

A FIELD EXPERIMENT TO STUDY SEX AND AGE DISCRIMINATION IN SELECTION PROCESSES FOR STAFF RECRUITMENT IN THE SPANISH LABOR MARKET

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P. T. N.º 20/08

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Edita: Instituto de Estudios Fiscales

N.I.P.O.: 602-08-004-3

I.S.S.N.: 1578-0252

Depósito Legal: M-23772-2001

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ABSTRACT

This article presents the findings of a field experiment carried out in Madrid which aim was to analyse gender and age discrimination in hiring in the labour market of Madrid. A set of five pairs of fictitious man-woman curricula were sent in response to 1,062 job offers in six occupations which were advertised on Internet over an eight-month period. It was quantified subsequently the extent to which the different firms contacted more or less the candidates of different sex, age and marital status. No discrimination is detected against women in terms of access to job interviews; however, discriminatory conduct is seen regarding the phenomenon of occupational gender, in the sense that there is a continuance among employers of stereotyped views on the greater suitability of women for certain tasks. No evidence is found to indicate firms showing relative discrimination against married women with children in the first phase of hiring process. And a clear evidence of discrimination is obtained on the basis of age: firms show a substantial fall in interest over interviewing 38-year-old candidates (compared to those aged 24 or 28). This would imply that the tendency to discriminate against older workers may be high, and, what is more, it may start at a surprisingly young age.

Keywords: Field experiments, correspondence test, gender discrimination, age discrimination.

JEL classification: J71, J24, K31.

INTRODUCTION

In the literature on inequality (gender, racial, etc) in the labour market a distinction is frequently made between the causes of this inequality of results (in wages, professional promotion, etc.) having their origin on the supply side of labour and those originating on the demand side of labour. In the first case reference is made to the fact that members of the non-favoured group may have on average levels of human capital or attitudes which are different from those of the favoured group (and which are a result of previous situations of inequality or discrimination); and in the latter, reference is made to the fact that the firms may display discriminatory behaviour against the non-favoured group in several areas, such as hiring, wages and professional promotion.

The most usual (and indirect) way of estimating discrimination by firms consists of using the Oaxaca-Blinder type of methodology (Oaxaca 1973; Blinder 1973), in which from microdata stemming from a labour survey, an econometric analysis is made in which all the observable characteristics (that may influence the productivity) of the members of the non-favoured and favoured groups are incorporated, and where an estimate is also made as to the performance achieved by the members with these characteristics. Once the differences (in average or throughout the distribution) among the characteristics of both groups as well as the differences in their performances are discounted, an estimate is obtained of the degree of discrimination shown by firms against the non-favoured group compared to the favoured one (for example in wages).

By contrast to this methodology field experiments in their different forms try to give a direct measurement of discrimination practised by firms against the non-favoured group. It consists of the use of pairs of fictitious candidates, which are basically the same in all their characteristics except one (sex, ethnic group, age, etc), who respond to job offers made by firms in the labour market. To the extent that the experiment has been carefully and correctly designed, if it is detected that the candidates from the non-favoured group are less in demand than those belonging to the other group (for example, fewer black candidates than white ones are given job interviews), then direct evidence of firms' discrimination against them will have been obtained.

In this article the findings are presented for a field experiment carried out in the Autonomous Community of Madrid, belonging to the modality known as "correspondence testing". In standard staff selection processes there are two stages; the first when firms contact candidates they are interested in, and the second when a job interview takes place. In "correspondence testing" analysis is made only for the first stage, that is, after the corresponding pairs of fictitious curricula are sent to firms, the cases where the firms contact the candidates (by phone, E-mail, etc.) are registered.



In our field experiment, a set of five pairs of fictitious man-woman curricula were sent in response to 1,062 job offers in six occupations which were advertised on Internet (by the Infojobs web portal) over an eight-month period. It was quantified subsequently the extent to which the different firms contacted more or less the candidates of different sex, age and marital status.

In fact, the sending of five pairs of curricula for each vacancy (ten curricula per vacancy) served to consider in the analysis not just the candidates' sex, which is the central variable in the experiment, but also their age (24, 28 or 38 years of age) and their marital status (unmarried without children or married with children). In this way it has been possible to achieve the double aim of detecting possible cases of discriminatory conduct by employers in the field of gender (discrimination against women, job segregation, and maternity penalty) and age (discrimination against older workers).

As far as the findings are concerned, the following aspects are worthy of note: No discrimination is detected against women in terms of access to job interviews; however, discriminatory conduct is seen regarding the phenomenon of occupational gender segregation. Thus, in two female-dominated occupations analysed (assistant/receptionist and secretary), women receive three times more calls than men. This shows that there is a continuance among employers of stereotyped views on the greater suitability of women for certain tasks. In the two gender-integrated occupations analysed, accountant's assistant and accountant, not only was there no sign of discrimination against women in terms of access to job interviews, but in one of them, accountant's assistant, a statistically significant result was obtained in which women received 44% more calls than men. This would imply that firms are favouring the feminisation of some low-level occupations, such as this one. And in the two slightly male-dominated occupations analysed, sales representatives and marketing technician, discrimination against women is not found: very similar call-back rates have been observed for candidates of both sexes.

Moreover, though firms are seen to tend to penalise people for having children, and seem to penalise women relatively more, this finding is not statistically significant, that is, in this experiment no evidence is found to indicate firms showing relative discrimination against married women with children in the first phase of hiring processes.

On the other hand, a clear indication of discrimination is obtained on the basis of age: firms show a substantial fall in interest over interviewing 38-year-old candidates (compared to those aged 24 or 28). This would imply that the tendency to discriminate against older workers may be high, and, what is more, it may start at a surprisingly young age.

Finally, in considering salaries provided by firms in their job offers¹, a slight women-men wage gap of 95.31 is observed, which could be completely ex-

¹ Salaries offered by firms figured in many job advertisements, since this concept figures in the standard Infojobs advertising format

plained by the existence of job segregation by gender. Jobs with a lower level and salary coincide with those where firms analysed have shown a majority interest in female candidates.

The rest of the article is structured as follows: in section 1 a review is made of existing literature on field experiments, with special emphasis on contributions made in fields concerning discrimination on the grounds of sex or age. This enables a comparison with the findings obtained in the present experiment. In section 2 a detailed description is given as to how the experiment was designed. In section 3 the findings obtained are presented, interpreted and compared with those achieved in other experiments; specifically, an analysis is made of rates of response (call-backs rates) by firms according to sex, marital status and age, after which a section is added devoted to salaries offered by firms to candidates. The article ends with section 4, devoted to conclusions.

I. FIELD EXPERIMENTS: PREVIOUS METHODOLOGIES AND RESEARCH

Field experiments applied to discrimination have been performed over more than 30 years (see Riach and Rich, 2002). Basically, they comprise using pairs of similar candidates who are similar/equal in all their characteristics except for one (ethnic group, sex, age, etc), who apply for a job, housing or product. After a careful preparation of this controlled experiment which, as we shall see later on, has several modalities, and obtaining the corresponding findings, a quantification is made of the extent to which one type of candidate is more acceptable than the other (for example, whether more white than black candidates are summoned for job interviews).

The main areas in which this type of experiment has been applied are those of discrimination in job access (see, among others, Daniel 1968; Firth 1981; Riach and Rich 1987; Bendick *et al.* 1991; Kenney and Wissoker 1994; Neumark *et al.* 1996; Prada *et al.* 1996; Weichselbaumer 2004; Duguet and Petit 2004; and Bertrand and Mullinaithan 2004), discrimination in access to housing (Wienk *et al.* 1979; Yinger 1986; Galster and Constantine 1991; Yinger 1998; Ahmed and Hammarstedt 2007), and discrimination in other goods markets, such as the car market (Ayres 1991; Ayres and Siegalman 1995).

With respect to types of field experiments applied to discrimination in access to jobs, two can be distinguished (see Riach-Rich 2002): “Personal approaches” and “Correspondence testing”

“Personal approaches”, or *audit tests*, in which two candidates, actors trained for the purpose, turn up in person for a job interview with a potential employer. The qualifications, merits capabilities and style of presentation of both actors are

the same as far as possible, so that they are practically identical in all relevant characteristics for the job and are only different in one trait, ethnic group, sex, age, having a disability, etc. These are two-stage studies. In the first one the two candidates reply to (in writing, by phone, etc) the job offers made by the firms. Thus it can be quantified to what extent the members of each group (for example whites and blacks) are summoned more or less to an interview. In the second stage, now just for cases where the two candidates have been called for an interview, it is quantified the extent to which, after the personal interview, members of one group or another are chosen more or less. Examples of this kind of study are those promoted by the ILO for the study of discrimination among immigrant workers in developed countries (Prada *et al.* 1996; Neumark *et al.* 1996), based on a standard methodology (Bovenkerk 1992). In any case, as mentioned by Riach and Rich (2006), in such studies the bulk of discrimination has *always* been detected at the first (invitation to interview) stage.

Correspondence testing, which consists of sending pairs of curricula for job offers (normally letter and curriculum), very similar in everything except the trait to be analysed, has the purpose of comparing whether there is discrimination in hiring in the early stage of selection for holding an interview (the second stage of sending the couple of actors to hold the interview is not performed). The advantages of correspondence testing over the personal approach are several: it avoids the criticism made of the personal approach (Heckman 1998), that however much the two actors are prepared, insofar as both feel committed to the aim of combating discrimination, they can skew their answers in the interviews consciously or unconsciously so that appreciable differences appear between the two groups. This is not the case with the correspondence test, since only the pair of curricula designed by the researcher is involved. Moreover, they are rotated between the two applicants. The correspondence test is much cheaper to carry out; moreover, it makes it possible to have a much larger number of observations (most studies of this type send over five hundred pairs of curricula). As recent examples of this type of experiments those by Bendick *et al.* (1999); Weichselbaumer (2004), Duguet and Petit (2004), and Bertrand and Mullainathan (2004); Lahey (2005); Riach and Rich (2006 and 2006b) and Carlsson and Rooth (2006) can be mentioned.

Correspondence testing has been used mainly to analyse discrimination against ethnic minorities (for example, recently Bertrand and Mullainathan 2004 and Carlsson and Rooth 2006). Nonetheless, it has also been used in other fields, such as discrimination on the grounds of gender, age and disability. Below some of the main contributions in the field of discrimination by sex and age are quoted, which are the ones considered in this experiment.

