

# Unexplored dimensions of discrimination in Europe: homosexuality and physical appearance

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**Abstract** We study labor-market discrimination of individuals with “specific” characteristics in Italy. We conduct a field experiment in two Italian cities: Rome and Milan, by sending “fake” CVs to real ads. We find that there is a strong penalty for homosexuals, i.e., about 30 % less chance to be called back compared to a heterosexual male and even more so if they are highly skilled. On the other hand, we find no penalty for homosexual females. We also find a beauty premium for females only but this premium is much lower when the “pretty” woman is skilled.

**Keywords** Discrimination · Gays · Lesbians · Field experiment

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## 1 Introduction

Discrimination in the labor market is maybe one of the most studied topics in economics but certainly the least understood. Indeed, when explaining the adverse

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labor-market outcomes of certain categories of workers (for example, ethnic minorities or women), it is very difficult to disentangle between discrimination and other (often) unobserved aspects such as low ability or social norms and peer effects. Recently, researchers in economics have been using new methods to tackle this issue: field studies (such as audit studies and correspondence tests) and natural experiments. The results convincingly show that there is discrimination against minority workers and women.<sup>1</sup>

In the present paper, we consider underinvestigated categories of individuals that might be discriminated against in the labor market. In particular, we focus on the labor-market outcomes of homosexual and nonattractive individuals.

We first present the theoretical mechanisms underlying discrimination in the labor market and survey the existing related empirical literature. Interestingly, homosexual females do not seem to suffer from discrimination in the labor market and, on the contrary, some studies reveal that they have a “premium” in terms of the probability of finding a job. Using the taste-based and statistical theories of discrimination, we can probably explain why homosexual males have adverse labor-market outcomes but not why we find the opposite result for homosexual females. There is another theory that can explain the latter fact. Becker (1981) has put forward the idea of specialization within families by arguing that heterosexual males specialize in market labor, and heterosexual females in household labor because of comparative advantages caused by biological differences. On the contrary, homosexual households are unable to specialize to the same extent as heterosexual households, because the gains from gender differences between spouses in comparative advantages do not exist. Lesbians who expect to form households will therefore not acquire less market-related human capital than heterosexual females, and will therefore have a higher chance of finding a job. In contrast, gay males are predicted to have worse labor-market outcomes than heterosexual males because they will invest less in market-related human capital than heterosexual males. Regarding unattractive individuals, the existing (limited) studies suggest the presence of a penalty, both for males and females, although the magnitudes varies greatly between the different studies. With the exception of some studies based on fields experiments in Sweden and few other studies using special datasets on one country, the evidence on these topics for most European countries is virtually nonexistent.

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<sup>1</sup>Indeed, economists have accumulated a large body of evidence on the existence of both gender and ethnic/racial discrimination using various empirical approaches ranging from traditional empirical data analysis (Kahn 1991; Knowles et al. 2001; Altonji and Pierret 2001) to field experiments (see Riach and Rich 2002 for an exhaustive survey of field experiments discrimination). Two main procedures of field experiments have been used to carry out tests for the extent of discrimination. A first procedure consists in matching two testers who attend job interviews or buy products, one from the majority group and the other from the minority. These experiments have provided strong evidence of discrimination in different contexts, including housing market (Galster 1990), sports car market (List 2004), car sales (Ayres and Siegelman 1995), or television shows (Levitt 2004). Another field approach to measure the extent of discrimination at the hiring stage consists in sending matched CVs that vary in only one variable (for example the name) to employers in response to job advertisements (see for instance, Neumark 1996; Bertrand and Mullainathan 2004).

In this paper, we conduct a field experiment in two Italian cities: Rome and Milan, to study the relationship between homosexuality or beauty and labor-market outcomes as measured by the difference in the percentage of callback rates between the reference group (homosexuals or “ugly” persons) and the control group (heterosexuals or “pretty” persons). For that, we send “fake” CVs, which clearly indicate the participation to a gay or lesbian organization for homosexuals and different pictures to highlight how handsome or ugly is the candidate. We randomly assigned CVs so that some belong to homosexuals and others to heterosexuals. We use the same procedure for the “beauty” of the person. The design of the experiment allows us to control for all possible nuisances that may bias the assessment of the relationship between sexual orientation in the first case and beauty in the other one.

We find that there is a statistical significant penalty (in terms of callback rates) associated to homosexual males of about 3 %, whereas homosexual females does not seem to show any significant difference with respect to heterosexual females. To be more precise, since the callback rate for males is 10 %, this means that, compared to heterosexual males, homosexuals have 30 % less chance to be called back. We also find that this penalty is higher for high-skilled homosexual individuals, with an associated magnitude of more than 8 % for homosexuals males. No penalty or premium is instead associated to high-skilled homosexual females, confirming that only males are penalized in the labor market for their homosexuality.

We then investigate differences in response of callback rates by picture beauty. We find that there is a significant premium for attractive females of about 2 % and no significant difference between handsome and ugly men. We also investigate whether the beauty premium for women varies by skills. We find that high-skilled attractive women are called back less often than low-skilled attractive women, which may indicate that beauty might not be an advantage for high-skilled women.

The rest of this paper unfolds as follows. In Section 2, we expose the different theories that may explain why individuals with specific observable differences end up with adverse labor-market outcomes. Section 3 gives an overview of the empirical literature. In Section 4, we describe our field experiments and investigate whether there is discrimination in callback rates between homosexuals or pretty individuals and heterosexuals or ugly individuals. Finally, Section 5 concludes.

## 2 Discrimination and labor-market outcomes: theoretical mechanisms

### 2.1 Standard theories of discrimination

The economics literature posits two major sources of discrimination: *taste-based* and *statistical*. The first one is due to the fact that employers dislike some categories of the population while statistical discrimination occurs in an environment of imperfect information where agents form expectations based on limited signals that correlate with some observable characteristics.<sup>2</sup>

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<sup>2</sup>See the overviews by Altonji and Blank (1999), Lang and Lehmann (2012), Kofi Charles and Guryan (2011), and Boeri and van Ours (2013).

To be more precise, *taste-based* models originate from Gary Becker's seminal work (1957). In Becker's model, discrimination in hiring or wages is caused by a "taste for discrimination," that leads the employer to hire or pay higher wages to members of his/her own group. In this approach, discrimination is costly and leads to segregated workplaces. In Becker's model, prejudiced employers, workers, or consumers dislike employing, working with, or purchasing from people with observable traits (like, e.g., race, gender, beauty, obesity, homosexuality, etc.).

If the Becker model is correct, the market should relentlessly eliminate discrimination except where it cannot provide sufficient segregation. This is most likely to occur for workers in specialized occupations requiring customer awareness of the characteristic of the worker, where firm entry is limited, where the proportion of discriminated workers in the labor force is large, and where prejudice is widespread.

The second main explanation for discrimination is defined as *statistical discrimination* and is based on incomplete information (Arrow 1973; Phelps 1972). According to models of statistical discrimination, employers have incomplete information about the employee's performance and consequently base their hiring/wage setting decisions on (erroneous) stereotypes. In Arrow's (1973) model and in a similar model developed by Phelps (1972), employers have (erroneous) beliefs that individuals from some particular groups (homosexuals for instance) are less productive and would act accordingly. Models of statistical discrimination differ in the fact that some authors consider that stereotypes are erroneous while others argue that stereotypes may correspond to actual group averages in equilibrium. In the first case, imperfect information would arise because discriminated groups emit noisier signals. Consequently, employers who observe ability with greater error (rationally) discriminate people belonging to discriminated groups (Phelps 1972; Aigner and Cain 1977; Cornell and Welch 1996). In the second category of statistical discrimination models, negative prior beliefs about members of a particular group may become self-fulfilling in equilibrium (Lundberg and Startz 1983; Coate and Loury 1993). This may be the case for instance if individuals of a specific group underinvest in human capital because they anticipate a discriminatory treatment and therefore that they will receive a lower return to education.

