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How Does Explicit Discrimination in Job Ads Interact with Discrimination in Callbacks?
Evidence from a Correspondence Study in Mexico City

Importante

Acknowledgements

Abstract

Job ads often narrow their searches using gender or age requirements. These narrow searches do not rule out the existence of post-application discrimination. We test for such biases using a correspondence experiment in Mexico City. Some job advertisements explicitly discriminated against males, females, asked for beauty or requested a photograph. The experiment consisted on sending fictitious resumes responding to job advertisements with randomized information of the applicants, which included photographs representing three distinct phenotypes: white, mestizo and indigenous. The two forms of discrimination are correlated: explicitly discriminating firms tend to discriminate more against indigenous-looking females and against married females.

Keywords: Discrimination; Gender; Race; Labor market; Mexico; Correspondence study.
JEL: I24; J10; J16; J70; O54.

Resumen

Los anuncios de trabajo frecuentemente acotan su búsqueda mediante requisitos de género o edad. Estas búsquedas acotadas no descartan la existencia de discriminación después de la solicitud de trabajo. Aquí ponemos a prueba la existencia de dichos sesgos utilizando un experimento de correspondencia en la Ciudad de México. Algunos anuncios de trabajo discriminaron explícitamente a mujeres, hombres, requirieron belleza o una fotografía en el currículum. El experimento consistió en el envío de currículas ficticias, respondiendo a anuncios reales de trabajo, con información aleatoria de los solicitantes. Esta información incluyó fotografías que representaron tres fenotipos: blancos, mestizos e indígenas. Encontramos que las dos formas de discriminación están correlacionadas: las empresas que discriminan explícitamente tienden a discriminar aún más a las mujeres de fenotipo indígena y a las mujeres casadas.

Palabras clave: Discriminación; Género; Carrera; Mercado de trabajo; México; Estudio de la correspondencia.
JEL: I24; J10; J16; J70; O54.

Introduction

The literature in economics has made an increasing effort to provide credible measures of discrimination in various markets. Given the illegality of discrimination in many countries, economists often resort to correspondence studies in order to uncover discrimination. However, there are some contexts in which explicit discrimination is tolerated up to a certain degree. Kuhn and Shen (2013) find pervasive discrimination in job ads in China. Mexico is another example where discrimination in job ads is quite common (Delgado Helleseter, Kuhn and Shen 2014). These discriminating job ads tend to exclude entire segments of the population based on narrow searches across age and gender requirements for job applicants. Nonetheless, such explicit discrimination does not rule out the existence of post-application discrimination within the groups that comply with the discriminating requirements.

Delgado Helleseter, Kuhn and Shen (2014) find that although job ads with gender preferences are balanced between women and men, once they introduce age into the analysis young women are preferred to young men, and old men are preferred to old women. They refer to this finding as the "age-twist" in gender preferences, and they discuss that it can be explained if firms do not completely reveal their preferences in job ads; that is, there are still some unstated preferences regarding beauty, marital status, and leadership. For instance, job ads generally do not explicitly discriminate along racial lines. In this paper, we aim to uncover whether these unstated preferences produce biases in callback rates in a correspondence study. Given that in Mexico European phenotypes are preferred to mestizo (light brown) or indigenous phenotypes (dark brown), if there is a large degree of unstated preferences for beauty, we should find that explicitly discriminating ads tend to callback more white females than either mestizo or indigenous females. To our knowledge, this is the first attempt to uncover whether explicit discrimination in job ads is related to further discrimination in the hiring process.

Kuhn and Shen (2013) find pervasive explicit discrimination in China's job ads: around 10% of job ads are directed to only-male or only-female applicants (roughly half and half), about 25% have age requirements, and around 10% post beauty or height requirements. They find a negative relationship between three different measures of productivity and the proclivity of firms to post gender, beauty or height restrictions. Since these findings are not compatible with a glass-ceiling model, segregation across occupations or firms' preferences, they develop a new model in which firms face an increasing tradeoff between the costs of the search and their ability to find the most suitable candidate as the job position requires more skills. Kuhn and Shen (2013) warn

the reader in the sense that their ad-based approach to measure discrimination uncovers different aspects of employer discrimination than correspondence studies; in particular, explicit discrimination "involves a conscious decision by the employer to invite only one group to apply", whereas audit studies measure "both conscious choices and unconscious biases of employers" (p. 290). In this way, there could be discrimination in an audit study, even when there is no discrimination in job ads; or, on the contrary, there could be explicit discrimination in job ads, and no discrimination in correspondence studies. Hence, we test whether this explicit discrimination leads to further discrimination in the hiring process.

Delgado Helleseter et al. (2014) extend the aforementioned study using four different job boards: three in China and one in Mexico. Besides confirming Kuhn and Shen's (2013) results, Delgado Helleseter et al. (2014) also find an age-twist in gender preferences. They also find some interactions of this age-twist with beauty, marital status and leadership requirements. More specifically, beautiful and single women are preferred at young ages, and men are preferred at older ages to occupy leadership positions. They explore the possibility that age patterns in childbearing and marriage may explain the age-twist, but the patterns too do not fit the twist. They thus "argue that […] unstated, gendered preferences for beauty, marital status and leadership might account for a substantial share of the age-twist in [their] data" (p.22).