Regarding gender discrimination, Firth (1982) carried out an analysis of sexual discrimination in the accounting profession in Great Britain, sending for this purpose two pairs of curricula (man and woman) to firms advertising jobs for ac-

countants in the press. The success rate of women in achieving interviews for a job vacancy was less than that for the men, and this rate was even less in the case of coloured women or those with children. Riach and Rich (1987) carried out their experiment in Melbourne, between 1983 and 1986 and, of seven occupations analysed, two of them produced a result which was significant statistically in showing net discrimination against women. Weichselbaumer (2004) performed his experiment in Vienna, analysing two male-dominated occupations (systems technicians and programmers) and two female-dominated ones (secretaries and accountants). Three types of candidates were prepared: a man, a “masculine” woman (in whose curriculum were habits stereotyped as masculine) and a “feminine” woman (with stereotyped feminine habits). The main hypothesis to be tested was that “masculine” women would be treated like men in male-dominated occupations whereas “feminine” women would be deemed unsuitable for these posts. This hypothesis was not confirmed; evidence was found of discrimination against the two types of women in men-dominated occupations and discrimination against men in female-dominated occupations, and no statistically significant difference between the two types of women was found in male or female-dominated occupations. Duguet and Petit (2004) carried out their experiment in Paris, analysing the financial sector. They considered two ages (25 and 37), two family situations (with and without children) and two levels of qualification (medium and high). Among the findings they obtained the outstanding fact was that the response rate for women compared to that for men is significantly lower when the subgroup of candidates aged 25 and with no children is analysed. This provides some evidence of the existence of statistical discrimination given that firms would make less frequent calls on women who were fairly likely to have children in the medium-long term. And Riach and Rich (2006) carried out this experiment for the case of England, sending pairs (woman-man) of curricula to four occupations, two of which were highly segregated in gender terms. The findings obtained were that men were more discriminated against in the job of secretary (female-dominated occupation) and women in engineering jobs (male-dominated occupation), but, even more so, a statistically significant result of discrimination against men was obtained in the accounting and program analyst professions, which are two integrated occupations in gender terms in England.

Also, among the experiments devoted to discrimination on the grounds of age the most significant ones were those of Bendick *et al.* performed in the Washington area; that of Lahey (2005), carried out in Boston and St Petersburg (Florida); and that of Riach and Rich (2006b) carried out in Paris and the rest of France². In these three experiments curricula of pairs of candidates were sub-

² They also have just been carried out the same kind of experiment for Spain (Riach and Rich 2007), obtaining very similar results to that's of France.



mitted which were very similar in everything except age³ (a young candidate and an older one), and in the three cases there were statistically significant findings of discrimination against the oldest candidate, discrimination which was quantitatively very high. In fact, the levels of age discrimination seem to be higher than the levels of discrimination against ethnic groups (and these are quite high).

2. DESIGN OF THE EXPERIMENT

2.1. Format and style of the curricula

The curricula were designed in accordance with the style and format normally used in the Spanish labour market. Moreover, it must be borne in mind that in this experiment most curricula were sent via the Internet Infojobs portal. In that labour-site users are offered a series of standard curriculum models. From these the “chronological curriculum” has been chosen and used, this being the one most commonly used for white collar jobs, which are the ones analysed here.

They are brief curricula (see annex) with the following sections: The candidate’s personal data: name, date and place of birth, marital status, number of children, etc. *Candidate’s training*: he/she always possesses an official title, which will be “formación profesional II” (professional training), for candidates aspiring to the three occupations requiring medium-low qualifications which were analysed; or a university degree or equivalent, for candidates aiming to work in the three high-qualification occupations; furthermore, candidates will have always some form of complementary training, such as courses, seminars, etc. *Professional experience*: where curricula display professional experience commensurate with the aspirant’s age and education, and professional careers designed so that periods of unemployment do not appear, either in the present or in the past. *Knowledge of languages*: all the candidates speak English, with a medium or high level, depending on the occupation for which the curriculum was sent; and, in some cases, such as the job of secretary, the candidates also speak a third language. *Knowledge of computer programming*, which will be lesser or greater according to the job the curriculum is aspiring to. And in the curricula there is a final section devoted to “*other data of interest*”, where aspects are included such as “availability to travel”, experience in teamwork, etc. There is no section on hobbies, since this does not appear in the standard curriculum model offered by Infojobs.

³ Except age and professional experience, which is lengthier in the case of the oldest candidate, at least in the two or three experiments quoted. On this question further comment will be made in the next section.

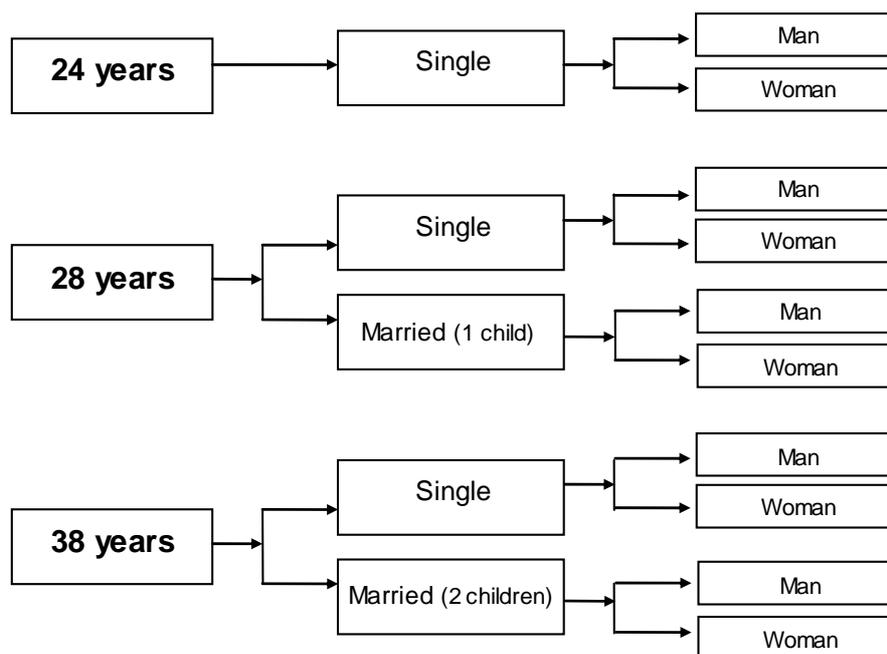
2.2. Ten personal profiles

In this experiment the reference variable is the man-woman pair. Nonetheless, two extra variables are also considered which are going to give rise to ten personal candidate profiles; age, 24, 28 and 38; marital status, unmarried (all candidates aged 24 and half of those who are 28 or 38) and married⁴ (the other half of those who are 28 or 38).

Thus, for each of the job offers made by the firms ten curricula have been sent, differentiated by the combination of the candidate's age, marital status and sex; or, and this amounts to the same thing, in reply to each job offer five pairs (man-woman) of curricula have been sent differentiated by the combination of the candidate's age and marital status. In figure 1 the outline of these ten personal profiles is presented.

Figure 1

TEN PERSONAL PROFILES: FIVE PAIRS OF CURRICULA FOR EACH JOB OFFER



In most of the correspondence tests carried out in the area of gender discrimination, for each job offer a pair of man-woman curricula was sent. Nevertheless, in some cases more were sent. Recent examples of this are the experiment of Duguet and Petit (2004), who sent three pairs (six curricula) on the basis of the candidates' age and marital status; and Bertrand and Mullainathan (2004), who sent two pairs (four curricula), on the basis of the high or low quality of the content of the curricula. It can be argued that sending more than a pair of curricula for the same job offer may increase the likelihood of the firm detecting

⁴ The married candidate, also, had a child when he/she was 28, and two when he/she was 38.

that an experiment is being carried out. However, in the case of the present experiment it is possible that the sending of 10 curricula per offer does not present any further problem of detection for the following reasons: firstly, as was indicated before, the format of the curricula channelled through Infojobs is very homogeneous (all of them, fictitious and real, are very similarly structured); secondly, via Infojobs firms daily receive very large numbers of curricula, so the ten fictitious ones submitted are never going to account for a significant percentage of those received by firms; and, thirdly, in the present case the ten curricula are not very similar; the ones which are very similar are the pair for the 24-year-olds, the group of four aged 28 and the group of the four aged 38, since each of these three groups has been designed in a differentiated way, because as age increases more professional experience is added, and, moreover, the rotation of curricula takes place within each of these three groups, and not among them.

With these five pairs of curricula the aim is to send different signals to employers (apart from differences of sex, which is the main objective of the present experiment). There are three different age profiles which attempt to record the different treatment linked to the candidate's age. Likewise, for each of these ages one can be married or unmarried (except for people of 24, who are all unmarried). With this the aim is to register the different treatment based on family characteristics or responsibilities.

In fact, in the first place, an attempt is made to test for the existence of a phenomenon of age discrimination in access to job interviews. For that purpose three different ages, 24 28 and 38, have been used, and an attempt is made to quantify to what extent employers are reluctant to hire people (men or women) who are relatively old (38) compared to people who are relatively young (24 or 28).

In other experiments two widely differing ages have been used, as in the case of Bendick *et al.*, (1999) ,who considered a pair of candidates aged 25 and 57; or Lahey (2005), who used two candidates aged 35 and 62. In the case of Riach and Rich (2006b) that difference drops to 27 and 47. In the present study the age difference between the relatively young and the relatively old is greatly reduced to 24-28 and 38 years, so that in this manner these findings can be compared with the previous ones, and also to follow the recommendation of Riach and Rich (2002) in this sense.

As far as the design of the curricula is concerned, in order to bear in mind the recommendation of Riach and Rich (2002) once again, the candidates' professional experience has been adjusted to their age. For each of the six occupations analysed, in the curriculum the number of years of experience of candidates aged 28 and 38 is increased with respect to that of the 24-year-old candidate. This is done in accordance with two criteria; first, that increased experience is always in jobs within the same occupation; for example, the salesman aged 38 has 16 years of professional experience in several firms and has

always worked in sales-related jobs. Secondly, as his professional experience grew, he achieved more stable employment; that is, an attempt is made to transmit the signal to firms that the 38-year-old candidates have followed a reasonably satisfactory career path within the field they belong to; for example, the curriculum of the sales rep aged 38 shows that he changed jobs more frequently at the beginning of his career (probably they were more insecure jobs and on temporary contract), whereas as time passed he tended to stay longer in the same job (probably better quality and better paid work).

It is true that when professional experience is adjusted to age, the 10 curricula sent to each job offer are not essentially the same in everything except sex, marital status and age. In fact, and as has been mentioned before, the aim is to keep them basically identical within each age (among the two of age 24; the four aged 28 and the four aged 38). For example, the four curricula for the 28-year-olds, sent in response to a job offer, would basically be the same in all aspects except for the sex-marital status combination of each candidate (indeed random rotation took place with four curricula models among those four candidates). Thus, albeit the 10 curricula submitted for each offer are very similar, they are non-equivalent in terms of age, and though this prevents curriculum rotation among the 10 candidates sent to each offer, on the other hand, it leads to incorporating in the experiment the obvious fact that older candidates normally are more experienced, and, in line with what was said by Riach and Rich (2002), any finding in which the firms appear to show less interest in 38-year-old candidates, compared to those aged 28, when the former have at least 10 years more relevant experience would constitute significant and worrying evidence of age discrimination⁵.