## 2.2 Discrimination theories more specific to homosexuals

Just as in the case of gender and ethnicity, there might be several possible means through which sexual orientation is independently related to a number of economic outcomes, such as earnings or the probability of finding a job. Two hypotheses have dominated in this literature. The first is the discrimination hypothesis, based on Becker's (1957) taste-based discrimination theory, or Arrow's (1973) and Phelps' (1972) statistical theory of discrimination (both theories have been exposed in the previous section). The second is the hypothesis of *specialization within families*. The predictions are the same: gay males are predicted to experience earnings disadvantages compared with heterosexual males, while lesbians are expected to experience earnings advantages compared with heterosexual females.

According to taste-based discrimination or statistical discrimination (see Section 2.1), employers may act on their bias against homosexuals, which may result in disadvantages on the labor market such as lower earnings or lower chance to find a job. This outcome is, however, more likely for gay males than for lesbians since attitudes towards gay males are much more hostile than are attitudes towards lesbians (Herek 2000; Kite and Whitley 1996). The statistical discrimination model is typically used to make predictions about lesbians. Stereotypes about lesbians, for example that they are more focused on their career, that they are less likely to have children, or that they are more masculine, are considered to be an important source of bias. In the statistical discrimination framework, lesbians therefore are predicted to do better than their heterosexual counterparts.

The idea of *specialization within families* was put forward by Becker (1981), who argued that heterosexual males specialize in market labor, and heterosexual females in household labor because of comparative advantages caused by biological differences. Heterosexual females therefore acquire less market-related human capital and more home-related human capital. In contrast, heterosexual males will acquire more market-related human capital. This results in earnings differentials between males and females. On the contrary, homosexual households are unable to specialize to the same extent as heterosexual households because the gains from gender differences between spouses in comparative advantages do not exist. Lesbians who expect to form households will therefore not acquire less market-related human capital than heterosexual females, and will therefore earn more. In contrast, gay males are predicted to earn less than heterosexual males because they will invest less in market-related human capital than heterosexual males.

### 3 Discrimination against homosexuals and physical appearance: overview of the empirical literature

Let us now review the empirical literature on the relationship between being homosexual or having a specific physical appearance and labor-market outcomes.<sup>3</sup>

#### 3.1 Homosexuality and labor-market outcomes

There is a relative small literature (especially in economics) on discrimination and the labor-market outcomes of being homosexual that we would like to review here. We will first examine if there is evidence of discrimination of homosexuals. Then, we will examine the consequences of being homosexual on the hiring process in the labor market.

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<sup>3</sup>Even though there is an important literature on earning differences (see, e.g., Ahmed and Hammarstedt 2010b, Ahmed et al. 2011), we focus here on employment outcomes since this is what we test in our experiments.

### 3.1.1 *Is there discrimination against homosexuals?*

During recent decades, economists have used field experiments in order to detect discrimination on labor markets, housing markets, and product markets in different countries (see Riach and Rich 2002 for an overview). Many of these field experiments have focused on females, on immigrants, on the elderly but less attention has been paid to discrimination against homosexuals.

Psychological and sociological research demonstrates the existence of sexual prejudice. Like other types of prejudice, sexual prejudice is an attitude; it is directed at a social group and its members; and it involves hostility or dislike. There is some literature in psychology furnishing proofs that negative attitudes towards homosexuals do exist (Herek and Capitanio 1996; Yang 1997).

Economic research regarding discrimination against homosexuals has so far primarily made use of register data and econometric methods. Focus has been on differences between homo- and heterosexuals in labor market outcomes.

There are very few experiments trying to test discrimination against homosexuals. In Canada, Adam (1981) established discrimination against male as well as female homosexuals who applied for jobs in Canadian law firms, and Weichselbaumer (2003) found that lesbian females were subject to discrimination when they applied for jobs in Austria.

To the best of our knowledge, Ahmed and Hammarstedt (2009)<sup>4</sup> were the first to have a field experiment studying discrimination against homosexuals on the housing market in Sweden. They conduct a study on the rental housing market using the internet as a research platform. Two fictitious couples, one heterosexual and one homosexual, both openly signaling their sexual orientation, apply for vacant rental apartments advertised by landlords on the internet in Sweden. Homosexuals are identified as individuals living with partners of the same sex. The authors explore the incidence of discrimination by observing how landlords e-mail back and invite applicants to further contacts and/or to a showing of the housing unit. Their findings show that homosexual males are discriminated against on the Swedish housing market, since the homosexual couple gets far fewer call-backs and fewer invitations to further contacts and to showings of apartments than the heterosexual couple.

### 3.1.2 *Employment differences between homosexuals and heterosexuals*

We would like now to study the difference in the hiring process in the labor market. In this section, we would like to survey the field experiments in this literature.

Interestingly, the European studies (Drydakis 2009, 2011, for Greece; Weichselbaumer 2003, for Austria) find strong evidence of discrimination against gays and lesbians in the hiring process while the North American studies (Adam 1981, for Canada; Hebl et al. 2002 for the US) find no effect. All these studies have some limitations and we would like to expose the recent study by Ahmed et al. (2013) for Sweden, which is the “cleanest” study in terms of testing this effect. They

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<sup>4</sup>See also Ahmed and Hammarstedt (2010b).

construct written applications consisting of an application letter that described a fictitious applicant and a résumé suited for applying to ten different occupations. The applications were sent to all employers that were announcing an open vacancy during the period between August 2010 and January 2011. The applicant's gender and sexual orientation were randomly assigned to the application for each employer they contact. Therefore, each potential employer received only one application, which was either from a heterosexual male or female or from a gay or lesbian person. The authors use distinctive male or female names to signal the gender of the applicant and labeled the applicant as a gay, lesbian, or heterosexual by revealing the gender of the applicant's spouse and by adding information about voluntary work in a homosexual organization (for gay and lesbian) and a neutral help organization (for heterosexual). Interestingly, this is the first nationwide field experiment, even though gays and lesbians tend to live disproportionately in big cities (Black et al. 2007). Ahmed et al. (2013) find that there is indeed discrimination in the hiring process in the labor market for both gays and lesbians. Gays are discriminated against in typical male-dominated occupations while lesbians are discriminated against in typical female-dominated occupations. The magnitude of the discrimination varies between different occupations and there is discrimination against gays and lesbians only in the private sector. To be more precise, a heterosexual female applicant received 22 % more responses from employers than a lesbian applicant while for a heterosexual male, this figure was 14 %.<sup>5</sup>

So far, we have reviewed the empirical literature on homosexuals. Physical appearance is also an aspect that has been studied and which is subject of discrimination. We would like to review the literature on “beauty” and to examine whether people who are not good looking are discriminated against and have adverse labor-market outcomes as compared to better-looking workers.<sup>6</sup>

### 3.2 Physical appearance and labor-market outcomes

A relatively large body of empirical literature has analyzed the correlation between beauty and labor market outcomes (for a review of this literature, see Hamermesh 2011). However, the evidence demonstrating a causal relationship is scarce.

Heilman and Saruwatari (1979) provide evidence of a positive correlation between beauty and labor market performance. They asked college students to rate resumes (which included a photograph) of applicants for one of two jobs, a traditionally male managerial job and a traditionally female nonmanagerial job. Subjects were told that all applicants had recently graduated and had been prescreened on the basis of educational and background qualifications. An examination of the results showed that

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<sup>5</sup>For Austria (Weichselbaumer 2003) and Greece (Drydakis 2011), a heterosexual female applicant received 31 and 123 % more responses from employers than a lesbian applicant while for a heterosexual male, this figure was 186 % for Greece since Weichselbaumer (2003) only studied lesbians.

<sup>6</sup>There is also a literature on the adverse-labor market outcomes of obese people that we do not review here since we focus in our experiment on attractive versus nonattractive persons.

attractiveness consistently was an advantage for male applicants but was an advantage only for females seeking traditionally female jobs. Attractive females were perceived as more feminine than unattractive females and were therefore at a disadvantage when seeking a job that traditionally required masculine characteristics. Biddle and Hamermesh (1994) provide further evidence of the beauty premium. Analyzing self-reported data on respondents' appearance and labor market variables, they find that unattractive people earn 5 to 10 % less than average-looking people, who in turn earn less than the good-looking individuals. Harper (2000) study individuals born in Britain. He finds that the penalty of being unattractive (a self-reported measure) is about 15 % lower wages for men and 11 % lower wages for women as compared to the attractive applicants. Fink et al. (2007) find attractiveness to be correlated with the subjects' physical strength. Fletcher (2009) uses longitudinal data on wages from the USA and finds that wage returns to (self-reported) attractiveness are large (5 to 10 %) relative to the returns to ability (3 to 6 %).