This paper is an extension to the analysis presented in Arceo-Gómez and Campos-Vázquez (2014). In that paper we presented the results of an audit study in the context of Mexico. The aim of the study was to find whether employers discriminate along gender and racial lines in the Mexican labor market. The study is limited to recent college graduates in Mexico City, given that this population is more likely to answer job ads through the internet, and that building credible experience records is relatively easier. Mexico is an interesting case because it is very common to include a photograph in the CV, so race does not need to be conveyed by names (which is not even possible in a society like that of Mexico). Our main findings were: i) surprisingly, women receive more callbacks than men, ii) women are discriminated over race, but men are not: white women receive more callbacks than either mestizo or indigenous-looking women, and iii) women are discriminated according to their marital status, but men are not. We also point to suggestive evidence that firms that explicitly discriminated in their ads behave differently than firms with neutral preferences. For instance, the marriage penalty disappears when using fixed effects models.

Those results were not in line with either a preference-based discrimination model (Becker 1971) or with a statistical discrimination model (Phelps 1972). All our explanations on whether there was preference-based discrimination or statistical seemed ad-hoc to explaining a particular coefficient. For instance, the fact that married females are discriminated against and married males are not points to a statistical discrimination hypothesis. But when we interact marriage with race, we find that mestizo women do not experience a marriage penalty (in fact, they even experience a marriage premium), only white and indigenous women do. On the other hand, a

preference-based discrimination model cannot explain why only women are discriminated over race, but men are not.

Kuhn and Shen's (2013) model and Delgado Helleseter et al.'s (2014) finding on the age-twist may provide a better explanation on Arceo-Gómez and Campos-Vázquez (2014) findings. Beauty ideals in Mexico may be highly correlated with whiteness. According to Delgado Helleseter and coauthors, there is a link between beauty and young female preferences in job ads. If firms leave their preferences unstated, then we may find that they tend to call back more females than males at young ages. Firms would also tend to call back more beautiful women than ugly women, but beauty would not necessarily affect men. Since, beauty ideals in Mexico may be highly correlated with whiteness, this age-beauty-female link would explain our results.

In this paper, we use the same correspondence study to test whether there is an interaction between explicit discrimination in job ads and discrimination in callback rates. Given that the experiment was not initially designed to test the age-twist found in Delgado Helleseter et al. (2014), we are only able to provide some suggestive evidence on the fact that there remain some unstated preferences regarding gender, beauty and marital status. Our experiment consisted on sending fictitious resumes (CVs) responding to job advertisements directed to recent college graduates. The reasons behind this choice are that online job searches for this group are more representative of the typical search, and that we do not introduce noise by having individuals with longer professional careers in which the experience may take a more prominent role as in Oreopoulos (2011). We sent comparable CVs to approximately 1,000 online job advertisements. To each job post, we sent about 8 resumes randomly varying the gender and the picture along with other observable characteristics of the fictitious applicants. The photographs represent three distinct phenotypes plus a no-picture control. The phenotypes are: Caucasian (white skin), the mestizo phenotype (light brown skin), and the indigenous or dark mestizo phenotype.

In our sample of job ads, around 10.5 per cent had a gender preference: 5 per cent requested only male applicants, and 5.5 per cent requested only females. We also have 12.6 per cent of ads requesting a picture in the CV, and 5 per cent displaying a preference for beauty. Following the ads' instructions, we sent only female applicants to ads explicitly asking for women, and only male applicants to ads asking for men. Similarly, we excluded the no-picture CVs in ads that explicitly requested a picture in the resume. Our main result is that explicitly discriminating ads tend to discriminate even more than neutral ads. In particular, explicitly discriminating ads tended to callback more white females (6 percentage points higher probability) when soliciting women-only than other phenotypes, and to callback more mestizo females when soliciting beauty (9.1 pp higher probability) or a picture in the CV (6.1 pp higher probability). Moreover, we also find that the female marriage penalty is restricted to firms that explicitly discriminate, especially those that explicitly ask for a gender in their ads.

The rest of the paper is organized as follows. Section 1 presents the empirical strategy, which includes a description of the experiment and the estimating equations. Section 2 presents the descriptive statistics of our sent resumes and the job ads. Section 3 lays out the results and Section 4 concludes.

Experimental setup and methodology

In order to test whether gender and phenotype determine the callbacks for an interview, we constructed a bank of randomized CVs and a bank of job advertisements. A typical CV includes identity information (name, photograph, address, email, cell phone number, etc.), marital status, attended high-school and university, professional experience, hobbies and some additional information (like time availability and willingness to move to another city). On average, we sent 8 CVs to each job advertisement. These were determined on the basis of gender and phenotype (3 phenotypes and a CV without picture as a control group).

We created CVs using experiences from CVs available online such that the professional experience of our fictitious candidates was realistic. Moreover, we contacted recent college graduates and asked them to modify the CVs as if they were their own. For the names, we used 8 of the most common names and surnames in Mexico. We chose mainly surnames ending with "ez", because in Mexico these surnames are very common and they are not associated with social background. Following Lahey & Beasley (2009), we randomized all information across CVs, and created 10 sets of 8 CVs each for six different majors and two experience levels; hence, our bank of CVs has 960 different CVs. Each name was associated to a Gmail© account and a cell phone number. The characteristics of the CVs are randomized, so on average each photograph has a CV of the same quality.