Secondly, age differences along with marital status provide information about possible family responsibilities which candidates have. In Spain, according to the INE (2005), the average age for having the first child is 30.9 for women and nearly a year later for men. Thus, candidates aged 28 and married (with one child) are signalling to firms that they are at a time in their lives when one has the responsibility of looking after small children: the candidate has a small child, and may decide to have another, that is, the profile is one of a candidate with a large number of family responsibilities. In the case of candidates aged 38 and married (with two children) they are transmitting a signal quite similar to the previous one; albeit in this case, the candidate is more likely to have the two children in school and has already decided not to have any more.

⁵ Since the groups of curricula with different ages are non-equivalent, and therefore they were rotated within each age, and not among different ones, it could happen that the different interest evinced in the oldest candidates by firms might be due in part, to how well or badly the curriculum models for those with the greatest experience had been designed. In any case, when six occupations are analysed, any involuntary skewing of this type in the curriculum design could not give rise to the same sign in all of them. If in the six occupations it appears that firms call on 38-year-olds significantly less, that would constitute clear evidence of discrimination against older candidates.

Thus, when sending pairs of curricula for married people (with children) and unmarried people, an attempt is made to record (in line with Duguet and Petit 2004) to what extent employers penalise paternity; that is, to what extent do employers show less interest in hiring married candidates (with children) rather than the unmarried. Furthermore, if employers contact married women candidates to a lesser extent than married men, evidence will have been obtained of the penalisation suffered by women with children and not so much by men. This last finding would also confirm that the type of discrimination in existence is statistical⁶.

2.3. Six professional profiles: six occupations

The corresponding five pairs of curricula have been sent to firms offering jobs in six occupations: sales reps, marketing technicians, accountant's assistant, accountant, administrative assistant/receptionist and executive secretary. These are occupations which generate a fair number of daily offers in the Madrid labour market and, what is more, most of them are offered through Infojobs⁷.

As is indicated in Table I, these six occupations correspond to three areas of occupations: sales, accounting and secretarial. In the Spanish labour market jobs in sales are relatively male-dominated⁸; occupations in the field of accountancy are gender-integrated⁹; and those in the secretarial field are female domi-

⁶ If the discrimination were statistical (Phelps 1972; and Arrow 1972), the slight interest in hiring women would be based on the fact that employers believe that if they have small children the mothers may try to make paid work compatible with housework to a greater extent than fathers (so that this would have a more negative effect on their productivity than in the case of fathers); and in this case it would be clearly seen that women would be called relatively less often for job offers when they are married (and have children). However, if discrimination against women were seen to be the same for all ages and different marital status considered, then it could be proof that discrimination could be of the "a taste for discrimination" type as mentioned by Becker (1957).

⁷ Many job offers of this type are also published in the press or the firm's own website (if they are large companies). Nonetheless, in almost all these cases the advertisement appears in Infojobs.

⁸ For the job of sales rep the category closest to it, recorded in the CNO-94 (Clasificación Nacional de Ocupaciones, which is the Spanish adaptation of the International Standard Classification of Occupations, ISCO-88), in three digits, is "trade reps and sales technicians", which shows 20.83% of women in the second half of 2005 (according to the Encuesta de Población Activa, EPA). For the job of marketing technician there is no clear correspondence with any category of the CNO-94, and if it were assimilated to managers of sales or marketing departments of firms, in that case it would be included in the chapter of "Management of specialised areas and departments" where women account for 29.57%.

⁹ According to the EPA, for the second half of 2005, in the category of "assistants to accountants and financiers" (CNO-94-three digits) women accounted for 46.4% of the total number of workers. Moreover, accounting professionals are encapsulated in the category of "professionals in organization and business administration", where the percentage of women is 48.75%.

nated¹⁰. When the rates of response of firms corresponding to offers in these three groups of occupations are analysed, it is possible to analyse whether firms' behaviour also responds to the existing social stereotypes concerning alleged "female" and "male" occupations. In the experiments of Riach and Rich (1987 and 2006), Weichselbaumer (2004) and Bertrand and Mullainathan (2004) some of these occupations were also recorded, so it will be possible to compare the results of the present study with theirs.

Moreover, the two occupations making up each of the three areas correspond to two levels of qualification: low qualification and high qualification (see again Table I). In distinguishing between two levels of qualification an attempt is made to find out to what extent firms would have an interest in hiring relatively more women for occupations with a lower level of qualification (which normally are the occupations offering fewer chances of promotion).

Table I
PROFESSIONAL PROFILES: SIX OCCUPATIONS

	Low qualification	High qualification
Sales area	Sales reps	Marketing technicians
Accountancy area	Accountant's assistant	Accountant
Secretarial area	Administrative assistant/receptionist	Executive secretary

2.4. Sources from which job offers made by firms have been received

The basic source of information on job offers has been the employment website Infojobs.net, and only in a complementary way have offers of jobs published in the press (Sunday editions of "El País", "El Mundo" and "ABC") been used¹¹. From among all Internet employment sites it was decided to use Infojobs.net because it is the leading employment web in Spain: the number of job offers presented on it in September, 2006 was 65, 298. Moreover, nowadays, Infojobs channels through its webpage more job offers than all the traditional channels (press, INEM, etc.). Another advantage of using Infojobs is that when firms adver-

¹⁰ According to the EPA, in the category of "information employees and office receptionists" the percentage of women is 70.33, whereas in the category of "professionals in support of administrative management" where most secretaries are classified, women account for 66.93% (if separate data were available for the category of "executive secretary" the percentage would be much higher).

¹¹ After a trial period (a month), it was observed that most offers made through the written press were only for sales technicians, and that many of these offers were made indirectly via recruitment companies, that were out of the scope of our experiment. Our interest was centralized in those hiring selection process realized directly by the very firm. In this way, in order to be able to obtain enough job offers for the six occupations analysed, and also with the purpose of replying to the adverts more comfortably, it was decided to centre attention on offers published on Internet.



tise their job offers there they usually do so in a standard advertisement format which gives more information on it than usually appears in press adverts. Among other things, the firms advertising (most of them) give information on their size (number of employees in the firm), annual gross salary offered the candidate, and the type of contract offered (indefinite or temporary, part-time or full time, etc.).

2.5. Logistic organisation of the experiment

A database was created with a series of fictitious candidates, who were assigned a series of fictitious names taken at random from a telephone directory. Only names common in Spain were selected, to prevent the names sending another type of signal to firms (such as, for example, belonging to a minority ethnic group). Likewise, each name was assigned an E-mail address, which has been used for the candidate to write in reply to the job offers appearing in Infojobs.

Also, 10 mobile telephone lines were put into use allotted among the above-mentioned fictitious curricula. These 10 mobile phones corresponded to each of the 10 personal profiles registered in figure 1 above; or, to put it another way, 10 mobile phone numbers were used, one for each of the 10 curricula sent for each job offer. These 10 telephones were used as contacts for firms to get in touch with the candidates¹². Also used as a means of contact was E-mail, though the great majority of firms made contact by phone¹³.

Within each age group, in order to avoid skewing in candidates' replies which might have originated in the specific design of the curricula, a curricula rotation procedure was followed. The procedure was a random exchange of two curricula models between the two candidates aged 24 (unmarried woman, unmarried man), four curricula models among the group of candidates aged 28 (unmarried woman, unmarried man, married woman and married man), and four curricula models among the group of four candidates aged 38 (unmarried woman, unmarried man, married woman and married man).

2.6. Chronology of how the experiment was carried out

The experiment was performed in two stages. Indeed, after a test made in June, 2005, the results of which have not been included in the experiment, the

¹² It should be noted that calls received on each of the 10 mobile phones enabled identification to be made of at least the candidate's age, marital status and sex.

¹³ The curricula also contained the postal addresses of the candidates (street and house number, but the floor and letter number of the flat were not specified). They corresponded to two inner-city districts of Madrid (Chamberí and Argüelles). These are middle-high economic range. No follow up was made of possible contacts made by firms by letter to those addresses. Nevertheless, nowadays, firms hardly use this method of contacting candidates, and even less when they advertise job offers on the Internet.

project was really carried out in October, 2005 with a first phase lasting two months. In this six researchers and collaborators dealt with the job offers offered by firms in each of the six occupations analysed. They took charge of following up the job offers made by the firms as well as subsequently submitting the corresponding 10 curricula. Also, it was assigned each of the 10 mobile telephones among 10 researchers and collaborators, who received the calls of each of them and filled in the corresponding fields on the project' database, concerning occupation, day and firm calling each one of the profiles represented by each telephone. Altogether, replies were made to 293 firms offering jobs (all of them via Infojobs).

In a second phase, beginning in January, 2006, and lasting almost six months, both the organisation of the curricula and the receiving of telephone calls were centralised. On all working days from 9 to 14 hours two of the collaborators on the project worked exclusively on following up and managing firms' job offers, as well as receiving calls. After 2 p.m, telephones were unmanned and the answerphones were left on. Altogether, replies were made to advertisements from 769 firms (726 for Infojobs and 43 from the written press).

Both in the first and second phase, each time a phone call was received from a firm showing interest in some candidate, or, also, when a contact was made via answerphones or some candidate's E-mail, this contact was recorded on the database as was also, at that moment, all relevant information that might exist on the firm (in its advert), such as company size (number of employees), gross annual salary offered, type of contract offered, etc.¹⁴

3. RESULTS OF THE EXPERIMENT

3.1. Job offers and curricula submitted

As can be seen in Table 2, the five pairs of curricula have been sent to 1,062 adverts by firms offering jobs in the six occupations analysed. This means that 10,620 curricula were sent.

If a distinction is made according to occupations, the curricula sent in response to the adverts corresponding to the post of sales rep accounted for 21.28% of the total; those for marketing technicians were 20.34%; those for accountant's assistants 18.64%, for assistants/receptionists 16.57%, those for accountants 15.63%, and those for secretaries 7.53%. The reason for this distribution is exclusively the availability of adverts for jobs in each of these occupations.

¹⁴ In some case extra information has been recorded by using the SABI (System of Analysis of Iberian Balance Sheets) database.