The works cited are all nonexperimental studies. The identification of a causal link between attractiveness and labor market performance is a complex task: one that becomes particularly questionable in nonexperimental settings. Different sources of biases, ranging from the selection into occupations/labor market to the potential reverse causality from income to attractiveness, might contaminate the results obtained from nonexperimental settings (Bertrand and Mullainathan 2004). In an experimental setting, Mobius and Rosenblat (2006) revealed that attractive people received higher wages because they were perceived as more able, conditional on productive skills. They find, however, that beauty is not correlated with labor productivity.

Different field experiments have been conducted in different countries. Using recent research in psychology, anthropology, and graphic design technology, people have been using the following methodology (similar to experiments testing discrimination of obese people). One constructs a series of fictitious faces and attach them to fictitious resumes. While ensuring that the resumes are of equal quality (by controlling for their content), researchers made the faces progressively more attractive or unattractive through manipulations by computer. The researchers then submit these fictitious resumes (including photographs) to real job openings and analyze the responses (callbacks).

For instance, in a randomly selected telephone survey in the USA (Kuran and McCaffery 2004), it was found that most of the participants felt that discrimination based on looks exceeded discrimination based on ethnicity or national background.

López Bóo et al. (2013) conduct a randomized field experiment in Buenos Aires, Argentina by providing evidence on the existence of discrimination based on physical appearance in an early stage of the job search process. Although they analyze a different question, their experiment design follows the empirical strategy utilized in Bertrand and Mullainathan (2004). Their results indicate that attractive people receive 36 % more callbacks than unattractive people. The authors also document that more attractive candidates are not only more likely to be contacted, but that they are contacted sooner than less attractive applicants. Given the experimental setting, the estimated beauty premia can only be attributed to the differences in facial



attractiveness of the job candidates. A similar study is that of Ruffle and Shtudiner (2010). These authors analyze the effects of attractiveness on callback rates following a similar experimental strategy but in Israel. They find similar effects.

#### **4 Do employers discriminate against physical appearance and sexual preference? A field experiment**

As stated above, estimating the effect of sexual preferences and personal appearances is difficult because it is practically impossible to deal with potential unobserved traits that are likely to be correlated both to sexuality and appearances. First, there is often an *absence of accurate information*. Unlike ethnicity and gender, which are both easily observable, the sexual orientation of individuals is not generally an observable trait and our way of identifying same-sex relationships (by asking to each respondent to identify—among the member of the household—his or her partner) is not without problems. This clearly biases the results. Second, since *homosexuality is not an observable characteristic*, its exposure can happen either voluntarily or involuntarily. If it occurs voluntarily, it is an endogenous action. According to economic theory, rational individuals should experience at least some benefits arising from such an action, which might also bias the results.

To circumvent these problems, we conduct a field experiment that builds on the correspondence testing methodology that has been primarily used in the past to study minority outcomes in the USA, notably by Bertrand and Mullainathan (2004).

We study the effect of perceived homosexuality and of physical appearances in the labor market by sending fictitious résumés to help-wanted ads in Rome and Milan. These are the two Italian cities with the biggest labor markets. We expected it to be easier to find there an on-line help-wanted ad and to receive a callback. As a matter of fact, most of the help-wanted ads in websites commonly used to advertise job vacancies are for jobs in Milan and in Rome. We experimentally manipulate perceived homosexuality by randomly modifying résumés by adding items that reveal sexual preferences. At the same time, we randomly attach to the résumés, pictures that have been previously ranked in terms of beauty to study the effect of appearances on labor market outcomes.

##### 4.1 Description of the experiment

The first step of the experimental design is to restrict the ads to whom résumés were sent. We restricted the field experiment to seven occupations: administrative clerk, bookkeeper, call center operator, receptionist, sales clerk, secretary, and shop assistant. These occupations were selected by looking at the distribution of help-wanted ads on specialized web sites. These seven occupations were the most frequent among those not requiring very specific skills for which would have been difficult to create standard profiles of job applicants.

The second step is to create templates for the résumés to be sent. To generate those templates, we collected résumés of actual job seekers by posting ads on the most

used Italian websites for job search.<sup>7</sup> From the *résumés* we received, we extracted information concerning the distribution of educational attainment including names of schools and colleges attended and types of experience including names of previous employers. More specifically, we construct databases containing names of high schools in Milan and in Rome (within an area of 30 km), names of colleges in Milan and in Rome, names of companies, and description of work experiences. These information were then used as a building block for generating the *résumés*.

*Résumés* were generated through an ad hoc software that randomly chose some characteristics from these ad hoc datasets.

For each city and occupation, we used six different identities, three males and three females. Some of their characteristics remain constant among *résumés* for the same city and occupation. First and last names for these identities were selected among the most common Italian names. For each occupation, we associated a specific name-surname pair. By doing so, we could easily understand the occupation and profile considered in case of callbacks. For example, “Giulia Villa” was always an administrative clerk in Milan, while “Francesco Ricci” was always a bookkeeper in Rome. The addresses of residence were chosen to give not any additional information about the socioeconomic status of the applicants. The year of birth of the applicants were randomly set between 1977 and 1992. Education and work experience were coherently set with the age of a particular applicant. We used six phone numbers, each of them associated with one name in Milan and one in Rome. This means that each number was associated to 14 different identities, 2 for each of the 7 occupations (then identified by the name-surname pairs).

The *résumé* items revealing of *homosexual preferences* were periods of internship in pro-gay advocacy groups that are real, well-known by the public at large, city-specific, and in any case their names were very explicit about the nature of the group like, for example, “Arcilesbica Roma,” “Centro di Iniziativa Gay-Arcigay,” or “DGP–Di Gay Project,” etc. Applicants in the control group have instead worked as interns for a period of similar length in a nongay/nonlesbian cultural association or in a company. In order to better match the occupation, tasks performed during internships were different across applicants. For each city and for each occupation, one of the three types of internship was associated with two identities, one male and one female.

For *physical appearance*, we randomly assign to each *résumé* a picture chosen among 89 previously collected photos of individuals aged between 20 and 35 years old. The photo was chosen in such a way that it minimized differences between the age declared in the *résumé* and the real age of the person depicted in the picture.

For each city and for each occupation, we created 1200 fake *résumés*. To understand how the program generates a fake *résumé*, consider a specific identity. Name, surname, home address, phone number, e-mail address, date and place of birth, and type of internship are fixed. First of all, the program randomly chooses the year of

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<sup>7</sup>In order to avoid generating false hope, candidates were notified by mail that the job vacancy they were applying for had already been filled.

birth from 1977 to 1992. Then, depending on the age, it picks a picture. The program associates pictures to identities who have 2 years from the age of the person in the picture. Secondly, the program randomly chooses the highest level of education attained. If it has selected a degree, then it randomly chooses a senior high school from the second dataset. Thirdly, the program fixes the length of the work period, accordingly to the following formula: length of work period = age – 19 – years of the degree – 6 months of internship. Then, on the basis of the years of work, the program assigns one, two, or three work experiences, accordingly to the following rules:

- work period  $\leq 3$  years: one work experience
- work period  $> 3$  years: two work experiences (each experience lasts “work period/2”)
- work period  $> 10$  years: three work experiences (each experience lasts “work period/3”)

Lastly, the program chooses a level of language skills and a level of computer skills. If the program has selected a senior high school or a degree specializing in modern languages, it then assigns to the résumé the knowledge of two foreign languages, one of which with excellent proficiency. For the computer skills, there are no constraints.

The beauty of the person portrayed in the picture was assessed by an independent panel formed by 24 people. Members of this panel had never seen in real life the persons in the picture. Some of the members of the panel were employees of an employment agency that specialize in matching résumés to open vacancies.