In order to distinguish phenotypes, we took pictures of three men and three women representing the phenotypes. The pictures have a white background and the subjects wear similar attires. The pictures were taken with the express consent of the subjects, who granted us written permission to use their image in the experiment. We explained to each subject the nature of the experiment; and the way in which we would use their image during the experiment. For the purpose of this study, we define a European phenotype as a white person. It is important to mention that our definition is not necessarily related to a particular color of the eyes or the hair. The next phenotype we defined is the mestizo, whose skin is a light brown shade. Finally, the indigenous phenotype is a dark-skinned individual. It is important to clarify that a subject labeled as indigenous is not necessarily a native of the Americas. These types of individuals resemble Native Americans more than mestizos in the color of their skin and facial features.

As for the job advertisements, we only focused on those requesting candidates with zero to three years of experience, given that we are analyzing the market for recent college graduates. The graduates are confined to the following majors: business administration, public accounting, economics, industrial engineering, engineering on electronics and telecommunications, and engineering on computational systems. These majors were selected to try to maximize the number of job ads available before the beginning of the experiment; and also to achieve some gender balance among the graduates. We found that 48 percent of the graduates in those majors of the 2007-2008 class were women (ANUIES, 2009). Hence, given a relatively balanced

distribution of graduates we would expect a relatively balanced callback rate in the absence of discrimination.

We sent the CVs from October 2011 to May 2012. We collected the job ads information on a weekly basis from internet websites commonly used to publicize and look for jobs in the Metropolitan Area of Mexico City. For each job ad we collected some information on the job characteristics, but the ads did not allow us to collect much information on the firm (such as the firm size, revenues, and the like) or on the specifics of the job position within the firm (such as whether there is contact with customers or clients and the hierarchy within the firm). We collected information of the special requests of the ad regarding age, gender, marital status, physical appearance and specific set of skills. If the advertisement was looking only for women, we just sent women's CVs. If the ad had some requirements on languages or programming skills, then we added all those requirements to all CVs sent to that ad.

In order not to raise suspicions about the experiment, we did not send all the CVs at the same time. We scheduled the deliveries of emails at different times within two consecutive days using Boomerang©. The employer could make contact with the applicant via email or cell phone, so each name was associated with a cell phone number and an email account. If the firm contacted the applicant to schedule an interview, we registered the callback. These are the callbacks that we use to estimate the probability of a callback in our econometric model.

In sum, in most of the cases we sent 8 CVs per job advertisement. In each set of CVs we included 4 men and 4 women. For each gender, we randomized universities, marital status, and a picture representing 3 characteristic phenotypes, so we left a CV without picture as a control. When the employers called to schedule an interview with the applicant, we recorded the callback as a success. These callbacks will be used as our dependent variable in the econometric model presented below.

Given the experimental nature of our data, our estimating equation to uncover discrimination is the following:

$$\Pr\big(Callback_{ij} = 1 \big| G_{ij}, R_{ij}, M_{ij}, X_{ij}, W_j\big) = \Phi(\alpha G_{ij} + \beta R_{ij} + \gamma M_{ij} + \delta X_{ij} + \theta W_j)$$

(1)

where i denotes individual and j the ad/firm, the dependent variable is an indicator of whether the firm contacted the applicant, $\Phi(\cdot)$ is the normal cumulative distribution function, G denotes gender; R, the phenotype (white, mestizo, and indigenous), M is marital status, and X and W are control variables of the individual and the ad, respectively. Our control variables include university attended, age, major dummies, and dummies for scholarships, public high schools, foreign language proficiency, time availability and leadership activities within the university. In all the regressions we estimate standard errors robust to heteroskedasticity and clustered at the firm level. We interpret a non-zero coefficient on gender, race or marital status as evidence of discrimination.

In this paper we are mostly interested on how explicit discrimination affects callback rates, hence the specification of main interest is the following:

$$\Pr\big(Callback_{ij} = 1\big|G_{ij}, R_{ij}, M_{ij}, X_{ij}, W_j\big) = \Phi(\alpha G_{ij} + \beta R_{ij} + \gamma M_{ij} + \delta X_{ij} +$$
$$\theta E_j + \rho G_{ij} \times E_j + \lambda R_{ij} \times E_j +$$
$$\mu M_{ij} \times E_j)$$

(2)

where E_j is a dummy variable that denotes whether firm j explicitly discriminated in the job ad. We have three definitions of E_j depending on whether the ad had gender preferences, beauty preferences or requested a photo in the CV. In this case, having a non-zero coefficient on any of the interactions, or on E_j itself, is evidence that there is further discrimination from explicitly discriminating job ads.

Descriptive statistics

We sent around 8,122 resumes responding to our job ads. Table 1 shows the descriptive statistics of the fictitious job applicants. Roughly half of the CVs belong to women. Given the parameters of the random assignment that we established 27 percent of individuals are married and the average age is 24.5 years. By the same token, 62 percent of the applicants graduated from a public university. There are more job ads for majors on business than on engineering majors, which explains the large proportion of business degrees. In fact, 71 percent of all fictitious applicants graduated from business majors. The CVs also include information on scholarships, foreign languages and availability of extra time and willingness to move to another city. These aspects are included in order to analyze if they are an important factor in the determination of a callback. Finally, the table shows the mean of our outcome variable. When we look at the whole sample, 12.7% of our job applicants were called back. However, there is a gender difference: while only 10.4% of men were called back, 14.9% of women did. This difference may be a result of a greater explicit preference for women in job ads.