Table 2
NUMBER OF FIRMS OFFERING JOBS TO THOSE SENDING THE 10 CURRICULA

Occupations	Number of offers
All	1.062
Sales reps	226
Marketing technicians	216
Accountant's assistant	198
Accountant	166
Administrative assistant/receptionist	176
Executive secretary	80

3.2. Global callback rates

From among the 1,062 firms to which the 10 curricula corresponding to each of the 10 personal profiles were sent, 276 of them contacted at least one of the candidates and, at the same time, they have been perfectly identified¹⁵.

For the analysis which is subsequently going to be made on distribution by sex, age and marital status, of the curricula to which these 276 firms replied, the indicator that is going to be used is firms' "callback rates", which is simply the percentage of curricula contacted by firms with respect to the total number of curricula sent.

In Table 3 it can be seen that the global callback rates amounted to 8.77%, that is, that of the 10,620 curricula submitted¹⁶, 931 have been contacted by firms.

3.3. Callback rates by sex

When the findings are broken down into men and women the result is that the callback for women, 10.06%, is higher than the one for men, 7.48%, thus producing a women-men gap of 134.51. What is more, these differences are statistically significant, as is shown by the P-value of the last column in table 3. Therefore, globally firms have shown more interest in interviewing female candidates rather than men. Now, it is clear that this global finding stems, largely, from the group of occupations chosen in the experiment.

¹⁵ In fact there were 472 firms which made contact with at least one candidate, and of them, 276 were perfectly identified, whereas the other 196 could not be identified. In terms of individuals, of the 1,355 individuals detected 931 could be identified (69% of the total individual contacts). The reason why not all the firms contacting the candidates could be identified is that the contacts were by phone and, in some cases, particularly when the firms left a message on the answerphone, they did not give any identification.

¹⁶ 1,062 firms multiplied by 10 curricula submitted to each of them.

For this reason it is necessary to show the findings, separately, of each of the six occupations analysed, as is done in the rest of table 3. As was to be expected, in the two female-dominated occupations, assistant/receptionist and secretary, women receive more calls than men (this result is statistically significant); specifically, women receive three times more calls than men, with a women-men gap of 306.67 and 315.0, respectively. But in the two integrated occupations, assistant accountant and accountant, women also receive more calls than men, with women-men gaps of 144.16 and 109.43, respectively, and with a result, for assistant accountant, in which the difference between the callback rates for women and men is statistically significant. This implies that for this occupation firms clearly go for women rather than men candidates. Besides, in the two male-dominated occupations, sales reps and marketing technicians, firms have not shown a greater interest for men: callback rates are both quite similar, with a women-men gap of 96.35 and 100, respectively.

These data have a certain parallelism with those of Rich and Reich (2006), which for the case of England, show that there is clear discrimination against men (statistically significant) in the case of the two gender-integrated occupations that they consider, accountants and program analysts, discrimination that is, surprisingly, of a very high degree (firms call women almost four times more than men).

Table 3
CALLBACK RATES AND WOMEN-MEN GAP

	Callbak rates for women & men	Callback rates for women	Callback rates for men	Gap W-M	Difference W-M (p-value)
All curricula Sent	8.77% [10.620]	10.06% [5.310]	7.48% [5.310]	134.51	2.58% (0.000)
Sales reps	16.68% [2.260]	16.37% [1.130]	16.99% [1.130]	96.35	-0.62% (0.346)
Marketing technicians	2.31% [2.160]	2.31% [1.080]	2.31% [1.080]	100.00	0.00% (0.500)
Accountant's assistant	9.49% [1.980]	11.21% [990]	7.78% [990]	144.16	3.43% (0.005)
Accountant	6.69% [1.660]	6.99% [830]	6.39% [830]	109.43	0.60% (0.312)
Adm. assistant/receptionist	6.93% [1.760]	10.45% [880]	3.41% [880]	306.67	7.05% (0.000)
Executive secretary	10.38% [800]	15.75% [400]	5.00% [400]	315.00	10.75% (0.000)

Note. The number appearing in brackets below each callback rate is the number of curricula submitted. The P-value has been obtained from statistical Z of difference of proportions:

$$Z = \frac{|P_{\text{male}} - P_{\text{female}}|}{\sqrt{\frac{N_{\text{male}} + N_{\text{female}}}{N_{\text{male}} \cdot N_{\text{female}}} P_{\text{total}} \cdot (1 - P_{\text{total}})}}$$



Regarding the interpretation of these findings, several ideas stand out: In the first place, after more than two decades in which women have been joining the Spanish labour market in massive numbers, it may be that at the present time the idea of gender equality pronounced in many political, media and social circles is sinking in among employers. In fact, in recent years, different levels of government (municipal, regional and national) are seen to be stressing the policies of equality, and this may be having an effect in the sense that, in certain integrated occupations, such as accounting, employers do not discriminate against hiring women; or in the case of male-dominated professions, such as sales reps, employers wish to increase the percentage of women being hired.

In second place, the fact that employers favour women in the case of assistant accountants reveals that some occupations could be being segregated in favour of women, in the context of a strong rise in the presence of women in the labour market. And, one more aspect, the fact that this is occurring to a greater extent in the case of accountant's assistants than in that of accountants could imply, moreover, that this trend towards feminisation is taking place to a greater extent in occupations requiring only a low level of qualifications. This latter finding recalls that of Neumark *et al.* (1996), in which the female candidates for jobs as waitresses in high-class restaurants (and high wages) in Philadelphia had 40 per cent less likelihood of being interviewed than waiters, something which did not occur in lower category restaurants.

Thirdly, it may be that employers are more prone to favour women in occupations which traditionally are male-dominated, rather than the reverse. At least this would appear to be the case judging by the fact that employers make the same number of calls to men and women in the occupations of sales rep and marketing technician (which, in principle, are male-dominated occupations), whereas they call women three times more often in the occupations of assistant/receptionist and secretary (which are female-dominated occupations)¹⁷. This conclusion is also reached by Riach and Rich (2006), where the intense discrimination displayed against men in the occupation of secretary (a very female-dominated occupation) is shown to be twice that shown against women in the engineering profession (very male-dominated in England).

It is necessary to bear in mind, in this respect, that in the Spanish economy there exists at the present time a trend towards women (who are joining the labour market in huge numbers and full time) obtaining a series of jobs in tradi-

¹⁷ It must be recognised, in any case, that, despite the shortcomings presented by the Spanish EPA to be able to know exactly the percentages of men and women in the occupations analysed here, the existing informal evidence on the Spanish labour market leads one to believe that the occupations of assistant/receptionist and secretary are more segregated in favour of women than are the occupations of sales rep and marketing technician in the case of men. And that, logically, is also being registered in the findings of the present experiment.

tionally male-dominated occupations¹⁸, some of which may cease to be so in the near future¹⁹. This phenomenon would be particularly relevant in white-collar occupations. And in the present study the occupations of sales rep and marketing technician would correspond to the type of occupation that would be no longer male-dominated. Thus, it is possible that firms which used to offer this type of occupation may have received an important number of female curricula (including those sent via the present experiment), among which it seems there have been no cases of gender discrimination.

It could also be argued that, given the fact that the woman is the one who traditionally suffers when mention is made of gender inequality in the labour market, it could happen that among employers there exists a certain perception that reducing inequalities in questions of segregation consists, particularly, of making more room for women in traditionally male-dominated occupations, and not so much making more room for men in traditionally female-dominated occupations.

In fourth place, this greater acceptance of women in occupations (male dominated) of sales reps and sales technicians than by men in occupations (female-dominated) of assistant/receptionist and secretary, may be related to the different signals in matters of professional ambition and aspirations being transmitted to firms in each case. Firms receiving curricula from women for the posts of sales rep and marketing technicians might interpret that these female candidates, who wish to work in occupations traditionally held to be for men, have high levels of professional aspirations, whereas firms receiving curricula from men who wish to work as receptionists or secretaries may come to the conclusion that the latter have low levels of professional aspiration or ambition. This would make them unattractive candidates. Levinson (1975) and Riach and Rich (2006) developed an argument of this type for the case of secretaries. All this is related, of course, to one of the aspects characterising gender segregation in occupations being that most highly female-dominated occupations are also low-level ones.

In fifth place, the finding obtained for assistant/receptionists and secretaries shows that there persist among employers stereotypes about women's or men's greater suitability for certain jobs²⁰. Blau *et al.* (2002), page 213, pointed out that there is a great deal of evidence on the fact that differences in men and women workers' preferences (supply side) play an important part in explaining existing

¹⁸ This would not be happening in some occupations highly characterised by risk or the physical strength demanded, such as labourer, car mechanic, plumber, taxi driver, etc. (and even so, women are making more and more inroads in some of them, for example, the army.

¹⁹ A phenomenon that would not be as intense for men in female-dominated occupations.

²⁰ For example, in the case of secretaries, employers may be influenced by a series of typical stereotypes of women and their supposed abilities, such as those mentioned by Anker (1998, page 23): caring nature, greater honesty, physical appearance, greater willingness to take orders, and greater willingness to do monotonous/repetitive work.

occupational segregation. They also point out that discrimination by firms (demand side) is important, but here the evidence is not so clear. Studies such as this one may provide more evidence in this last sense. In the case of Madrid, it is clear that employers to a much greater extent would rather hire women than men for receptionist posts or secretary. And recently Weichselbaumer (2004) in Austria, and Riach and Rich (2006), in England, obtained a similar finding for secretaries.

3.4. Callback rates by marital status

It is worth remembering that in this experiment being married implies having a child/children (candidates aged 28 have a child and those aged 38 have two); so married candidates are sending out a signal to firms that they very possibly have family responsibilities related to childcare. Consequently, penalisation for being married is really penalising motherhood/fatherhood.

In Table 4 there appear the callback rates for unmarried and married candidates, as well as the corresponding single-married gaps. For the whole group of curricula submitted the result is that employers penalise the fact of being married, since the callback rate of the unmarried (women and men) is 9.06%, whilst for the married ones it is 8.33%, so the single-married gap remains at 108.66. However, this finding is not statistically significant: the P-value corresponding to the difference between these two percentages is 0.099.

Furthermore, when the previous result is broken down between men and women, it is observed that employers penalise married women with children more than married men with children (the single-married gap for women is 110.45, whereas that for men is 106.32). However, once again, the P-values for women and men clearly show that this result is not statistically significant.

When these findings are broken down among the six occupations analysed, basically the results stay the same. However, there is a case of penalisation for being married which is very high and statistically significant, that of the male receptionist, which has an unmarried-married gap of 219.05; and several non-statistically significant cases in which it seems that firms show more interest in married men than unmarried ones (in marketing, Accountant's assistant and secretary).