The field experiment started on January 17th, 2012 and ended on February 21st, 2012. During this period, for each city and occupation, we selected the most recent employment ads published in two websites: Job Rapido and Monster. They are the most popular websites among actual jobseekers. We answered to 531 ads, 336 in Milan and 195 in Rome. We typically sent four résumés in response to each ad: two from the treatment group and two from the control group. In total, we sent 2320 résumés. Our sample size is relatively low when compared to other field experiments consisting in sending fake CVs to potential employers. For instance, the total number of applications sent by Bertrand and Mullainathan (2004) is 4870. Although we would have preferred sending out a larger number of résumés, ethical considerations prevented us of doing so. Given the limited size of the two Italian markets considered, sending a larger number of fake CVs could have resulted in a lower call back rates for the real job applicants.

## 4.2 Results

Table 1 reports the recall rates by sex and cities. The overall response rate was about 11 %, with a minor difference between males and females (10.83 and 11.24 %, respectively). Looking at the percentages by city, the response rate is higher in Rome (about 16 %), where males were more likely to be called back than females (17.48 vs. 14.96 %). On the contrary, in Milan, the overall response is roughly divided by

**Table 1** Call back rates by city and gender

	Call back	All sample		Females		Males	
		Count	Freq.	Count	Freq.	Count	Freq.
All	Yes	256	11.03 %	130	11.24 %	126	10.83 %
	No	2,064	88.97 %	1,027	88.76 %	1,037	89.17 %
Rome	Yes	135	16.21 %	63	14.96 %	72	17.48 %
	No	698	83.79 %	358	85.04 %	340	82.52 %
Milan	Yes	121	8.14 %	67	9.10 %	54	7.19 %
	No	1,366	91.85 %	669	90.90 %	697	92.81 %

two (about 8 %) and males were less likely to be called back than females (7.19 vs. 9.10 %).<sup>8</sup>

Table 2 shows the call back rates by occupation, gender, and CVs' sexual orientation. The "call center operator" type of job was the occupation that received the highest rate of callbacks (also by gender), followed by "receptionist" and "sales clerk." Interestingly, people who sent their CVs to a secretary or a shop assistant job got a very low callback rate, i.e., 4.66 and 2.95 %, respectively. Males with heterosexual CV have higher call back rates than male homosexuals in all type of job with the exception of administrative clerk, sales clerk, and shop assistant. On the other hand, females with heterosexual CVs had generally higher call back rates.

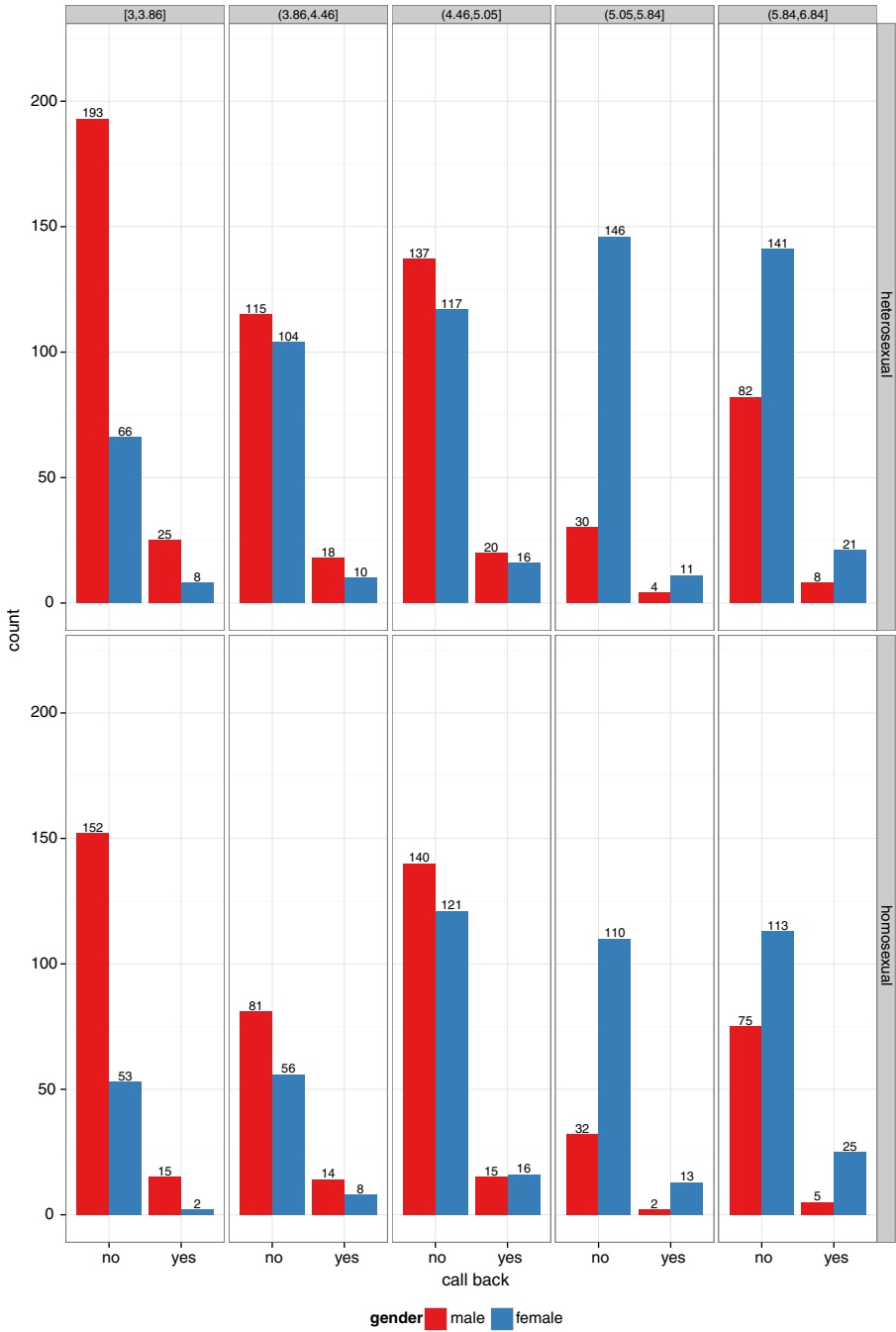
Figure 1 presents the distribution of call back rates by beauty score and by applicant's gender, differentiating between heterosexual (upper panel) and homosexual (lower panel) individuals. For example, if we consider the upper left panel, we see that there are 193 heterosexual males with a beauty score of [3, 3.86] (not good-looking persons) who did not get a call back while 25 did. Also, 66 heterosexual females with a beauty score of [3, 3.86] did not get a call back while 8 did. Interestingly, the pattern seems to be relatively similar between heterosexual and homosexual individuals, and between males and females, whether they are handsome or not. For example, if we look at heterosexual males who are "ugly," then 88.5 % of them were not called back while this number is 91.11 % for very handsome heterosexual males. For heterosexual females, these numbers are 89.18 and 87.03 %, respectively. More generally, this figure indicates that the call-back rates are quite low, which is consistent with previous studies.

We continue our data analysis by showing some evidence on the validity of our experiments for answering our main research question. Table 3 shows the association between our treatment variables and characteristics of the résumés and the ads (treatment variable "homosexual" and "beauty scores" in panels

<sup>8</sup>These call back rates are in line with those of other fields experiments that consist in sending matched CVs to employers. For instance, in their experiment, Bertrand and Mullainathan (2004) obtain a total call back rate of 8.05 %.