As for the characteristics of the job ads, Table 2 presents descriptive statistics of explicit discrimination in ads, as wells as other requested skills. Column (1) in the table presents the proportion of job ads explicitly stating each requirement. First of all, 24.7% of job ads had a restriction pertaining to gender, marital status, beauty or the inclusion of a photograph in the resume. Around 10% of job ads have an explicit gender preference of which 40% express preferences towards men, and 60% towards women. The difference is statistically different from zero at any significance level. Regarding marital status, 1.4% of the ads have a preference, overall 1.4% express preferring married applicants, and 1.1% express preferring single applicants. However, more ads prefer married males and more ads prefer single females; though only the

gender difference in singleness preferences is statistically significant. In our sample, 12.6% of the job ads explicitly request a photograph in the CV. This request is far more common when the ad also requests women and the gender difference is statistically significant. Finally, around 5% of the job ads explicitly request beauty, and again this is more common in ads also requesting female candidates (the gender difference is also statistically significant). When it comes to requested skills, time availability and disposition to move, we find all of these requests are more common among ads requesting males rather than females (all gender differences are statistically significant at least at the 10% level).

We thus find that job ads tend to ask for single beautiful females, and for English-speaking males with time flexibility and disposition to move or travel. The first finding confirms the findings in Kuhn and Shen (2013), and Delgado Helleseter et al. (2014): beauty requests come in tandem with female preferences. However, we also find that skills, willingness to move, and availability are characteristics desirable in male applicants.

Results

Experimental results

We first present a summary of the results of the experiment, and the initial suggestive evidence pointing to an interaction of discrimination in callbacks and explicit discrimination in job ads. To that end, we inquire whether our results are robust to the exclusion of firms that explicitly discriminated in job ads by either gender preferences or requesting a picture in the CV. Table 3 presents the results from a probit estimation of the probability of receiving a callback for an interview. The regressions control for all other characteristics of the applicants such as age, a dummy for business majors, a dummy for having a scholarship during college, a dummy of public college, a dummy of public high school, dummies for foreign languages, and a dummy for having taken leadership courses. None of these control variables were statistically different from zero in the estimations.

Column (1) of Table 3 presents the results using the entire sample, we find that women receive more callbacks than men (which is a surprising result), and that white and mestizo applicants are also more likely to be called back than indigenous-looking applicants (which is the base category). However, Columns (2) and (3) present the estimates separately for women and men using the whole sample. In these two columns we uncover the first two gender asymmetries of our results: race matters for women, but not men; and being married has a penalty for women and no effects for men.

The effect on women may be a result of firms having a slightly greater explicit preference for females than for males (recall that more ads specifically request females rather than males). In order to rid our estimates of these preferences, we initially limit the estimations to the set of ads to which we sent the set of 8 CVs (8-set sample),

which meant that the ad had neither a gender preference nor was requesting a picture. Columns 4 to 6 in Table 3 present these estimations. The main point of Table 3 is that restricting the sample to the 8-set significantly reduces the magnitude of discrimination. We find that when using all the firms, there is a negative and significant effect on callbacks of being married and female, but the effect disappears when looking at non-explicitly discriminating firms. The effect of race is also smaller when we restrict the estimation to the 8-set. If firms do not reveal their preferences for beauty, age and gender completely, then we would expect to see that firms that explicitly discriminate would further discriminate when calling back for an interview, as compared to gender-neutral firms.

Table 4 presents additional findings on the asymmetry of marriage by gender and race. We extend the econometric model by interacting the variables married and race. All coefficients are interpreted in relative terms with respect to the omitted category which is the indigenous phenotype. The first two columns present the results for women and the last two columns present the result for males. Again, we perform the analysis for the entire sample of ads and for the 8-set sample of non-explicitly discriminating ads. We find again that the effect of being married for women is attenuated in the 8-set sample ads. However, this table also reveals that the marriage penalty is only present for white and indigenous females and those with no picture; that is, mestizo women receive a marriage premium in callback rates when looking at the entire sample. This premium disappears when we look at the sample of non-explicitly discriminating ads. When we turn to men, we find that men actually have a marriage premium, though barely significant. However, the effect of marriage is not the same across racial lines: mestizo men receive a marriage penalty when compared to indigenous men.

We cannot explain those asymmetries of the race effect across gender, nor the marriage effect across racial lines in the light of traditional models of discrimination. Preference-based discrimination would suggest that firms, customers or coworkers dislike darker people (Becker 1971). Empirically, the model would imply that darker applicants are discriminated against regardless of gender. Statistical discrimination would also predict that a racial group is on average less productive, or has a higher variance in productivity, but it does not necessarily imply a gender asymmetry on race as we show in Table 3 (Arrow, 1998; Dickinson and Oaxaca, 2009; Phelps 1972). Similarly, statistical discrimination cannot explain the asymmetry of the effect of marriage across racial lines. If firms believe that married females are less productive, then they should penalize all married females regardless of their race. Our results in Table 4 pointed out that at least some firms treat married, mestizo females differently. The age-twist and the high correlation between gender preferences and beauty found in Delgado Helleseter et al. (2014), and Kuhn and Shen (2013), respectively, would better explain our results. We thus look further into the interaction of explicit discrimination and callback rates in this correspondence study.

