Sistemas**

- Experience in the methodology of the software development process adopted by the company (Model directed to planning).
- System automation with Microsoft Word using Visual Basic macros.
- Power Builder 5 and 9.
- Banco Sybase 9 and its administrative tools.
- Data Architect (Conceptual and Physical Modeling).

#### 08/2001 – 12/2008 **Programmer**

Company: **Domínio Sistemas**

- SQL - PL SQL.
- Power Builder 12.
- Sybase Bank 9 and its administrative tools.
- Basic in java and jsp.

### EDUCATION/TRAINING

- Graduate degree in Computer Science - UFMG

### LANGUAGES

- Mother tongue: Portuguese
- English: Excellent

**On the curriculum analysis, please answer:**

What are the positive qualities that this person has to justify being hired?

|  |
|--|
|  |
|--|

What are the negative qualities that this person has to justify being hired?

|  |
|--|
|  |
|--|

**In the tables below, fill in the circle that indicates your answer.**

If you were the manager, how likely would your decision be to hire this person?

|                          |                                |                             |                       |                              |                        |
|--------------------------|--------------------------------|-----------------------------|-----------------------|------------------------------|------------------------|
| <input type="radio"/>    | <input type="radio"/>          | <input type="radio"/>       | <input type="radio"/> | <input type="radio"/>        | <input type="radio"/>  |
| <b>Very<br/>unlikely</b> | <b>Moderately<br/>unlikely</b> | <b>Shortly<br/>unlikely</b> | <b>Not<br/>likely</b> | <b>Moderately<br/>likely</b> | <b>Very<br/>likely</b> |

If you were responsible for defending the hiring of that person in a selection process opened by the company, how much would you agree or disagree with the hiring?

|                           |                                |                       |                       |                             |                       |
|---------------------------|--------------------------------|-----------------------|-----------------------|-----------------------------|-----------------------|
| <input type="radio"/>     | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       | <input type="radio"/> |
| <b>Disagree a<br/>lot</b> | <b>Disagree<br/>moderately</b> | <b>Disagree</b>       | <b>Agree</b>          | <b>Agree<br/>moderately</b> | <b>Agree a lot</b>    |

How much do you agree or disagree that this person has the ability to the position that objective?

|                              |                                |                       |                       |                             |                           |
|------------------------------|--------------------------------|-----------------------|-----------------------|-----------------------------|---------------------------|
| <input type="radio"/>        | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       | <input type="radio"/>     |
| <b>Strongly<br/>disagree</b> | <b>Moderately<br/>disagree</b> | <b>Disagree</b>       | <b>Agree</b>          | <b>Moderately<br/>agree</b> | <b>Strongly<br/>agree</b> |

How much do you agree or disagree that hiring that person is the right decision to make?

|                              |                                |                       |                       |                             |                           |
|------------------------------|--------------------------------|-----------------------|-----------------------|-----------------------------|---------------------------|
| <input type="radio"/>        | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       | <input type="radio"/>     |
| <b>Strongly<br/>disagree</b> | <b>Moderately<br/>disagree</b> | <b>Disagree</b>       | <b>Agree</b>          | <b>Moderately<br/>agree</b> | <b>Strongly<br/>agree</b> |

According to your curriculum evaluation, how much do you think this person should earn?  
R\$\_\_\_\_\_

**Please, without looking at the curriculum, answer:**

What is the candidate's sex? ( ) Male ( ) Female

**Sociodemographic data**

Age: \_\_\_\_\_

Gender: ( ) Female ( ) Male

Course: \_\_\_\_\_

Education level:

( ) Elementary School ( ) High School ( ) Incomplete Higher Education

( ) Complete Higher Education ( ) Postgraduate

Religion: ( ) Catholic ( ) Spiritist ( ) Protestant ( ) Has no religion ( ) Other

## **Study 4 scenario - Example**

CMSJ

### **FREE INFORMED TERM OF CONSENT -FITC**

Dear participant

We need your collaboration in this study conducted to know the opinion of people like you on how best to make decisions regarding the professional profile of a candidate for a job.

Their collaboration, which we appreciate, is voluntary and may be discontinued at any time.

We need your consent to participate. If you agree, please answer the following questions. Otherwise, given the forms to responsible researchers.