**Table 2** Call back rates by type of job, gender, and sexual orientation of the CV

Occupation		Cases	Heterosexuals call back		Homosexuals call back	
			No	Yes	No	Yes
Administrative clerk	Males	157	86 96.63 %	3 3.37 %	64 94.11 %	4 5.99 %
	Females	146	75 94.94 %	4 6.06 %	59 88.06 %	8 11.94 %
Bookkeeper	Males	153	76 90.47 %	8 9.53 %	67 97.10 %	2 2.90 %
	Females	154	83 96.51 %	3 3.49 %	61 89.71 %	7 10.29 %
Call center	Males	186	56 57.73 %	41 42.27 %	61 68.54 %	28 31.46 %
	Females	182	68 71.58 %	27 28.42 %	63 72.41 %	24 27.59 %
Receptionist	Males	145	69 87.34 %	10 12.66 %	62 93.93 %	4 6.07 %
	Females	143	68 86.08 %	11 13.92 %	57 89.06 %	7 10.94 %
Sales clerk	Males	169	81 92.04 %	7 7.96 %	73 90.12 %	8 9.88 %
	Females	190	99 90.00 %	11 10.00 %	67 83.75 %	13 16.25 %
Secretary	Males	161	85 95.6 %	3 3.4 %	71 97.26 %	2 2.74 %
	Females	161	83 92.22 %	7 7.88 %	68 95.77 %	3 4.23 %
Shop assistant	Males	192	104 97.20 %	3 2.80 %	82 96.47 %	3 3.53 %
	Females	181	98 97.03 %	3 2.97 %	78 97.50 %	2 2.50 %
	All	2320	1131 88.91 %	141 11.09 %	933 89.03 %	115 10.97 %



**Fig. 1** Beauty scores, sexual status, gender, and call back rates. *Upper panel* heterosexual, *lower panel* homosexual

**Table 3** Panel (a) reports Logit regression results, where the dependent variable is “homosexual.” Panel (b) reports OLS regression results, where the dependent variable is “beauty score”

	Panel (a)			Panel (b)		
	Dep. var: homosexual			Dep. var: beauty score		
	All sample	Females	Males	All sample	Females	Males
Beauty score	0.13*** (0.04)	0.12* (0.06)	0.11* (0.06)			
Homosexual				0.12*** (0.04)	0.10* (0.05)	0.10* (0.06)
Bookkeeper	0.01 (0.16)	0.10 (0.23)	-0.08 (0.23)	0.06 (0.08)	-0.05 (0.11)	0.16 (0.11)
Call center	0.13 (0.16)	0.20 (0.22)	0.07 (0.22)	0.02 (0.07)	-0.03 (0.10)	0.08 (0.11)
Receptionist	0.06 (0.17)	0.14 (0.23)	-0.01 (0.24)	-0.06 (0.08)	-0.08 (0.10)	-0.01 (0.12)
Sales clerk	0.03 (0.16)	0.19 (0.22)	-0.15 (0.22)	-0.01 (0.07)	0.02 (0.10)	-0.05 (0.11)
Secretary	0.03 (0.16)	0.10 (0.23)	-0.06 (0.23)	-0.02 (0.08)	-0.14 (0.10)	0.08 (0.11)
Shop assistant	0.00 (0.16)	0.06 (0.22)	-0.07 (0.23)	0.07 (0.07)	0.02 (0.10)	0.10 (0.11)
Rome	0.06 (0.09)	0.10 (0.12)	0.02 (0.13)	0.00 (0.04)	-0.03 (0.06)	0.03 (0.06)
Age	0.02** (0.01)	0.01 (0.01)	0.04*** (0.01)	-0.05*** (0.00)	-0.08*** (0.01)	-0.02*** (0.01)
Degree	0.14 (0.12)	0.19 (0.17)	0.13 (0.17)	0.10* (0.06)	0.16* (0.08)	0.06 (0.08)
Sex	-0.12 (0.90)			0.69*** (0.03)		
Constant	-1.44*** (0.39)	-1.09* (0.59)	-1.81*** (0.54)	5.73*** (0.14)	6.53*** (0.18)	5.63*** (0.20)
<i>N</i>	2320	1163	1157	2320	1163	1157

(a) and (b), respectively). We provide this table as a randomization check to examine whether random assignment has succeeded, thus enabling us to assess the internal validity of the experiment results. As expected, the beauty score is associated with a “gay” internship and with age. As a result, it is important in our following regression analysis to control for picture beauty and age when assessing the premium/penalty of being homosexual in the labor market. We also control for other covariates since, as it is well known, the inclusion

of exogenous regressors improves efficiency and thus increases the precision of the estimates.

A potential problem concerning the inference of the effects of homosexuality and beauty on the recall rate is the presence of unobservables that are constant at the city-type of job level. For this reason, we add dummy variables for the type of job and for the city in which the experiment took place which helps controlling for cluster like effects. As pointed out by Cameron and Miller (2014), however, controlling for fixed effects may not be enough for addressing the potential correlation induced by the presence of exogenous omitted variables that vary at the type of job and city level. One way to address the issue would be to correct the standard errors for cluster at the city level. The problem with this approach is that the asymptotic theory for the cluster robust variance estimator requires a large number of clusters. Since in our case the number of clusters is 2 (we have individuals living in two towns, Rome and Milan), this approach would be difficult to defend.<sup>9</sup> To explicitly take into account the most likely source of correlation at the city level not controlled for by the inclusion of city fixed effects, we expand the baseline specification to include occupation-city fixed effects, as in the following equation

$$recall_{ioct} = \beta_0 + \gamma Homosexual_{ioct} + \beta X_{ioct} + \alpha_t + \alpha_o + \alpha_c + \alpha_{oc} + u_{ioct}, \quad (1)$$

where  $i$  denotes the individual,  $o$  occupation,  $c$  city, and  $t$  time. The interaction dummies  $\alpha_{co}$ 's capture potential unobservables that vary at the occupation-city level. If the recall rate for, say, receptionists (but the same is true for each occupation) is city specific, not including these interactions would result in autocorrelation in the residuals. When estimating Eq. (1), our empirical results are robust to the inclusion of the occupation-city fixed effects and are similar to that of Tables 4, 5, 6, and 8 below. These results are available upon request.

Let us start with Table 4 to investigate the relationship between response rate (callback or recall rate) and homosexual preferences in panel (a) and between response rate and picture beauty in panel (b), with basic controls and distinguishing between males and females. We use linear probability models where the dependent variable takes value 1 if the identity of the person is called back (denoted "callback" in the table).<sup>10</sup> Our target variable in panel (a) is a dummy taking value 1 if the identity is associated with periods of internship in pro-gay advocacy groups and 0 otherwise (denoted by "homosexual"). In panel (b), it is a variable containing the beauty scores received by the picture associated with the identity (denoted by "beauty score"), as assessed by the jury panel. The scores range between 0 and 10, where 10 indicates the most attractive individual. Figure 2 shows the distribution of beauty scores in our sample of job applicants. The distribution is broken into five intervals, each containing approximately 20 % of the sample.

<sup>9</sup>Cameron and Miller (2014) consider explicitly the case of a small number of clusters and present Monte Carlo evidence showing that at least 10–15 clusters are needed in order to obtain tests with rejection rates close to the nominal ones.

<sup>10</sup>Although we only report results for the linear probability model, the findings in this section are qualitatively and quantitatively similar when using a saturated model in which age and beauty score are discretized.



**Table 4** OLS regression results

Dependent:	Panel (a)			Panel (b)			Panel (c)		
	All sample	Females	Males	All sample	Females	Males	All sample	Females	Males
call back									
Homosexual	-0.008 (0.012)	0.015 (0.018)	-0.031* (0.017)				-0.009 (0.012)	0.014 (0.018)	-0.030* (0.017)
Beauty score				0.005 (0.006)	0.018** (0.009)	-0.008 (0.009)	0.005 (0.006)	0.018* (0.009)	-0.007 (0.009)
Bookkeeper	0.004 (0.020)	-0.014 (0.030)	0.021 (0.025)	0.004 (0.020)	-0.018 (0.030)	0.020 (0.025)	0.004 (0.020)	-0.018 (0.030)	0.021 (0.025)
Call center	0.255*** (0.028)	0.192*** (0.041)	0.316*** (0.038)	0.255*** (0.028)	0.190*** (0.040)	0.314*** (0.038)	0.255*** (0.028)	0.190*** (0.040)	0.315*** (0.038)
Receptionist	0.051** (0.023)	0.047 (0.036)	0.054* (0.029)	0.051** (0.023)	0.047 (0.036)	0.053* (0.029)	0.051** (0.023)	0.046 (0.036)	0.054* (0.029)
Sales clerk	0.042* (0.022)	0.043 (0.034)	0.038 (0.028)	0.042* (0.022)	0.042 (0.034)	0.036 (0.028)	0.042* (0.022)	0.043 (0.034)	0.038 (0.028)
Secretary	-0.020 (0.018)	-0.020 (0.030)	-0.023 (0.022)	-0.020 (0.018)	-0.022 (0.030)	-0.025 (0.021)	-0.020 (0.018)	-0.022 (0.030)	-0.024 (0.022)