Do explicitly discriminating firms discriminate more in the correspondence study?

In this subsection we turn our attention to the behavior of explicitly discriminating firms. Table 5 presents a comparison of the callback outcomes between explicitly discriminating ads and neutral ads, where explicit discrimination refers to either requesting a gender, beauty or a photograph in the CV. The first three columns present the results for discriminating ads, and the rest, for neutral ads. First, we find that discriminating ads tend to call more women than neutral ads; that is a coefficient on the women dummy of 0.081 for the former (Column 1) against a coefficient of 0.033 on the latter (Column 4). The coefficients on race are also very different. While there are no stark differences for the gender-pooled samples, we find striking differences in the results by gender. Explicitly discriminating ads tend to discriminate women more on a racial basis (Column 2), but they do not discriminate men (the race coefficients on Column 3 are small in magnitude and statistically insignificant). In contrast, neutral firms discriminate women less on a racial basis (Column 5 vs. 2), but tend to discriminate men a bit more (although none of the race coefficients are statistically significant in Column 6, they are larger in magnitude than those found in Column 3). Moreover, even in neutral ads white women are preferred to women with indigenous phenotype or no picture.

Table 5 also shows that the female marriage penalty is due to firms that explicitly discriminate in the job ad. Column 2 shows that a married female has 5.7 percentage points less than a single female to get a callback from the firm. This is a large effect: it represents 38 percent lower probability of a callback using the mean callback rates among women (Table 1, Row D). On the other hand, firms with neutral ads do not show a significant result on the marriage penalty (Column 5).

In order to know if the differences presented above are statistically significant, we ran regressions using the pooled data, and interacting the relevant variables with a dummy for explicit discrimination, as outlined in equation (2). In order to know if the different sources of explicit discrimination led to different behavior, we divided explicitly discrimination firms into three categories: those that exhibit gender restrictions (columns 1-3), those with beauty requests (columns 4-6), and those with a picture request (columns 7-9) –which are denoted by X in the explanatory variables column. Hence, the dummy represented by X should be interpreted with respect to the ads that did not exhibit the restriction and not only with respect to neutral ads. Table 6 presents these results, where the omitted racial category is again indigenous applicants. At first, firms that explicitly discriminate by gender do not seem to discriminate more along racial lines (Column 1, variable X and its interaction with race) than other firms. However, we find that ads with gender preferences tend to call white women more than other ads (Column 2) relative to indigenous women and they do not seem to discriminate men over any dimension (Column 3).

Table 6 also shows that ads with beauty preferences tend to prefer mestizo to indigenous applicants, but we do not find any significant effect on whites (Column 4). This behavior is mostly driven by their preferences for female mestizo applicants (Column 5). We also estimate that they tend to call women less: the coefficient on the beauty dummy in Column (5) is negative and statistically significant, which contrasts with the case of men in Column (6). Finally, we identify that ads requesting a photograph in the CV tend to call more mestizo women than other ads.

Finally, Table 7 adds as regressors the interactions between married and the type of restriction in explicitly discriminating ads. So it looks into the effect of being married on the callbacks of discriminating ads. As expected, we find that those with gender restrictions discriminate against married women, but all other ads do not seen to discriminate them. In the case of women (Column 2), the coefficient of Married is close to zero and statistically insignificant, but the coefficient of the interaction between Married and the explicitly discriminating ad by gender is negative and significant: actively discriminating ads call married women 10.5 percentage points less than single women, which amounts to a 70 per cent drop in the callback rate for married women (as compared to the mean callback rate of women in the sample). In contrast, ads that discriminate on the basis of beauty or through picture requests do not target single women (the coefficient on the interaction Married*X is not statistically significant in columns 5 and 8). We also look at triple interactions between race, marital status and explicit discrimination, but we have very little variation in these interactions to identify any effect (results not shown).

In sum, we find that explicitly discriminating ads tend to discriminate even more than neutral ads. Ads with gender preferences callback white women and single women more often than other ads; in fact those ads explain the marriage penalty that we observe on women. Ads with beauty or photo requests tend to favor mestizo women as compared to other ads, and do not display any preference toward marital status.

Discussion and conclusions

While conducting a correspondence study to uncover discrimination in the Mexican labor market, we find that some job ads explicitly excluded entire segments of the population by expressing their preferences for a particular gender, age group, attractiveness, a photograph in the CV, or marital status. About 10.5 per cent of the job ads in our sample requested either male (5 per cent) or female (5.5 per cent) applicants; 5 per cent of job ads requested "good presentation" which we interpreted as beauty in this paper; and 12.6 per cent of job ads requested a picture in the resume. In this paper, we tested whether this explicit discrimination leads to further discrimination in the hiring process. Kuhn and Shen's (2013) paper stated that explicit discrimination does not necessarily imply that there will be discrimination in a correspondence study. Here, we found that the two forms of discrimination are in fact correlated in the Mexican case: explicitly discriminating firms tend to discriminate more against indigenous-looking females and against married females. We think that this additional discrimination in the hiring process is due to the fact that the firms leave unstated preferences in their job ads, which they then transfer into the first contact with job applicants.