All in all, it seems that the firms analysed tend to penalise the fact of having children; and it seems that they penalise women relatively more than men (note, for example, that the single-married gap in the case of women candidates is more than 100 in the six occupations analysed, while in the case of male candidates that gap is higher than 100 in only three occupations); but, this result, in any case, is of little importance and not statistically significant. This would appear to indicate that maternity penalty, which is one of the main causes of statistical discrimination against women, would not be impinging in a significant way in the case of the firms analysed. These findings contrast to a certain extent with those from the experiment by Duguet and Petit (2004), in which the result obtained is that in

some cases firms respond relatively less to young women candidates (25), who are more likely to become pregnant in the future, than to the more mature ones (37), who would be less likely to become pregnant in the future.

Table 4
CALLBACK RATES AND SINGLE-MARRIED GAP

		Callback rates single	Callback rates married	Gap single-married	Difference single-married (p-value)
All curricula Sent	Women & men	9.06% [6372]	8.33% [4248]	108.66	0.72% (0.099)
	Women	10.45% [3186]	9.46% [2124]	110.45	0.99% (0.120)
	Men	7.66% [3186]	7.20% [2124]	106.32	0.46% (0.268)
Sales rep	Women & men	17.04% [1356]	16.15% [904]	105.48	0.88% (0.290)
	Women	16.52% [678]	16.15% [452]	102.28	0.37% (0.435)
	Men	17.55% [678]	16.15% [452]	108.68	1.40% (0.269)
Marketing technicians	Women & men	2.31% [1296]	2.31% [864]	100.00	0.00% (0.500)
	Women	2.47% [648]	2.08% [432]	118.52	0.39% (0.340)
	Men	2.16% [648]	2.55% [432]	84.85	-0.39% (0.340)
Accountant's assistant	Women & men	9.43% [1188]	9.60% [792]	98.25	-0.17% (0.450)
	Women	11.62% [594]	10.61% [396]	109.52	1.01% (0.311)
	Men	7.24% [594]	8.59% [396]	84.31	-1.35% (0.219)
Accountant	Women & men	7.03% [996]	6.17% [664]	113.82	0.85% (0.248)
	Women	7.03% [498]	6.93% [332]	101.45	0.10% (0.478)
	Men	7.03% [498]	5.42% [332]	129.63	1.61% (0.177)
Adm. assistant/receptionist	Women & men	7.77% [1056]	5.68% [704]	136.67	2.08% (0.046)
	Women	11.17% [528]	9.38% [352]	119.19	1.80% (0.196)
	Men	4.36% [528]	1.99% [352]	219.05	2.37% (0.029)
Executive secretary	Women & men	10.83% [480]	9.69% [320]	111.83	1.15% (0.301)
	Women	17.50% [240]	13.13% [160]	133.33	4.38% (0.120)
	Men	4.17% [240]	6.25% [160]	66.67	-2.08% (0.174)

Note. The number appearing in brackets below each callback rate is the number of curricula submitted. The P-value has been obtained from statistical Z of difference of proportions.

As for the finding, already mentioned, of strong penalisation on the grounds of being married in the case of men receptionists (single-married gap 219.05), it may be that more than penalisation because of being a father, it is registering other phenomena related to signals about the candidate's professional aspirations and with the marked stereotyping of this type of work. Work as an office receptionist is a low-quality job usually taken by young, unmarried women. Thus, some firms may see the men candidates as "not corresponding" to a post normally occupied by women; and if, moreover, these men are 28 or 38 years of age and father of a family, they would see them as candidates "corresponding even less", given the low work aspirations signalled.

Finally, table 5 shows that, in breaking down the single-married results among the candidates aged 28 and 38, results very similar to before are still obtained. Within each age the differences between the callback rates of the single and married are still small and not statistically significant. Even for the sex-age-marital status scenario which a priori could give rise to greater penalisation for being a mother, the case of the 28-year-old married woman with a child (sending the signal that she has a child who is probably very small and that she may have another soon), the single-married gap 103.88 is very small and similar to the rest.

Table 5
CALLBACK RATES AND SINGLE-MARRIED GAP BY AGE

		Callback rates single	Callback rates married	Gap single-married	Difference single-married (p-value)
All curricula Sent	Women & men 28 years old	11.06% [2124]	10.64% [2124]	103.98	0.42% (0.329)
	38 years old	6.21% [2124]	6.03% [2124]	103.13	0.19% (0.399)
	Women 28 years old	12.62% [1062]	12.15% [1062]	103.88	0.47% (0.371)
	38 years old	7.16% [1062]	6.78% [1062]	105.56	0.38% (0.367)
	Men 28 years old	9.51% [1062]	9.13% [1062]	104.12	0.38% (0.383)
	38 years old	5.27% [1062]	5.27% [1062]	100.00	0.00% (0.500)

3.5. Callback rates by ages

In Table 6 the callback rates of firms for the three ages considered, 24, 28 and 38, are presented, as well as those corresponding gaps by ages. For the whole set of curricula submitted a result of clear discrimination on the part of firms towards 38-year-old candidates was obtained²¹. Indeed, the callback rates

²¹ If this age analysis is carry out for men and women the results are practically the same (see the table).

for candidates aged 24 and 28 are similar (the last two are greater²², but this finding is not significant), whilst the callback rates for the 28-year-old candidates, 10.85%, is considerably higher than that of the 38-year-olds, 6.12%, with this being a statistically significant (a P-value of 0.000 for the difference between the two rates). The 28-38 gap is 177.31; that is, candidates aged 28 have a callback rate 77% above the 38-year-old candidates. The fact that candidates that are 38 are still relatively young and also have longer experience in the sector implies that the inclination to discriminate against older workers is not only high, but also may apply from a relatively young age threshold.

In the experiment of Bendick *et al.* (1999), the oldest candidate was discriminated against in 42.2% of cases, although it must be taken into account that the age difference between the two candidates was large (25 and 57) and that in this study the curricula were designed in such a way that there could be no difference in the personal experience of the two candidates (the candidate aged 57 had been employed for part of his working life in posts unconnected with the one analysed, for example, in the army). Also, in Lahey's experiment (2005), the young female candidate had a 40% higher probability of being called than the older female candidate, and in this case there was also a very great age difference (35 and 62), but now the 62-year-old candidate had a corresponding greater experience²³.

The finding obtained in the present experiment is more akin to that of Reach and Rich (2006b), where the percentage of net discrimination against the older candidate was 58.1%, in an experiment where the age difference between the two waiter candidates (27 and 47) was lower than in the other two studies, and in which professional experience was adjusted to the candidate's age.

When these findings are broken down among the six occupations analysed, similar results are obtained to those of the curricula as a whole, although two rather differentiated cases appear which are worth quoting.

In the first place, the job of sales rep is the only one in which there appears clearly and in a statistically significant way the fact that when going from 24 to 28 years of age, firms' interest in 28-year-old candidates increases, since the callback rates go from 14.16% to 21.24% (then, when going from 28 to 38 years of age, there is a clear drop in interest in 38-year-old candidates). It must be taken into account that in the job of sales rep learning by doing is of particular importance and therefore it is quite likely that young candidates (28 years old) and with several years of sales experience are highly attractive.

²² It should not be strange that when passing from 24 to 28 years of age, firms, on the whole, maintain or even raise their interest in the 28-year-old candidates, given that the latter are still young and, what is more, have experience.

²³ A computerised program filled randomly the period of work experience of each candidate from a data base of possible jobs. This enabled two curricula models to be rotated between the two candidates.

Table 6
CALLBACK RATES AND GAPS ACCORDING TO AGE

	Callback rates 24 years old	Callback rates 28 years old	Callback rates 38 years old	Gap 24-28	Diff. 24-28 (p-value)	Gap 24-38	Diff. 24-38 (p-value)	Gap 28-38	Diff. 28-38 (p-value)
All curricula	Women & men	9.89% [2.124]	10.85% [4.248]	6.12% [4.248]	0.97% (0.118)	161.54	3.77% (0.000)	177.31	4.73% (0.000)
	Women	11.58% [1.062]	12.38% [2.124]	6.97% [2.124]	-0.80% (0.257)	166.22	4.61% (0.000)	177.70	5.41% (0.000)
	Men	8.19% [1.062]	9.32% [2.124]	5.27% [2.124]	-1.13% (0.146)	155.36	2.92% (0.001)	176.79	4.05% (0.000)
Sales rep	Women & men	14.16% [452]	21.24% [904]	13.38% [904]	-7.08% (0.001)	105.79	0.77% (0.348)	158.68	7.85% (0.000)
	Women	12.39% [226]	21.46% [452]	13.27% [452]	-9.07% (0.002)	93.33	-0.88% (0.373)	161.67	8.19% (0.001)
	Men	15.93% [226]	21.02% [452]	13.50% [452]	-5.09% (0.057)	118.03	2.43% (0.197)	155.74	7.52% (0.001)
Marketing technicians	Women & men	3.24% [432]	3.13% [864]	1.04% [864]	0.12% (0.455)	311.11	2.20% (0.002)	300.00	2.08% (0.001)
	Women	3.70% [216]	2.78% [432]	1.16% [432]	0.93% (0.260)	320.00	2.55% (0.105)	240.00	1.62% (0.043)
	Men	2.78% [216]	3.47% [432]	0.93% [432]	-0.69% (0.319)	80.00	1.85% (0.036)	375.00	2.55% (0.005)

(Keep.)

(Continuation.)

	Callback rates 24 years old	Callback rates 28 years old	Callback rates 38 years old	Gap 24-28	Diff. 24-28 (p-value)	Gap 24-38	Diff. 24-38 (p-value)	Gap 28-38	Diff. 28-38 (p-value)
Accountant's assistant	Women & men	11.11% [396]	12.12% [792]	6.06% [792]	-1.01% (0.305)	183.33	5.05% (0.001)	200.00	6.06% (0.000)
	Women	15.15% [198]	13.38% [396]	7.07% [396]	1.77% (0.279)	214.29	8.08% (0.001)	189.29	6.31% (0.002)
	Men	7.07% [198]	10.86% [396]	5.05% [396]	-3.79% (0.070)	140.00	2.02% (0.159)	215.00	5.81% (0.001)
Accountant	Women & men	9.94% [332]	6.93% [664]	4.82% [664]	-1.01% (0.305)	183.33	5.05% (0.001)	200.00	6.06% (0.000)
	Women	10.2% [166]	7.5% [332]	4.8% [332]	1.77% (0.279)	214.29	8.08% (0.001)	189.29	6.31% (0.002)
	Men	9.64% [166]	6.33% [332]	4.82% [332]	-3.79% (0.070)	140.00	2.03% (0.159)	215.00	5.81% (0.001)
Adm. assistant/receptionist	Women & men	9.38% [352]	8.66% [704]	4.0% [704]	0.71% (0.351)	235.71	5.40% (0.000)	217.86	4.69% (0.000)
	Women	13.07% [176]	13.07% [352]	6.53% [352]	0.00% (0.500)	200.00	6.53% (0.006)	200.00	6.53% (0.002)
	Men	5.68% [176]	4.26% [352]	1.42% [352]	1.42% (0.234)	400.00	4.26% (0.003)	300.00	2.84% (0.012)
Executive secretary	Women & men	13.75% [160]	12.19% [320]	6.88% [320]	1.56% (0.314)	200.00	6.88% (0.007)	177.27	5.31% (0.011)
	Women	21.25% [80]	18.75% [160]	10.00% [160]	2.50% (0.323)	212.50	11.25% (0.009)	187.50	8.75% (0.013)
	Men	6.25% [80]	5.63% [160]	3.75% [160]	0.63% (0.423)	166.67	2.50% (0.191)	150.00	1.88% (0.214)

Note. The number appearing in brackets below each callback rate is the number of curricula submitted. The P-value has been obtained from statistical Z of difference of proportions.