**Table 4** (continued)

Dependent:	Panel (a)			Panel (b)			Panel (c)		
	All sample	Females	Males	All sample	Females	Males	All sample	Females	Males
call back									
Shop assistant	-0.040** (0.017)	-0.058** (0.026)	-0.024 (0.021)	-0.040** (0.017)	-0.060** (0.026)	-0.024 (0.021)	-0.040** (0.017)	-0.060** (0.026)	-0.024 (0.021)
Age	0.039** (0.020)	0.028 (0.029)	0.044 (0.027)	0.038* (0.020)	0.023 (0.029)	0.038 (0.027)	0.039** (0.020)	0.020 (0.029)	0.040 (0.027)
Age2	-0.001** (0.000)	-0.001 (0.001)	-0.001* (0.000)	-0.001** (0.000)	0.000 (0.001)	-0.001 (0.000)	-0.001** (0.000)	0.000 (0.001)	-0.001 (0.000)
Rome	0.066*** (0.014)	0.048** (0.020)	0.085*** (0.020)	0.066*** (0.014)	0.048** (0.020)	0.084*** (0.020)	0.066*** (0.014)	0.048** (0.020)	0.085*** (0.020)
Constant	-0.443* (0.267)	-0.305 (0.394)	-0.505 (0.368)	-0.461* (0.269)	-0.330 (0.391)	-0.392 (0.377)	-0.475* (0.269)	-0.293 (0.394)	-0.408 (0.376)
R <sup>2</sup>	0.11	0.07	0.17	0.11	0.07	0.16	0.11	0.07	0.17
adj. R <sup>2</sup>	0.11	0.06	0.16	0.11	0.07	0.16	0.11	0.07	0.16
N	2320	1157	1163	2320	1157	1163	2320	1157	1163

Robust standard errors in parentheses. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

Results in panel (a) from Table 4 reveal a statistical significant penalty (in terms of callback rates) associated to homosexual males of about 3 %, whereas homosexual females does not seem to show a significant difference in callback rate with respect to heterosexual females, even though the sign is positive. Observe that the 3 % penalty

**Table 5** Panel (a) shows the OLS regression results of the same specification in Table 5 panel (c) plus additional controls describing the applicant’s characteristics and the requirements of the job posting

Call back	Panel (a)			Panel (b)		
	All sample	Females	Males	All sample	Females	Males
Homosexual	-0.008 (0.012)	0.014 (0.018)	-0.028* (0.017)	-0.008 (0.012)	0.014 (0.019)	-0.029* (0.017)
Beauty score	0.007 (0.006)	0.019** (0.009)	-0.006 (0.009)			
Beauty score ∈ (3.86, 4.46]				0.019 (0.019)	0.043 (0.033)	0.016 (0.025)
Beauty score ∈(4.46, 5.05]				0.027 (0.018)	0.052* (0.030)	0.017 (0.023)
Beauty score ∈(5.05, 5.84]				0.008 (0.019)	0.036 (0.029)	-0.009 (0.034)
Beauty score ∈(5.84, 6.84]				0.021 (0.020)	0.077** (0.032)	-0.036 (0.026)
Bookkeeper	0.012 (0.020)	-0.008 (0.031)	0.028 (0.026)	0.013 (0.020)	-0.007 (0.031)	0.029 (0.027)
Call center	0.256*** (0.030)	0.193*** (0.045)	0.317*** (0.040)	0.255*** (0.030)	0.192*** (0.045)	0.318*** (0.040)
Receptionist	0.040 (0.026)	0.037 (0.041)	0.045 (0.035)	0.040 (0.026)	0.038 (0.041)	0.046 (0.035)
Sales clerk	0.050** (0.024)	0.049 (0.036)	0.051 (0.031)	0.049** (0.024)	0.047 (0.037)	0.049 (0.031)
Secretary	-0.010 (0.021)	-0.020 (0.034)	-0.002 (0.027)	-0.010 (0.021)	-0.020 (0.034)	-0.001 (0.027)
Shop assistant	-0.041** (0.019)	-0.069** (0.030)	-0.014 (0.025)	-0.041** (0.019)	-0.069** (0.031)	-0.015 (0.025)
Age	0.069** (0.028)	0.038 (0.041)	0.077** (0.038)	0.072** (0.028)	0.038 (0.040)	0.078** (0.038)
Age2	-0.001** (0.000)	-0.001 (0.001)	-0.001** (0.000)	-0.001*** (0.000)	-0.001 (0.001)	-0.001** (0.000)
Rome	0.052*** (0.015)	0.040* (0.022)	0.062*** (0.021)	0.052*** (0.015)	0.040* (0.022)	0.062*** (0.021)
Constant	-0.943** (0.451)	-0.574 (0.641)	-0.959 (0.609)	-0.963** (0.446)	-0.511 (0.631)	-1.006* (0.607)

**Table 5** (continued)

Call back	Panel (a)			Panel (b)		
	All sample	Females	Males	All sample	Females	Males
$R^2$	0.13	0.10	0.20	0.13	0.10	0.20
adj. $R^2$	0.12	0.07	0.17	0.12	0.07	0.18
$N$	2320	1157	1163	2320	1157	1163
Additional controls	Yes	Yes	Yes	Yes	Yes	Yes

Control of the first kind are: years of working experience, dummies for type of secondary school attended, dummies for foreign languages proficiency, and dummies for different types of computer skills. Controls of the second kind are: dummies for whether the posting required a picture and/or a cover letter, and whether the posting targeted applicants of a given gender and/or good looking. In Panel (b), besides including these additional controls, we code beauty score using the quantiles of its empirical distribution. Robust standard errors in parentheses. \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

for homosexual males is quite high since the callback rate for males is 10 % (see Table 1), which means that compared to heterosexual males, they have 30 % less chance to be called back. This confirms previous evidence of discrimination and prejudice toward homosexuality in Italy (Capozzi and Lingiardi 2003; Lingiardi and Capozzi 2004; Lingiardi and Drescher 2003). For example, Lingiardi et al. (2005) found that male university students in Italy demonstrated more negative attitudes towards gay and lesbian people than female students.

Our results also confirm previous studies on the relationship between homosexuality and labor-market outcomes (see Section 3.1.2) where there is strong evidence of discrimination against gays in the hiring process. For example, Ahmed et al. (2013) for Sweden, which also construct “fake” CVs, find that a heterosexual male applicant received 14 % more responses from employers than a homosexual applicant. Using a similar methodology, Weichselbaumer (2013) shows that, for Germany, a single lesbian is 11–15 percentage points less successful than the single heterosexual woman while the partnered lesbian receives 11–13 percentage points fewer callbacks than the single heterosexual woman. Finally, for Greece, Drydakis (2009), shows that the estimated probability of gay applicants receiving an invitation for an interview was lower by 26 % than for heterosexuals.