In addition to those results, some of the results in our correspondence study are better explained once we consider Delgado Helleseter et al. (2014) finding on an age-twist in gender preferences. Even though, female and male preferences in job ads are more or less balanced, the authors found that firms tend to prefer young attractive females and old skilled men. Hence, there is a strict female preference for young workers, and a strict male preference for older workers. Given this finding, we can better explain why females get more callbacks than males in our experiment which is restricted to college graduates between 21 and 27 years old: a sample that is biased towards uncovering the preference for young females. Although we are not able to find an age-twist, given our limited age range, we did find some evidence that ads preferring female also requested beauty, a photograph and being single; whereas ads requesting males tended to request a foreign language, time availability and willingness to move or travel. All these gender-specific requests point to a preference for a female-beauty combo, and a male-skills combo, which is also implied by the age-twist. Since whiter people are considered more beautiful in Mexico, those preferences would also help us explain why firms discriminate women on a racial basis, but not males, and why women receive a marriage penalty in their callback rates. In fact, we found that discrimination on the basis of marital status comes from job ads requesting female applicants.

Ideally, there would be no type of discrimination in the labor market so that every worker could have an opportunity to demonstrate her productivity. However, workers search for jobs in a market where there is discrimination and thence the public policy implications of our results are not entirely clear. According to Kuhn and Shen's (2013) job advertisement model, firms search narrowly for job applicants in order to save on search costs. So prohibiting these narrow searches may only increase firm's search costs and they may only transfer those preferences to discrimination in

callbacks. Since search costs are part of the firms' adjustment costs, that prohibition may lead to a sluggish adjustment of the labor demand.

Notwithstanding, the Mexican Supreme Court recently forbid firms to explicitly discriminate on the basis of age in their job ads. The basis of the ruling stated that younger workers are not necessarily more productive, given that the age-productivity relationship is highly heterogeneous across individuals, and that in fact experience may lead to higher productivity. The effects of this ruling though may be entirely muted if firms have a relatively costless means to inquire about the applicants' ages. Having the age information in the CV allows firms to screen applicants relatively cheaply. The Mexican authorities may thus need to regulate the type of information that firms are allowed to request in the CV such as age and a photograph.

Appendix A

Photographs of the fictitious applicants

WOMEN
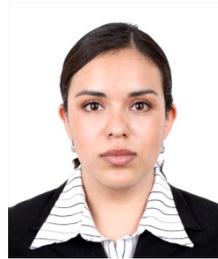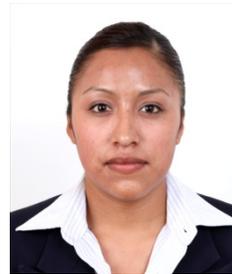
| White | Mestizo | Indigenous |

MEN

| White | Mestizo | Indigenous |

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Table 1: Descriptive statistics of the CVs sent

	All	Men	Women
A. Personal information			
Women	0.511		
Married	0.272	0.288	0.257
Age	24.511	24.602	24.424
B. Education characteristics			
Public college	0.624	0.640	0.609
Business Degree	0.712	0.696	0.727
Scholarship	0.256	0.235	0.276
Public High School	0.502	0.469	0.533
C. Other items in the CVs			
Other Language	0.252	0.254	0.250
Time availability	0.503	0.511	0.495
Leadership	0.502	0.491	0.512
D. Outcome variable:			
Callback rate	0.127	0.104	0.149
Observations	8122	3974	4148

Notes: Estimates by the authors based on the sample of sent fictitious CVs. All variables are dichotomous with the exception of age. Business majors include accounting, business administration and economics.

Table 2: Explicit discrimination in job ads and specific requirements

	Any job ad	Job ads with gender preferences			
		Men	Women	Women-Men	p-value
	[1]	[2]	[3]	[4]	[5]
Panel A: Explicit discrimination					
Any discriminating request	0.2470				
Gender	0.1090	0.4045	0.5955	0.1909	0.000
Marital status	0.0142	0.0225	0.0439	0.0214	0.091
Married	0.0142	0.0112	0.0076	-0.0036	0.581
Single	0.0113	0.0112	0.0363	0.0250	0.022
Photograph request	0.1261	0.1433	0.2233	0.0800	0.003
Beauty	0.0502	0.0084	0.1374	0.1290	0.000
Panel B: Other requests					
English	0.2271	0.2584	0.1794	-0.0790	0.005
Willing to travel	0.0857	0.2360	0.0496	-0.1863	0.000
Willing to move	0.0053	0.0393	0.0000	-0.0393	0.000
Time flexibility	0.0062	0.0225	0.0076	-0.0148	0.063

Notes: Authors' estimations using the job ads data. Estimates in the first column use all the ads, whereas estimates in the last four columns restrict the sample to those ads with gender restrictions. Column (1) presents the proportion of job ads explicitly stating each requirement. Columns (2) and (3) present the proportion of ads with gender restrictions pertaining to males and females, respectively. Column (4) presents the difference between Women and Men, and finally Column (5) presents the p-value of that difference.