Secondly, in the post of accountant, when going from 24 to 28 years of age, there also appears a significant difference in the callback rates, but it is now of the opposite sign to the previous one: Firms show more interest in calling candidates aged 24 than those aged 28. In fact the callback rates fall as age rises; they are 9.94%, 6.93% and 4.82% for candidates aged 24, 28 and 38, respectively. Job offers as an accountant are normally of relatively good quality (normally they are jobs of indefinite duration in which the worker has opportunities to develop a professional career in the firm) and require a profile of a highly qualified worker (to these offers were sent curricula of candidates who were graduates in business administration and management). In this way it is not surprising that many firms tend to hire accountants who have just graduated, those aged 24, with supposedly a good training level, to which they will give specific training and, eventually, some chance to develop their professional career within the firm.

This finding indicating age discrimination against the candidates aged 38 deserves some interpretation. Lahey (2005b) points out that, according to employers' opinion, the oldest candidates can be less attractive than young ones for, among others, the following reasons: a) lack of energy; b) poorer health (more absenteeism); c) obsolescence of human capital; d) less flexibility and adaptability; e) higher salary aspirations, and f) suspicions concerning competence (why did he leave the previous job?). Moreover, Lahey adds that it could happen, in part, that employers, employees or customers find it unpleasant to deal with elderly workers (Becker's animus or taste-based discrimination).

This latter possibility, that there is a component of discrimination of the Becker type against older candidates, can be discarded, since the 38-year-old candidate is still young. Therefore, discrimination against the candidate aged 38 observed in this experiment must be integrally a case of statistical discrimination (firms do not have perfect information on the candidate and use the average characteristics of the group he belongs to draw conclusions about him). And, of the reasons just mentioned for firms finding older workers less attractive, a) and b) make no sense in a person of 38; c) should not be valid in this experiment since the candidates' professional experience has been adjusted to their age; the combination of the other three reasons should explain the lesser interest shown by firms for candidates aged 38: it is highly possible that firms may think that the 38-year-old candidate is going to have higher salary demands than one of 28 or 24, they may consider that the former is less adaptable to their organisation than the younger ones, and it should not be overlooked that some employers may think that, among the older people looking for work, there may be an important percentage of them who are doing so because they are troublemakers or have not been able to fit in well in organisations they work for.

Table 7
PROBIT REGRESSION OF THE PROBABILITY OF RECEIVING A CALL BACK

	Sales reps	Marketing technicians	Accountant's assistant	Accountant	Administrative assistant/receptionist	Executive secretary
constant	-0.7406 -11.262 (0.000)	-1.9134 -14.822 (0.000)	-1.3092 -15.246 (0.000)	-1.5314 -14.329 (0.000)	-1.6565 -15.081 (0.000)	-1.5673 -11.468 (0.000)
woman	-0.0263 -0.417 (0.677) -0.65%	0.0028 0.024 (0.981) 0.01%	0.2076 2.617 (0.009) 3.38%	0.0459 0.482 (0.630) 0.58%	0.5844 5.857 (0.000) 6.88%	0.6452 4.916 (0.000) 10.57%
married	-0.0907 -1.296 (0.195) -2.22%	0.00944 0.673 (0.501) 0.48%	0.0612 0.682 (0.495) 1.00%	0.0528 0.478 (0.633) 0.67%	-0.1161 -1.071 (0.284) -1.32%	0.0318 0.224 (0.823) 0.52%
age 24	-0.3197 -3.424 (0.001) -7.17%	0.0654 0.402 (0.688) 0.34%	-0.0249 -0.225 (0.822) -0.40%	0.2232 1.674 (0.094) 3.13%	-0.0049 -0.038 (0.970) -0.06%	0.0928 0.545 (0.586) 1.56%
age 30	-0.3102 -4.406 (0.000) -7.44%	-0.4487 -2.976 (0.003) -2.09%	-0.3830 -4.186 (0.000) -5.95%	-0.1817 -1.635 (0.102) -2.24%	-0.4100 -3.67 (0.000) -4.48%	-0.3263 -2.256 (0.024) -5.07%
Pseudo R2	0.012	0.025	0.021	0.012	0.061	0.063
LogLikelihood	-1006.732	-231.735	-608.056	-402.685	-416.065	-249.812
LR chi2	24.144	11.948	26.703	9.557	54.459	33.569
P-value (4 df)	0.000	0.0177	0.0000	0.049	0.000	0.000
Num observations	2260	2160	1980	1660	1760	800.000
Dep = 1 Observed Frequency	16.68%	2.31%	9.49%	6.69%	6.93%	10.38%
Dep = 1 Estimated Frequency at mean*	16.40%	2.06%	9.03%	6.48%	5.75%	8.95%
Hosmer-Lemeshow	1.9918	1.1217	2.7792	1.2877	2.3055	3.755
Prob. Chi-Sq (8 df)	0.9813	0.9974	0.9474	0.9957	0.9702	0.8785
%Correct Predictions (Dep = 0)	62.19%	40.52%	51.79%	50.74%	71.98%	53.00%
%Incorrect Predictions (Dep = 1)	50.93%	82.00%	67.02%	60.36%	56.56%	75.90%

Dependent Variable (Dep) is the dummy variable Call-Back.

Call-Back = 1 if the candidate receives any contact for the curriculum she sent to the firm, Call-Back = 0 if no contact was received

For each variable we show: Estimated coefficient

Z-Statistic (P-Value)

marginal effect: change in probability for change in each dummy

variable from 0 to 1 evaluated at mean*

* mean of independent variables women = 0.5, married = 0.4, age24 = 0.2, age38 = 0.4

QML (Huber/White) standard errors & covariance

3.6. Results of probit regression

In order to corroborate the results of the experiment that have been exposed in the three previous sub-sections, we have carried out a regression analysis of a probit model to consider the partial effect that has each one of the considered personal characteristics (sex, marital status and age) on the probability of receiving a callback. The estimation of the model is in table 7. It confirms the results that have been commented previously. Thus, controlling by the age and the marital status, sex influences the callback rates of accountant's assistant, administrative assistant/receptionist and executive secretary (where callback rates for women are significantly higher than those for men); the marital status has no statistically significant effect in callback rates; and the age has significant effect in all the occupations: to be 38 years old significantly reduces the probability of being contacted with respect of the candidate that is 28 years old²⁴.

3.7. Average gross salaries offered by firms in their adverts

Many of the job offers made by firms via Infojobs gave the annual gross salary coming with the offer (the format of the ad for the job incorporated a section for the salary offered by the firm)²⁵.

Table 8
ANNUAL AVERAGE GROSS SALARIES OFFERED TO THE FEMALE AND MALE CANDIDATES

	Average salary offered (€ per year)						
	All occupations	Sales reps	Marketing technicians	Accountant's assistant	Accountant	Adm. Assistant/receptionis	Executive secretary
Women	16,039.49€ (353)	20,363.64€ (110)	18,428.57€ (14)	13,426.99€ (83)	16,750.00€ (40)	11,907.14€ (70)	15,166.67€ (36)
Men	16,828.50€ (253)	19,473.21€ (112)	25,166.67€ (12)	12,775.56€ (54)	16,139.78€ (41)	12,285.71€ (21)	12,692.31€ (13)
Women and men	16,368.90€ (606)	19,914.41€ (222)	21,538.46€ (26)	13,170.22€ (137)	16,441.12€ (81)	11,994.51€ (91)	14,510.20€ (49)
Wage gap w-m	95.31	104.57	73.23	105.10	103.78	96.92	119.49
Horizontal % women	58.25%	49.55%	53.85%	60.58%	49.38%	76.92%	73.47%

Note. In brackets the number of observations (candidates contacted) with which average salary is calculated.

²⁴ With the exception of the accountants: in this case to be 38 years old significantly reduces the probability of being contacted with respect to the candidate that is 24 years old.

²⁵ Specifically, this information was offered, either as a total amount, or in the form of a salary interval, in which case it has been transformed in its average or class interval, so that in all cases the total annual salary offered by the firm was known.

Of the 931 curricula contacted, in 606 of them salaries offered by hiring firms in their job offer were available. This enables Table 8 to be constructed. There can be found the average annual gross salaries offered for the six occupations studied, as well as these same salaries broken down between women and men.

From these data the following aspects can be highlighted:

In the first place, the average salary offered by firms for these 606 curricula contacted was 16,368.9€.

In second place a marked difference is to be seen between the average salaries on offer in each of the six occupations. The salaries range, going from more to less, from the salary for marketing technicians, which is 21,538.46€, to those for assistants/receptionists, which is 11,994.51€.

In third place for the occupations as a whole, women received job proposals with average salaries slightly below those for men, in fact the average annual salary offered to women was 16,039.49€ while for men it was 16,828.50€. This gives rise to a wage gap (in salaries offers) of 95.31; that is, the average salary for women is 95.31% of that for men.

In fourth place, this wage gap between women and men is explained, almost exclusively, by the fact that the percentage of women (with regard to the total number of candidates contacted), is far higher in the case of the occupations of assistant/receptionist, secretary and assistant accountant (76.92%, 73.47% and 60.58%, respectively), whereas these are the occupations in which the lowest salaries were on offer. Indeed, when average salaries offered to women and men in the six occupations analysed are considered, the result is that in most cases women receive average salary offers slightly higher than those for men²⁶.

All in all, in this experiment it was not seen that within each occupation firms offered jobs which were lower paid to women²⁷. The inequality against women, with regard to salaries offered to candidates, springs from the existence of occupational gender segregation: lower level occupations with the lowest salaries are those in which firms analysed have in the majority shown the highest interest in women candidates. This proposition cannot be generalised for the whole

²⁶ This was not so for marketing technicians; in any case, it must be borne in mind that in this occupation the number of observations used to obtain the average wages offered to women and men is very small.