Therefore, our results for sexual orientation in Italy show that the call-back rates are much lower than for Sweden and Germany while relatively similar to that of Greece. This is in line with survey results about attitudes against homosexuals in Europe. Indeed, Gerhards (2010) analyzes the value orientations of citizens through the 2000 European Values Survey (EVS). The EVS contains a question which allows to analyze citizens’ attitudes towards nondiscrimination of homosexuals. The question is formulated as follows: “Please, tell me whether homosexuality can always be justified, never be justified, or something in between.” Interviewees were asked to answer this question using a ten-point scale ranging from “never” (1) to “always” (10). Support for homosexuals in the northern, Protestant countries Sweden,

Denmark, and the Netherlands is rather high; in the Catholic countries Ireland, Italy, France, and Portugal, support is much lower. For example, Italy has a value of 4.8 while West Germany has a value of 5.7. Respondents in the EVS survey were also asked whether they would be opposed to having various minority groups as neighbors from a given list. One of the minority groups interviewees could mention

**Table 6** OLS estimation results

Dep. var:	All sample	Females	Males
call back			
Homosexual	-0.001 (0.013)	0.020 (0.020)	-0.019 (0.018)
Homosexual × good cv	-0.059* (0.036)	-0.057 (0.056)	-0.081* (0.047)
Good cv	0.044 (0.034)	0.073 (0.050)	0.012 (0.048)
Beauty ∈ (3.86, 4.46]	0.019 (0.019)	0.046 (0.033)	0.015 (0.025)
Beauty ∈ (4.46, 5.05]	0.027 (0.018)	0.052* (0.030)	0.016 (0.023)
Beauty ∈ (5.05, 5.84]	0.008 (0.019)	0.036 (0.029)	-0.008 (0.035)
Beauty ∈ (5.84, 6.84]	0.021 (0.020)	0.078** (0.032)	-0.037 (0.026)
Bookkeeper	0.012 (0.020)	-0.009 (0.031)	0.029 (0.027)
Call center	0.256*** (0.030)	0.191*** (0.045)	0.319*** (0.040)
Receptionist	0.040 (0.026)	0.039 (0.042)	0.046 (0.035)
Sales clerk	0.050** (0.024)	0.046 (0.037)	0.050 (0.031)
Secretary	-0.009 (0.021)	-0.020 (0.034)	0.000 (0.026)
Shop assistant	-0.041** (0.019)	-0.069** (0.031)	-0.015 (0.025)
Age	0.073** (0.028)	0.037 (0.040)	0.079** (0.038)
Age <sup>2</sup>	-0.001*** (0.000)	-0.001 (0.001)	-0.001** (0.000)
Rome	0.052*** (0.015)	0.039* (0.022)	0.061*** (0.021)

**Table 6** (continued)

Dep. var: call back	All sample	Females	Males
Constant	-0.980** (0.447)	-0.506 (0.631)	-1.022* (0.611)
$R^2$	0.13	0.10	0.20
adj. $R^2$	0.12	0.07	0.18
$N$	2320	1157	1163
Additional controls	Yes	Yes	Yes

Robust standard errors in parentheses. \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

were homosexuals. Opposing to having homosexuals as neighbors can be interpreted as a personal-level discrimination attitude. The results of a separate analysis show that the order of countries whose citizens did not mind having homosexuals as neighbors is quite similar to the ordering of the previous question. Our empirical results seem to confirm these facts when looking at the discrimination of homosexual individuals in the labor market.

Finally, it is interesting to compare our results with other results that deal with ethnic discrimination in the Italian labor market. The study by Allasino et al. (2004) is one of the few that identify discrimination in the recruitment of personnel belonging to immigrant minorities based on nationality using a field experiment. As in our study, they manipulate the application so that the two testers have personal and professional characteristics particularly well-suited to the requirements of the job and are substantially equivalent, except for nationality. Allasino et al. (2004) found discrimination in all three stages in which the process is divided, i.e., application for the job, invitation to interview, meeting with the employer, and offer of a job. As in our study, the majority of cases of discriminatory treatment occur in the initial stage, with the mere submission of the application (26.6%). In other words, in the first stage, the Moroccan tester was preferred 12 times, the Italian 154: the net discrimination against the Moroccan is thus 142 cases, of 26.6% of usable cases. This meant that in over one telephone call in four, the Moroccan tester did not even have the possibility of obtaining an interview or presenting his or her own abilities and experiences. Interestingly, this number of 26.6% is close to our 30%, which, in our case, meant that homosexual males had 30% less chance to be called back as compared to heterosexual males.

When we instead look at differences in response rates by picture beauty, panel (b) shows a significant premium for attractive females of about 2% and no significance difference between handsome and ugly men. This is in line with the beauty premium highlighted in Section 3.2. Panel (c) shows that these results remain unchanged when both our variables of interest (homosexuality and beauty) are included as regressors.

**Table 7** OLS estimation results

Dep. var:	All sample	Females	Males
call back			
Beauty	0.01 (0.01)	0.03*** (0.01)	0.00 (0.01)
Beauty × good cv	-0.03** (0.02)	-0.08*** (0.03)	-0.02 (0.02)
Good cv	0.16* (0.09)	0.42** (0.17)	0.09 (0.11)
Homosexual	-0.01 (0.01)	0.01 (0.02)	-0.03* (0.02)
Bookkeeper	0.01 (0.02)	-0.01 (0.03)	0.03 (0.03)
Call center	0.25*** (0.03)	0.18*** (0.04)	0.31*** (0.04)
Receptionist	0.04 (0.03)	0.03 (0.04)	0.04 (0.03)
Sales clerk	0.04* (0.02)	0.05 (0.04)	0.04 (0.03)
Secretary	-0.02 (0.02)	-0.03 (0.03)	-0.01 (0.02)
Shop assistant	-0.05** (0.02)	-0.08*** (0.03)	-0.02 (0.02)
Age	0.03 (0.02)	0.03 (0.04)	0.04 (0.03)
Age2	0.00** (0.00)	0.00 (0.00)	0.00* (0.00)
Rome	0.06*** (0.01)	0.04** (0.02)	0.08*** (0.02)
Constant	-0.30 (0.28)	-0.49 (0.63)	-0.34 (0.40)
$R^2$	0.12	0.10	0.18
adj. $R^2$	0.12	0.08	0.16
$N$	2320	1157	1163

Robust standard errors in parentheses. \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

In Table 5 panel (a), we use the same specification as in Table 4 panel (c) and add as controls all the other characteristics that were collected in our experiment. They include the type of secondary schools (for example, schools specialized in math or in literature, etc.), the years of experience of the candidate, whether he/she has