Table 3: Econometric results

	All	Women	Men	All	Women	Men
	[1]	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**
Woman	0.046***			0.034***		
	[0.008]			[0.008]		
Married	-0.010	-0.028**	0.008	-0.005	-0.016	0.008
	[0.008]	[0.013]	[0.011]	[0.009]	[0.014]	[0.012]
White	0.024***	0.034***	0.011	0.021**	0.026*	0.012
	[0.007]	[0.012]	[0.010]	[0.008]	[0.013]	[0.012]
Mestizo	0.016**	0.021**	0.011	0.013*	0.013	0.013
	[0.007]	[0.011]	[0.010]	[0.008]	[0.012]	[0.011]
No photo	-0.006	-0.006	-0.006	-0.004	-0.006	-0.002
	[0.008]	[0.012]	[0.010]	[0.008]	[0.012]	[0.011]
Sample	Complete	Complete	Complete	8-set	8-set	8-set
Observations	8,056	4,117	3,939	6,310	3,158	3,152

Notes: Estimation by the authors using a probit model. The coefficients shown represent marginal effects evaluated at the sample mean. Standard errors in brackets are robust and clustered at the firm level. All regressions also control for age, business dummy, scholarship dummy, public college/high-school dummy, dummies for foreign language, and a leadership dummy. Columns (1) to (3) use all the sample. Columns (4) to (6) use the sample of ads to which we sent 8 CVs (8-set sample).

  *** Significance at the 1 percent level.
   ** Significance at the 5 percent level.
    * Significance at the 10 percent level.

Table 4: Effect of marriage on callbacks by gender and race

	Women		Men	
	[1]	**[2]**	**[3]**	**[4]**
Married	-0.065***	-0.047*	0.042*	0.042*
	[0.025]	[0.028]	[0.022]	[0.025]
White	0.024*	0.012	0.025*	0.025
	[0.014]	[0.016]	[0.014]	[0.016]
Mestizo	-0.000	-0.006	0.027*	0.027*
	[0.013]	[0.015]	[0.014]	[0.015]
No picture	-0.007	-0.004	0.011	0.014
	[0.014]	[0.015]	[0.015]	[0.016]
White * Married	0.047	0.055	-0.033	-0.032
	[0.044]	[0.051]	[0.023]	[0.027]
Mestizo * Married	0.118**	0.099	-0.040**	-0.036
	[0.055]	[0.063]	[0.020]	[0.024]
No picture * Married	0.018	0.002	-0.044**	-0.043*
	[0.043]	[0.042]	[0.021]	[0.024]
Sample	Complete	8-set	Complete	8-set
Observations	4,117	3,158	3,939	3,152

Notes: Estimation by the authors using a probit model. The coefficients shown represent marginal effects evaluated at the sample mean. Standard errors in brackets are robust and clustered at the firm level. All regressions also control for age, business dummy, scholarship dummy, public college/high-school dummy, dummies for foreign language, and a leadership dummy.

*** Significance at the 1 percent level.
** Significance at the 5 percent level.
* Significance at the 10 percent level.

Table 5: Probability of callbacks using explicitly discriminating ads vs. neutral ads

	Explicitly discriminating ads			Neutral ads		
	All	Women	Men	All	Women	Men
	[1]	[2]	[3]	[4]	[5]	[6]
Woman	0.081***			0.033***		
	[0.021]			[0.008]		
Married	-0.024	-0.057*	0.009	-0.006	-0.017	0.006
	[0.018]	[0.030]	[0.025]	[0.009]	[0.014]	[0.013]
White	0.030**	0.054**	0.002	0.021**	0.027**	0.013
	[0.015]	[0.023]	[0.020]	[0.009]	[0.013]	[0.012]
Mestizo	0.022	0.059**	-0.006	0.014*	0.009	0.017
	[0.015]	[0.023]	[0.020]	[0.008]	[0.012]	[0.012]
No picture	-0.005	0.007	-0.023	-0.003	-0.003	-0.002
	[0.024]	[0.034]	[0.024]	[0.008]	[0.012]	[0.011]
Sample	Explicit	Explicit	Explicit	Neutral	Neutral	Neutral
Observations	1,940	1,056	884	6,116	3,061	3,055

Notes: Estimation by the authors using a probit model. The coefficients shown represent marginal effects evaluated at the sample mean. Standard errors in brackets are robust and clustered at the firm level. All regressions also control for age, business dummy, scholarship dummy, public college/high-school dummy, dummies for foreign language, and a leadership dummy.

 *** Significance at the 1 percent level.
  ** Significance at the 5 percent level.
   * Significance at the 10 percent level.

Table 6: Explicit discrimination in job advertisements and the probability of a callback