²⁷ Nor was it seen that firms, within each occupation, offered the most unstable jobs (temporary contract, etc) to women more than to men. In fact, an indicator of "low quality" in the work offered was constructed in which this qualification was given to the type of work which in the advert made use of one of the following aspects: temporary work (temporary contract, without any mention of the possibility of it becoming permanent after a certain length of time); part-time work; annual gross salary below 12.000€. The result was that in most cases firms offered proportionately more low quality jobs to men than to women, although these findings were not statistically significant.



labour market, for the obvious reason that in this experiment only six arbitrarily selected occupations from among the hundreds of existing occupations were used. However, empirical literature existing in Spain about the gender salary gap (see, for example, Amuedo-Dorantes and Rica 2006) indicate that, in fact, occupational segregation is one of the main determinants of wage inequality discrimination against women.

4. CONCLUDING REMARKS

In a context of a strong growth in the presence of women in the labour market, and social opinion increasingly in favour of gender equality, it may be that the phenomenon of occupational gender segregation is evolving in a lopsided way. Possibly a whole series of occupations traditionally dominated by men are ceasing to be so, while most occupations traditionally dominated by women will continue to be so and it may even happen that some occupation which was previously integrated in gender terms will steadily become female-dominated. In this experiment some evidence is obtained in this sense on the demand side (by firms). In fact, in the two female-dominated occupations analysed (assistant/receptionist and executive secretary) the candidates received three times more calls than the males, whereas in the two-male-dominated occupations which have been analysed (sales rep and marketing technician) firms have not shown any greater interest in men; and, likewise, in one of the integrated occupations analysed (assistant accountant), firms are seen to show a significant preference for female rather than male candidates (it would be becoming more feminized).

But, in turn, it seems that these processes of maintaining feminization in some occupations or the new feminization of others, would impinge relatively more on low qualification or status occupations; that is, women would be relatively more in demand for what are called occupations in the secondary market. In this experiment, for example, in the area of accounting, it is not the profession of accountant that is tending towards feminization but, rather, that of the low level, assistant accountant.

From the viewpoint of equality policies, perhaps it should impact on the double target of reducing occupational gender segregation whilst encouraging women to achieve a higher participation in high level occupations and management posts. To achieve these aims what is essential is to have education and awareness policies (non-sexist education, non-sexist advertising, awareness campaigns, etc) and that of good practice in gender questions, having as their fundamental purpose to lead to the steady disappearance of traditional sexist values and stereotypes both from the world of labour and the family, as well as

from society in general. Everything that might contribute to eliminating sexual division of labour within the home (the double working day suffered by many women, etc) and achieving equality at all levels of the roles of women and men in society, would lead to equalling the aspiration and dedication levels of women and men in the world of work. Thus, the notion that certain occupations are more suitable for men or women and, especially, that such a differentiation is linked to the professional level of these occupations would wither away.

Moreover, in the present experiment a very clear finding indicating age discrimination has been obtained. Firms show greatly reduced interest in interviewing 38-year-old candidates compared to those of 24 or 28. For example, candidates aged 28 have a callback rate from firms which is 77.31% higher than that for those aged 38. That difference is very high bearing in mind that the age difference is not so great as that used in other studies, that the candidate aged 38 is not by any means old, and that this candidate's professional experience has been matched with his age.

It should be noted that, in this case, there is very little margin for action for public policies. Policies geared to reducing discrimination against older workers define the latter as those who are 50, 60 years of age, etc. In fact the group of workers between 30 and 45, who are neither young nor old, are usually those who do not benefit from any type of special measure in matters of active employment policies. Within this slim existing room for manoeuvre, perhaps improvements both in plans for continuous training received by the employees and professional recycling received by the unemployed, may help to make candidates aged between 30 and 45 more attractive. And perhaps a stiffening of the anti-discrimination laws, which would make it possible for a worker who feels discriminated against in the selection process to sue the firm, might also help in reducing this type of discrimination.

APPENDIX

Next three examples of the formats of curricula are offered. They are those corresponding to the occupations of accountant, executive secretary and marketing technician.

DATOS PERSONALES

Nombre: xxxxx xxxx xxxxxxxx

Lugar y Fecha de Nacimiento: Madrid, 25 de septiembre de 1977

Estado civil: Casado (un hijo)

Domicilio: C/Santa Engracia 50, 28010, Madrid.

Número de teléfono: 680245254

e-mail: pedrodelafuente1@lycos.es

FORMACIÓN ACADÉMICA

Licenciado en Administración y Dirección de Empresas, 1995-2000, Universidad xxxx de Madrid

CURSOS

Master en Análisis Económico- Financiero (975 horas), CEF, Centro de xxxxx xxxx (Madrid). (1999-2000)

Curso de Contabilidad Financiera Avanzada: (90 horas), xxxx xxxx. (2001)

EXPERIENCIA LABORAL

1999-2000. Prácticas remuneradas en xxxxxxxx. Atención a los clientes, tareas administrativas, arqueo de caja.

2000-2001. Tareas administrativas de tesorería en el Grupo xxxxx. Gestión de cobros.

2001-2003. Contable en Departamento Financiero de la empresa xxxxx S. A. Control de cuentas, libros contables, estados financieros.

2003- actualidad. Ayudante de director financiero en Caja xxxxx. Tareas de análisis económico-financiero, estados contables, contabilidad de grandes cuentas.

IDIOMAS

Inglés, nivel alto hablado y escrito. (First).

Francés nivel básico.

INFORMÁTICA

Paquete office 2000.

Dominio del Contaplus y Nominaplus.

Dominio de programas de contabilidad.

DATOS DE INTERÉS

Nivel alto del Plan General de Contabilidad.

Carnet de conducir B.

Dirección de grupos de trabajo.

Disponibilidad inmediata.



CURRICULUM VITAE

Nombre: **XXXXXX XXXXXX XXXXXXXX**
Lugar y fecha de nacimiento: Madrid, 18 de abril de 1977
Estado civil: Soltera
E-mail: miriamoreno@wanadoo.es
Nacionalidad: Española
Dirección: Reina Victoria 22, 28003 Madrid
Teléfono: 680306686

• Formación

- **Licenciada en Filología Inglesa** Universidad xxxxxxxx de Madrid
- Curso de Contabilidad y Análisis Económico-Financiero. Grupo xxxx (50 horas teórico-prácticas)
- Curso de Gestión de Empresas – xxx Escuela de Negocios (300 hs)

• Experiencia Profesional

- Ayudante de dirección (2002-05) en la empresa xxxxxxxx, Madrid
- Administrativa (2001-02) en la empresa xxxxxxxxxxxx, Madrid
- Administrativa (1999-01) en la editorial xxxxxx, Madrid,

• Idiomas

- Inglés bilingüe
- Alemán avanzado, escrito y hablado (Certificado de Aptitud de la Escuela Oficial de Idiomas y estancia de seis meses en Zurich, Suiza)

• Informática

Internet (correo, navegación, etc), Word, Word Perfect, Excel, base de datos Access y Powerpoint, Nominaplus y Contaplus.

• Otros datos de interés

Disponibilidad para viajar y para movilidad dentro de la empresa.

CURRICULUM VITAE

Datos personales

Nombre: xxxxxx xxxxx xxxxxxxxx
Dirección: C/ Santa Engracia 50, 28010
Fecha y lugar de nacimiento: 05-08-1977 Madrid
E-mail contacto: danieldefrancisco@lycos.es
Estado civil: casado con un hijo.
Teléfono de contacto: 680245254

Estudios

1997-2001.- Licenciado en Economía, especialidad de Análisis Económico, por la Universidad xxxxx de Madrid.
2003-2004.- Máster en Dirección Comercial y Marketing, por la Universidad xxxx de Madrid.

Cursos realizados

1997.- Curso de Logística Comercial y Empresarial impartido por la xxxxx, duración 3 semanas.
1998.- Curso de Gestión Empresarial, impartido por xxxxx xxxxxx de Madrid, duración un 6 meses.
2000.- Curso de Marketing y Comunicación, impartido por xx xxxxx xxxxxx de Madrid, duración 4 meses.

Experiencia laboral

1997.- Becario en xxxxx xxxxx, área de Marketing duración 1 año.
1998.- Becario en el xxxxx xxxxxx, área de Marketing, duración 2 meses.
1999-2000.- Gestor Comercial del xxxxx xxx, duración 1 año.
2000-2002.- Comercial para el periódico xxxxx xxxxx, duración 2 años.
2002-2004.- Comercial para xx xxxxx xxxxx xxxxx, Madrid, duración 2 años.
2005.- Actualmente trabajando como comercial para la librería xxxxx (Madrid).

Idiomas

Nivel medio de inglés hablado y escrito.

Otros datos

Permiso de conducir B1, vehículo propio, disponibilidad para viajar absoluta.

BIBLIOGRAPHY

- AHMED, A. M. and HAMMARSTEDT, M. (2007): *Detecting discrimination against homosexuals: Evidence from a field experiment on the Internet*, Mimeo, Växjö University.
- AMUEDO-DORANTES, C. and DE LA RICA, S. (2006): "The Role of Segregation and Pay Structure on the Gender Wage Gap: Evidence from Matched Employer-Employee Data for Spain", *Contributions to Economic Analysis & Policy*, 5(1), Article 10.
- ANKER, R. (1998): *Gender and Jobs. Sex Segregation of Occupations in the World*, International Labour Organization, Geneva.
- ARROW, K. (1972): "Models of job discrimination" & "Some mathematical models of race in the labor market", in PASCAL (ed.), *Racial discrimination in economic life*, Lexington Books, Lexington (Mass).
- AYRES, I. (1991): "Fair driving: race and gender discrimination in retail car negotiations", *Harvard Law Review*, 104: 817-872.
- AYRES, I. and SIEGELMAN, P. (1995): "Gender and race discrimination in bargaining for a new car", *American Economic Review*, 85(3): 304-321.
- BECKER, G. S. (1957): *The Economics of Discrimination*, University of Chicago Press, Chicago.
- BENDICK, M.; JACKSON, C.; REINOSO, V., and HODGES, L. (1991): "Discrimination against Latino jobs applicants: a controlled experiment", *Human Resources Management*, 30: 469-484.
- BENDICK, M.; BROWN, L., and WALL, R. (1999): "No Foot in the Door: An Experimental Study of Employment Discrimination Against Older Workers", *Journal of Aging and Social Policy*, 10(4): 5-23.
- BERTRAND, M. and MULLAINATHAN, S. (2004): "Are Emily and Greg More Employable than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination", *American Economic Review*, 94(4): 991-1013.
- BLAU, F. D.; FERBER, M. A., and WINKLER, A. E. (2002): *The Economics of Women, Men and Work*, fourth edition, Prentice Hall, Englewood Cliffs (NJ).
- BLINDER, A. (1973): "Wage discrimination: reduced form and structural estimates", *Journal of Human Resources*, 8: 436-455.
- BOVENKERK, F. (1992): *Testing discrimination in natural experiments: a manual for international comparative research on discrimination on the grounds of "race" and ethnic origin*, International Labour Organization, Geneva.