Any questions or additional questions about the study can be sent to:  
karollyne\_amoriim@hotmail.com

Before we begin, we have a test to know their ability to identify unusual names of people. Please read the list of names below and indicate those that are male names and those that are female names. Mark the gender of the name in one of the options on the side. For each name, you can only check one option.

|          |             |              |
|----------|-------------|--------------|
| Ager     | (   ) Male; | (   ) Female |
| Bux      | (   ) Male; | (   ) Female |
| Cali     | (   ) Male; | (   ) Female |
| Dell     | (   ) Male; | (   ) Female |
| Eru      | (   ) Male; | (   ) Female |
| Fae      | (   ) Male; | (   ) Female |
| Giu      | (   ) Male; | (   ) Female |
| Haru     | (   ) Male; | (   ) Female |
| Imogen   | (   ) Male; | (   ) Female |
| Jibril   | (   ) Male; | (   ) Female |
| Kenai    | (   ) Male; | (   ) Female |
| Les      | (   ) Male; | (   ) Female |
| Mint     | (   ) Male; | (   ) Female |
| Nex      | (   ) Male; | (   ) Female |
| Omid     | (   ) Male; | (   ) Female |
| Prudence | (   ) Male; | (   ) Female |
| Quwa     | (   ) Male; | (   ) Female |
| Rafa     | (   ) Male; | (   ) Female |
| Sovi     | (   ) Male; | (   ) Female |
| Teveri   | (   ) Male; | (   ) Female |
| Ubirani  | (   ) Male; | (   ) Female |
| Viridian | (   ) Male; | (   ) Female |
| Wei      | (   ) Male; | (   ) Female |
| Xun      | (   ) Male; | (   ) Female |
| Yun      | (   ) Male; | (   ) Female |
| Zul      | (   ) Male; | (   ) Female |

**Dear participant**

This study is part of a research program to assist human resource managers in the decision-making process.

**In the questionnaire to be answered, the manager needs to evaluate different people's resumes to find out to what extent each person meets the qualifications required by the position. Your task will be to help the manager make a decision.**

**Below, you will find a resume of a person who applied for the position and at the end of it a comment from the manager about the candidate.** Remember: the manager needs your help. Respond as accurately as possible.

## RÉSUMÉ

Maria Cecília Bastos  
Rua Venâncio José Neto, Bancários, João Pessoa, PB  
Date of Birth: March 26, 1980

### OBJECTIVE

Systems programmer position.

### PROFESSIONAL EXPERIENCE

**01/2009 – 12/2017 Programmer / Analyst**

Company: **Betha Sistemas**

- Experience in the methodology of the software development process adopted by the company (Model directed to planning).
- System automation with Microsoft Word using Visual Basic macros.
- Power Builder 5 and 9.
- Banco Sybase 9 and its administrative tools.
- Data Architect (Conceptual and Physical Modeling).

**08/2001 – 12/2008 Programmer**

Company: **Domínio Sistemas**

- SQL - PL SQL.
- Power Builder 12.
- Sybase Bank 9 and its administrative tools.
- Basic in java and jsp.

### EDUCATION/TRAINING

- Graduate degree in Computer Science - UFMG

### LANGUAGES

- Mother tongue: Portuguese
- English: Excellent

**Manager's comment after interview and analysis of the candidate's profile:  
Cheerful, humorous, sincere, warm, reliable, and sociable**

**On the curriculum analysis, please answer:**

In your opinion, what are the positive qualities that candidate Maria Cecília has that justifies being hired?



**In the tables below, fill in the circle that indicates your answer.**

If you were the manager, how likely would your decision be to hire Maria Cecília?

|                          |                                |                             |                       |                          |                        |
|--------------------------|--------------------------------|-----------------------------|-----------------------|--------------------------|------------------------|
| <input type="radio"/>    | <input type="radio"/>          | <input type="radio"/>       | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>  |
| <b>Very<br/>unlikely</b> | <b>Moderately<br/>unlikely</b> | <b>Shortly<br/>unlikely</b> | <b>Not likely</b>     | <b>Moderately likely</b> | <b>Very<br/>likely</b> |

If you were responsible for defending the hiring of Maria Cecília in a selection process opened by the company, how much would you agree or disagree with the hiring?

|                           |                                |                       |                       |                             |                       |
|---------------------------|--------------------------------|-----------------------|-----------------------|-----------------------------|-----------------------|
| <input type="radio"/>     | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       | <input type="radio"/> |
| <b>Disagree a<br/>lot</b> | <b>Disagree<br/>moderately</b> | <b>Disagree</b>       | <b>Agree</b>          | <b>Agree<br/>moderately</b> | <b>Agree a lot</b>    |

How much do you agree or disagree that Maria Cecília has the skills for the job she aims for?