X -->	Gender restrictions			Beauty			Picture		
	All	**Women**	**Men**	**All**	**Women**	**Men**	**All**	**Women**	**Men**
	[1]	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**	**[7]**	**[8]**	**[9]**
Woman	0.044***			0.048***			0.041***		
	[0.008]			[0.009]			[0.009]		
Married	-0.011	-0.027**	0.008	-0.010	-0.027**	0.008	-0.011	-0.028**	0.007
	[0.008]	[0.013]	[0.012]	[0.008]	[0.013]	[0.012]	[0.008]	[0.013]	[0.012]
White	0.020***	0.024**	0.012	0.023***	0.032***	0.011	0.021***	0.029**	0.010
	[0.007]	[0.011]	[0.011]	[0.007]	[0.011]	[0.010]	[0.008]	[0.012]	[0.011]
Mestizo	0.014**	0.015	0.012	0.013*	0.014	0.011	0.014**	0.010	0.018*
	[0.007]	[0.011]	[0.010]	[0.007]	[0.010]	[0.010]	[0.007]	[0.011]	[0.011]
No photo	-0.004	-0.006	-0.003	-0.007	-0.008	-0.008	-0.006	-0.008	-0.006
	[0.008]	[0.012]	[0.010]	[0.007]	[0.011]	[0.009]	[0.007]	[0.011]	[0.009]
X	0.028	0.046	0.002	-0.026	-0.069*	-0.013	-0.019	-0.002	0.004
	[0.024]	[0.034]	[0.032]	[0.034]	[0.036]	[0.043]	[0.023]	[0.029]	[0.027]
White * X	0.037	0.066*	-0.011	0.014	0.023	0.011	0.014	0.027	0.006
	[0.025]	[0.035]	[0.032]	[0.030]	[0.043]	[0.058]	[0.019]	[0.030]	[0.030]
Mestizo * X	0.017	0.037	-0.011	0.057*	0.091**	0.011	0.010	0.061**	-0.043
	[0.023]	[0.031]	[0.033]	[0.033]	[0.040]	[0.050]	[0.019]	[0.030]	[0.026]
No photo * X	-0.008	0.010	-0.033	0.039	0.031	0.054	0.082	0.110	0.058
	[0.024]	[0.037]	[0.025]	[0.051]	[0.053]	[0.071]	[0.100]	[0.116]	[0.100]
Women * X				-0.031			0.039		
				[0.033]			[0.024]		
Sample	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete
Observations	8,056	4,117	3,939	8,056	4,117	3,939	8,056	4,117	3,939

Notes: Estimation by the authors using a probit model. The coefficients shown represent marginal effects evaluated at the sample mean.
Standard errors in brackets are robust and clustered at the firm level. All regressions also control for age, business dummy, scholarship
dummy, public college/high-school dummy, dummies for foreign language, and a leadership dummy.
   *** Significance at the 1 percent level.
   ** Significance at the 5 percent level.
    * Significance at the 10 percent level.

Table 7: Explicit discrimination in job advertisements and the probability of a callback

X -->	Explicit discrimination measured by X:								
	Gender restrictions			Beauty			Picture		
	All	Women	Men	All	Women	Men	All	Women	Men
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Woman	0.043***			0.047***			0.041***		
	[0.008]			[0.008]			[0.009]		
Married	-0.000	-0.010	0.011	-0.011	-0.030**	0.008	-0.014	-0.034**	0.006
	[0.009]	[0.014]	[0.012]	[0.008]	[0.014]	[0.012]	[0.009]	[0.014]	[0.012]
White	0.020***	0.024**	0.013	0.023***	0.032***	0.011	0.021***	0.030**	0.010
	[0.008]	[0.012]	[0.011]	[0.008]	[0.012]	[0.010]	[0.008]	[0.013]	[0.011]
Mestizo	0.015*	0.016	0.013	0.013*	0.015	0.011	0.015**	0.011	0.018
	[0.007]	[0.011]	[0.011]	[0.007]	[0.011]	[0.010]	[0.008]	[0.011]	[0.011]
No picture	-0.005	-0.008	-0.003	-0.008	-0.008	-0.008	-0.006	-0.007	-0.006
	[0.008]	[0.013]	[0.010]	[0.008]	[0.012]	[0.010]	[0.008]	[0.012]	[0.010]
X	0.057*	0.073*	0.020	-0.033	-0.078**	-0.008	-0.023	-0.010	-0.000
	[0.029]	[0.040]	[0.040]	[0.038]	[0.036]	[0.041]	[0.025]	[0.031]	[0.030]
White * X	0.025	0.062*	-0.019	0.022	0.031	0.008	0.013	0.021	0.008
	[0.023]	[0.035]	[0.028]	[0.039]	[0.065]	[0.058]	[0.020]	[0.031]	[0.031]
Mestizo * X	0.009	0.029	-0.014	0.074	0.130**	0.009	0.007	0.058*	-0.038*
	[0.021]	[0.030]	[0.029]	[0.046]	[0.063]	[0.048]	[0.019]	[0.034]	[0.021]
No picture * X	-0.008	0.019	-0.037*	0.049	0.031	0.065	0.082	0.110	0.060
	[0.022]	[0.037]	[0.022]	[0.073]	[0.080]	[0.093]	[0.105]	[0.122]	[0.106]
Women * X				-0.029			0.037		
				[0.030]			[0.027]		
Married * X	-0.077***	-0.105***	-0.035	0.017	0.056	-0.014	0.029	0.048	0.012
	[0.018]	[0.019]	[0.036]	[0.042]	[0.062]	[0.041]	[0.032]	[0.049]	[0.041]
Sample	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete
Observations	8,056	4,117	3,939	8,056	4,117	3,939	8,056	4,117	3,939

Notes: Estimation by the authors using a probit model. The coefficients shown represent marginal effects evaluated at the sample mean. Standard errors in brackets are robust and clustered at the firm level. All regressions also control for age, business dummy, scholarship dummy, public college/high-school dummy, dummies for foreign language, and a leadership dummy.
 *** Significance at the 1 percent level.
  ** Significance at the 5 percent level.
   * Significance at the 10 percent level.