- CARLSSON, M. and ROTH, D. O. (2006): "Evidence of Ethnic Discrimination in the Swedish Labor Market Using Experimental Data", *IZA Discussion Paper* número 2281.
- DUGUET, E. and PETIT, P. (2004): *Hiring discrimination in the French financial sector. An econometric analysis on field experiment data*, Mimeo, Université de Paris Panthéon-Sorbonne.
- FIRTH, M. (1982): "Sex discrimination in job opportunities for women", *Sex Roles*, 8(8): 891-901.
- HECKMAN, J. J. (1998): "Detecting Discrimination", *Journal of Economic Perspectives*, 12(2): 101-116.
- KENNEY, G. M. and WISSOKER, D. A. (1994): "An Analysis of the Correlates of Discrimination Facing Young Hispanic Job-Seekers", *American Economic Review*, 84(3): 674-683.
- LAHEY, J. (2005): "Age, Women, and Hiring: an Experimental Study", *NBER Working Paper* 11435.
- (2005b): "Do older workers face discrimination?", *Center for Retirement Research*, Issue in Brief n.º 33.
- LEVINSON, R. (1975): "Sex discrimination and employment practices: an experiment with unconventional job inquiries", *Social Problems*, 22(4): 533-543.
- LIST, J. A. (2004). "The Nature and Extent of Discrimination in the Marketplace: Evidence from the Field", *Quarterly Journal of Economics*, 119(1): 49-89.
- NEUMARK, D.; BANK, R., and VAN NORT, K. D. (1996): "Sex Discrimination in Restaurant Hiring: an Audit Study", *Quarterly Journal of Economics*, 111(3): 915-941.
- OAXACA, R. (1973): "Male-female wage differentials in urban labor markets", *International Economic Review*, (14): 693-709.
- PHELPS, E. S. (1972): "The Statistical Theory of Racism and Sexism", *American Economic Review*, 62(4): 659-661.
- PRADA, M. A.; ACTIS, W., and PEREDA, C. (1996): *La discriminación laboral a los trabajadores inmigrantes en España*, International Labour Organization, Geneva.
- RIACH, P. A. and RICH, J. (1987): "Testing for sexual discrimination in the labour market", *Australian Economic Papers*, 26: 165-178.
- (2002): "Field Experiments of Discrimination in the Market Place", *The Economic Journal*, 112(November): 480–518.
- (2006): "An Experimental Investigation of Sexual Discrimination in Hiring in the English Labor Market", *Advances in Economic Analysis & Policy*, 6(2): 1-20.
- (2006b): "An Experimental Investigation of Age Discrimination in the French Labour Market", *IZA Discussion Paper*, n.º 2522.
- (2007): "An Experimental Investigation of Age Discrimination in the Spanish Labour Market", *Discussion Paper*, n.º 2522.

- WEICHSELBAUMER, D. (2004): "Is it Sex or Personality? The Impact of Sex-Stereotypes on Discrimination in Applicant Selection", *Eastern Economic Journal*, 30 (2): 159-186.
- WIENK, R.; REID, C.; SIMONSON, J., and EGGERS, F. (1979): *Measuring Racial Discrimination in American Housing Markets: The Housing Market Practices Survey*, Office of Policy Development and Research, Washington DC.
- YINGER, J. (1986): "Measuring Racial Discrimination with Fair Housing Audits: Caught in Act", *American Economic Review*, 76(5): 881-893.

SÍNTESIS

PRINCIPALES IMPLICACIONES DE POLÍTICA ECONÓMICA

En la literatura sobre desigualdad (de género, racial, etc.) en el mercado laboral es frecuente distinguir entre las causas de esa desigualdad de resultados (en los salarios, en la promoción profesional, etc.) que tienen su origen en el lado de la oferta de trabajo y las que tienen su origen en el lado de la demanda de trabajo. En el primer caso se hace referencia a que los miembros del grupo desfavorecido pueden tener en promedio unos niveles de capital humano o unas actitudes frente al trabajo diferentes a las del grupo favorecido (y ello como consecuencia de situaciones de desigualdad o discriminación previas); y en el segundo caso se hace referencia a que los propios demandantes de empleo, las empresas, pueden manifestar conductas discriminatorias contra los miembros del grupo desfavorecido en varios ámbitos, como la contratación, los salarios o la promoción profesional.

La forma más habitual (e indirecta) de estimar la discriminación por parte de las empresas consiste en recurrir a las metodologías tipo Oaxaca-Blinder (Oaxaca 1973; Blinder 1973), en las que, a partir de los microdatos provenientes de una encuesta laboral, se realiza un análisis econométrico en el que se incorporan todas las características observables de los miembros de los grupos desfavorecido y favorecido que pueden influir en sus productividades, y en el que también se estima cuál es el rendimiento que en ambos grupos obtienen sus miembros de esas características. Y una vez descontadas las diferencias (medias o a lo largo de la distribución) entre las características de los trabajadores de ambos grupos así como las diferencias en el rendimientos de las mismas, se obtiene una estimación del grado en que las empresas discriminan al grupo desfavorecido frente al favorecido (por ejemplo, en los salarios).

En contraste con esta metodología, los “experimentos de campo” (*Field experiments*), en sus diferentes modalidades, tratan de medir directamente la discriminación que llevan a cabo las empresas en contra del grupo desfavorecido. Consiste en el uso de pares de candidatos ficticios, que son básicamente iguales en todas sus características salvo en una (sexo, grupo étnico, edad, etc.), que optan a las ofertas de empleo que van realizando las empresas en el mercado laboral. En la medida en que el experimento haya sido diseñado cuidadosa y correctamente, si se detecta que los candidatos del grupo desfavorecido son menos reclamados por las empresas que los pertenecientes al otro grupo (por ejemplo, se citan menos candidatos negros que blancos para las entrevistas de empleo), entonces se habrá obtenido evidencia directa de discriminación contra ellos por parte de las empresas.

En este artículo se presentan los resultados de un experimento de campo realizado en la Comunidad Autónoma de Madrid, perteneciente a la modalidad denominada “prueba por correspondencia” (*correspondence testing*). En los procesos de selección de personal estándar hay dos etapas: la primera, en la que las empresas contactan con los candidatos por los que muestran interés, y la segunda de celebración de una entrevista de trabajo. En la modalidad *correspondence testing* el análisis se efectúa sólo para la primera etapa; es decir, que tras enviar los correspondientes pares de currículos ficticios a las empresas, se van recogiendo los casos en los que éstas se ponen en contacto con los candidatos (por

teléfono, por correo electrónico, etc.). Así pues, en nuestro experimento se ha procedido a enviar un conjunto de cinco pares de currículos ficticios mujer-hombre a 1.062 ofertas de empleo correspondientes a seis ocupaciones que se fueron anunciando en Internet (a través del portal de *Infojobs*) a lo largo de ocho meses; y donde posteriormente se cuantificó en qué medida las empresas contactaron más o menos con los candidatos de diferente sexo, edad y estado civil.

El envío de cinco pares de currículos a cada oferta (diez currículos por oferta) sirvió para considerar en el análisis no solo el sexo de los candidatos, que es la variable central del experimento, sino también su edad (24, 28 ó 38 años) y su estado civil (soltero o casado y con hijos). De esta manera ha sido posible cubrir el doble propósito de detectar posibles conductas discriminatorias por parte de los empleadores en los ámbitos de género (discriminación contra la mujer, segregación ocupacional y penalización por maternidad) y edad (discriminación en contra de los trabajadores de más edad).

En cuanto a los resultados, llaman la atención los siguientes: globalmente, no se observa discriminación contra las mujeres en el acceso a las entrevistas de empleo; sin embargo, sí se observan conductas discriminatorias relacionadas con el fenómeno de la segregación ocupacional de género; así, en las dos ocupaciones feminizadas que se han analizado (auxiliar/recepcionista y secretaria), las mujeres reciben tres veces más llamadas que los hombres, lo que evidencia que persisten entre los empleadores visiones estereotipadas acerca de la mayor idoneidad de las mujeres para determinadas tareas. En las dos ocupaciones integradas en términos de género analizadas, auxiliar contable y contable, no sólo no se detecta discriminación contra las mujeres en el acceso a las entrevistas de empleo, sino que en una de ellas, auxiliar contable, se obtiene un resultado estadísticamente significativo en el que las mujeres reciben un 44% más de llamadas que los hombres, lo que apuntaría a que las empresas podrían estar favoreciendo la feminización de algunas ocupaciones de bajo nivel, como esta. Y en las dos ocupaciones ligeramente masculinizadas que se han analizado, comercial y técnico de marketing, no se detecta discriminación contra las mujeres: se han obtenido tasas de respuesta muy similares para los candidatos de ambos sexos.

Además, aunque se observa que las empresas tienden a penalizar el hecho de tener hijos, y parece que penalizarían relativamente más a las mujeres, este resultado no es estadísticamente significativo; es decir, en este experimento no se obtiene evidencia acerca de que las empresas discriminen relativamente a las mujeres casadas y con hijos en la primera fase de los procesos de contratación.

En cambio, se obtiene un resultado muy claro de discriminación por razones de edad: las empresas reducen sustancialmente el interés que muestran por entrevistar a los candidatos de 38 años (respecto de los de 28 ó 24 años), lo que querría decir que la inclinación a discriminar a los trabajadores mayores puede ser elevada, y además puede tener lugar a partir de un umbral de edad sorprendentemente bajo.

Por último, al considerar los salarios ofrecidos por las empresas en sus ofertas de empleo (los salarios que ofrecían las empresas figuraban en muchos anuncios de empleo, ya que este concepto figura en el formato de anuncio estándar utilizado en *Infojobs*), se observa globalmente un ligero *gap* salarial mujeres-hombres de 95,31, el cual se explicaría íntegramente por la existencia de segregación ocupacional de género: las ocupaciones con menos nivel y menor remuneración coinciden con aquellas en las que las empresas analizadas se han interesado mayoritariamente por las candidatas.

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Junto al original del Papel de Trabajo se entregará también un resumen de un máximo de dos folios que contenga las principales implicaciones de política económica que se deriven de la investigación realizada.

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