|                           |                                |                       |                       |                             |                       |
|---------------------------|--------------------------------|-----------------------|-----------------------|-----------------------------|-----------------------|
| <input type="radio"/>     | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       | <input type="radio"/> |
| <b>Disagree<br/>a lot</b> | <b>Disagree<br/>moderately</b> | <b>Disagree</b>       | <b>Agree</b>          | <b>Agree<br/>moderately</b> | <b>Agree a lot</b>    |

Question of checking attention. The sum of two, plus five, minus one equals eight. Mark moderately agree, regardless of whether you agree or not.

|                           |                                |                       |                       |                             |                       |
|---------------------------|--------------------------------|-----------------------|-----------------------|-----------------------------|-----------------------|
| <input type="radio"/>     | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       | <input type="radio"/> |
| <b>Disagree a<br/>lot</b> | <b>Disagree<br/>moderately</b> | <b>Disagree</b>       | <b>Agree</b>          | <b>Agree<br/>moderately</b> | <b>Agree a lot</b>    |

How much do you agree or disagree that hiring Maria Cecília is the right decision to be made?

|                           |                                |                       |                       |                             |                       |
|---------------------------|--------------------------------|-----------------------|-----------------------|-----------------------------|-----------------------|
| <input type="radio"/>     | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       | <input type="radio"/> |
| <b>Disagree a<br/>lot</b> | <b>Disagree<br/>moderately</b> | <b>Disagree</b>       | <b>Agree</b>          | <b>Agree<br/>moderately</b> | <b>Agree a lot</b>    |

According to your curriculum evaluation, how much do you think Maria Cecília should earn if she is hired by the company? (There are no right or wrong estimates, indicate which you prefer): R \$ \_\_\_\_\_

If you were the owner of the company, what salary would you give Maria Cecília if you hired her? (There are no right or wrong estimates, indicate which you prefer):

R \$ \_\_\_\_\_

Considering all the qualities of Maria Cecília, how much do you think she really deserves to earn regardless of whether or not she is hired (There are no right or wrong estimates, indicate what you prefer): R \$ \_\_\_\_\_

**Please, without looking at the curriculum, answer:**

What is the candidate's sex? ( ) Male ( ) Female

What was asked to write after reading the resume?

( ) Do nothing

( ) Draw a house with garden

( ) Draw a house without garden

( ) Justify hiring a person for a job

**Sociodemographic data**

Age: \_\_\_\_\_

Gender: ( ) Female ( ) Male

Course: \_\_\_\_\_

Education level:

( ) Elementary School ( ) High School ( ) Incomplete Higher Education

( ) Complete Higher Education ( ) Postgraduate

Religion: ( ) Catholic ( ) Spiritist ( ) Protestant ( ) Has no religion ( ) Other

What is your political ideology? (Mark with an X)

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|

Very liberal

Very conservative

Finally, we would like to reevaluate your ability to identify unusual names of people. Read again the list of names below and indicate those that are male names and those that are female names. Check the sex of the name one of the options next. For each name, you can only check one option. You cannot look at the ones you marked at the beginning of this study.

|          |              |               |
|----------|--------------|---------------|
| Ager     | (    ) Male; | (    ) Female |
| Bux      | (    ) Male; | (    ) Female |
| Cali     | (    ) Male; | (    ) Female |
| Dell     | (    ) Male; | (    ) Female |
| Eru      | (    ) Male; | (    ) Female |
| Fae      | (    ) Male; | (    ) Female |
| Giu      | (    ) Male; | (    ) Female |
| Haru     | (    ) Male; | (    ) Female |
| Imogen   | (    ) Male; | (    ) Female |
| Jibril   | (    ) Male; | (    ) Female |
| Kenai    | (    ) Male; | (    ) Female |
| Les      | (    ) Male; | (    ) Female |
| Mint     | (    ) Male; | (    ) Female |
| Nex      | (    ) Male; | (    ) Female |
| Omid     | (    ) Male; | (    ) Female |
| Prudence | (    ) Male; | (    ) Female |
| Quwa     | (    ) Male; | (    ) Female |
| Rafa     | (    ) Male; | (    ) Female |
| Sovi     | (    ) Male; | (    ) Female |
| Teveri   | (    ) Male; | (    ) Female |
| Ubirani  | (    ) Male; | (    ) Female |
| Viridian | (    ) Male; | (    ) Female |
| Wei      | (    ) Male; | (    ) Female |
| Xun      | (    ) Male; | (    ) Female |
| Yun      | (    ) Male; | (    ) Female |
| Zul      | (    ) Male; | (    ) Female |