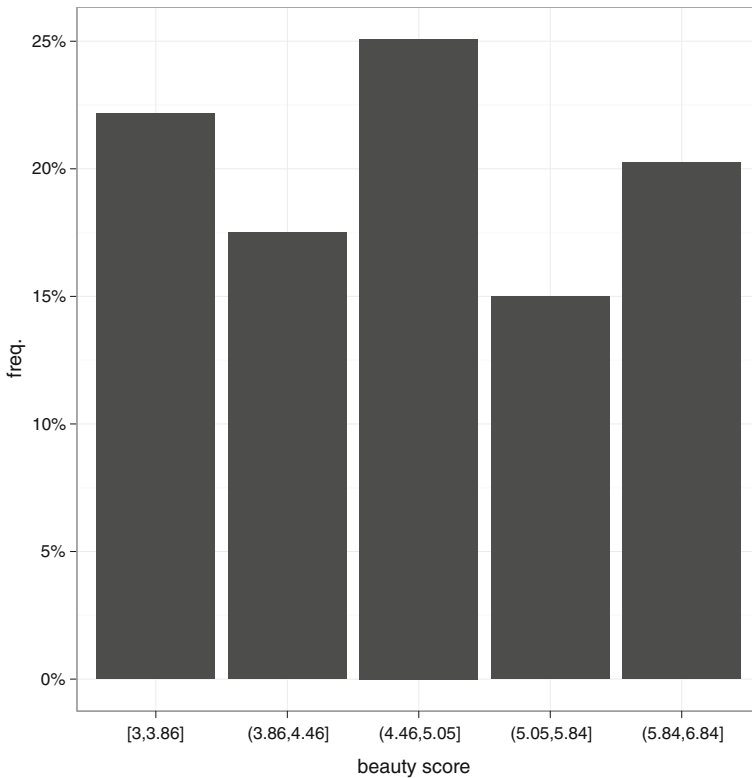
**Table 8** OLS regression results

Dep. var:	Gay/lesbians versus general associations			General association versus companies		
	All sample	Females	Males	All sample	Females	Males
call back						
Homosexual	-0.009 (0.015)	0.015 (0.021)	-0.035* (0.021)	-0.003 (0.017)	-0.009 (0.024)	0.001 (0.024)
Beauty score	0.009 (0.007)	0.028** (0.011)	-0.016 (0.010)	-0.001 (0.008)	0.008 (0.012)	-0.009 (0.014)
Bookkeeper	0.003 (0.024)	-0.002 (0.039)	0.000 (0.029)	0.037 (0.025)	0.006 (0.034)	0.074* (0.038)
Call center	0.236*** (0.034)	0.192*** (0.051)	0.281*** (0.047)	0.307*** (0.040)	0.237*** (0.056)	0.393*** (0.055)
Receptionist	0.031 (0.031)	0.027 (0.050)	0.035 (0.040)	0.083** (0.034)	0.098* (0.053)	0.096** (0.047)
Sales clerk	0.048* (0.028)	0.034 (0.043)	0.062* (0.037)	0.052* (0.029)	0.055 (0.043)	0.057 (0.040)
Secretary	-0.016 (0.025)	-0.032 (0.039)	-0.002 (0.031)	0.020 (0.026)	0.027 (0.042)	0.027 (0.032)
Shop assistant	-0.044* (0.023)	-0.091** (0.035)	-0.004 (0.031)	-0.018 (0.024)	-0.031 (0.039)	0.009 (0.030)
Age	0.096*** (0.034)	0.078 (0.048)	0.091** (0.046)	0.042 (0.038)	0.026 (0.055)	0.039 (0.052)
Age2	-0.001*** (0.000)	-0.001 (0.001)	-0.001** (0.001)	-0.001 (0.000)	-0.001 (0.001)	0.000 (0.001)
Rome	0.046** (0.018)	0.042 (0.027)	0.046* (0.024)	0.063*** (0.020)	0.044 (0.027)	0.081*** (0.030)
Constant	-1.379*** (0.533)	-1.297* (0.779)	-1.111 (0.712)	-0.493 (0.598)	-0.260 (0.842)	-0.475 (0.843)
$R^2$	0.12	0.11	0.18	0.15	0.13	0.23
adj. $R^2$	0.11	0.07	0.15	0.13	0.08	0.20
$N$	1684	840	844	1272	640	632

The first panel displays the results when excluding individuals from the control group having internships in companies. The second panel excludes instead individuals having internship in pro-gay/lesbian cultural association. Although not reported, all specifications include as regressors: age, age<sup>2</sup>, dummies for type of job, and city dummy. Robust standard errors in parentheses. \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

college degree or not, and characteristics of the ads, namely if the ad was targeting a specific gender, if the ad was mentioning the equal opportunity (nondiscriminatory) act, if the picture was required, if a cover letter was required (if it was required, we sent a cover letter), if the ad was posted by an employment agency or directly by a company, if the knowledge of one or more foreign languages was required, and if a





**Fig. 2** Distribution of beauty scores into intervals. Each interval contains approximately 20 % of the sample of job applicants

computer knowledge was specified by the ad. The results remain unchanged. In Table 5 panel (b), we instead investigate possible nonlinearities in the relationship between response rate and picture beauty by coding the beauty scores with a set of dummy variables capturing various beauty ranges. These ranges are those plotted in Fig. 2. The main results remain mainly unchanged, i.e., attractive females are the group that seem to receive a premium whereas attractive males do not. However, these results show that this premium for females seem to be mainly driven by highly attractive women (in the extreme upper tail of the beauty score distribution) that appear to receive a premium of almost 8 %.

We continue our analysis in Table 6 by using the same specification as in Table 5 panel (b) and add an interaction term between our dummy capturing homosexual preferences (“homosexual”) and a dummy variable (“good CV”) taking the value 1 if the individual is depicted in the résumé as having a college degree with excellent English proficiency and excellent computer skills and zero otherwise.<sup>11</sup> Our aim is

<sup>11</sup>Ahmed et al. (2010a) also discuss the effects of adding positive information to applications in a field experiment.

to investigate if the penalty associated with homosexual preferences is mitigated for high-skilled individuals. Interestingly, we find the opposite result. Indeed, Table 6 reveals that the penalty seems to be actually higher for high-skilled homosexual individuals, with an associated magnitude of more than 8 % for homosexuals males. No penalty or premium is instead associated to high-skilled homosexual females, confirming that only males are penalized in the labor market for their homosexuality. This suggests that high-skilled homosexuals are more discriminated against than low-skilled homosexuals, although our experiments only considers jobs with low-skilled profiles.

In Table 7, we then investigate whether the beauty premium for women varies by skills. We find that high-skilled attractive women are called back less often than low-skilled attractive women. This may indicate that beauty might not be an advantage for high-skilled women.

A possible concern, however, can be that employers are discriminating between internships in cultural associations and in companies, as the control group includes identities reporting internships both in nongay/nonlesbian cultural associations and companies. If employers prefer to employ people that had experience in companies rather than in cultural associations, then the penalty associated with pro-gay/lesbian cultural associations can simply capture the penalty associated with experience in a cultural association rather than in a company.

We investigate this issue in Table 8. In panel (a), we display the results when excluding individuals from the control group having internships in companies. Our target variable is thus now a dummy taking value 1 if the résumé reports an internship in a pro-gay/lesbian cultural association and 0 if the intership is a non-pro-gay/lesbian cultural association. One can see that the results are virtually the same as those reported in Table 4, with even a slightly higher penalty for homosexual males (about 3.5 % in Table 8 vs. about 3 % in Table 4). As a further robustness check, we investigate in Table 8 panel (b) if employers actually discriminate between internships in cultural associations and in companies. The results show that this is not the case. When excluding from our sample individuals with homosexual preferences and coding our target as 1 if the internship was in cultural associations and 0 if instead it was in a company, Table 8 shows no statistical differences in response rates between the two groups. This further robustness check increases our confidence in the estimated penalty of 3 % for homosexuals in the labor market and the fact that employers tend to discriminate against homosexuals in the labor market.

## 5 Concluding remarks

In this paper, we contribute to the political debate on discrimination in Europe by considering unexplored dimensions of discrimination. For that, we conduct a field experiment in Rome and Milan and find that there is a strong penalty for homosexuals. Indeed, homosexuals have 30 % less chance to be called back compared to heterosexuals and even more so if they are highly skilled. On the contrary, no penalty

exists for homosexual females. We also found a beauty premium for females only but this premium is much lower when the “pretty” woman is skilled.<sup>12</sup>

Different economic arguments can be considered to explain our results. Following Becker (1957), employers may dislike the lifestyle of gay men but not of lesbians and then act on this bias. Research in social psychology has indeed shown that the attitudes towards gay men are much more hostile than the attitudes towards lesbians (see, e.g., Kite and Whitley 1996; Herek 2000). The results could also be explained by an argument based on statistical discrimination (Arrow 1973; Phelps 1972). For gay men, an often-mentioned reason for statistical discrimination is HIV/AIDS since this is often the source of negative attitudes towards gay men (Badgett 2001; Elmslie and Tebaldi 2007). Statistical discrimination may then occur if employers believe that HIV/AIDS infection decreases workers’ productivity and increases absenteeism. In contrast to gay men, most people think that lesbians are more focused on their careers, not on husbands or children, and that they have a strong aggressive style (Peplau and Fingerhut 2004).

We can also apply the standard economic theories of discrimination (tasted base and statistical) to explain the negative impact on the labor-market outcomes of less-attractive individuals. Since previous experimental research indicates that beauty is not correlated with labor productivity (Mobius and Rosenblat 2006), our finding may suggest the existence of labor market discrimination against the less attractive workers, especially women. The fact that high-skilled pretty women obtain less beauty premium than low-skilled pretty women may indicate the fear of competition with these women for certain types of jobs. Importantly, we show that the beauty results are particularly relevant for occupations requiring the interaction with customers as secretaries, receptionists, and general customer service.

Finally, the sexual orientation and beauty results as gender differences may be driven by occupational segregation in some of the vacancy profiles targeted in the experiment.

All these issues are really complex and the mechanisms behind them difficult to identify. More work should be done, both from a theoretical and empirical viewpoint, and we leave that for future research.

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<sup>12</sup>One could argue that what is relevant from an economic point of view is not whether gays are called back at lower rate, but whether they are hired with lower probability. This is a common shortcoming of fake CVs studies as they can—by design—only provide answers to the question whether certain groups are discriminated in call backs and not whether they are then actually discriminated in the hiring decision. Yet, we believe that discrimination in the call back decision is still discrimination as it limits opportunity. This is especially relevant here as the magnitude of the penalties we found are very large.

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