

ALI AHMED, LINA ANDERSSON & MATS HAMMARSTEDT
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Are gays and lesbians discriminated against in the hiring process?



Abstract

This paper presents the first field experiment on sexual orientation discrimination in the hiring process in the Swedish labor market. Job applications were sent to about 4,000 employers in 10 different occupations in Sweden. Gender and sexual orientation were randomly assigned to applications. The results show that sexual orientation discrimination exists in the Swedish labor market. The discrimination against gays and lesbian varies across different occupations and appears only in the private sector. The results also seem to suggest a new dimension of traditional gender roles; the gay applicant was discriminated against in typical male-dominated occupations whereas the lesbian applicant was discriminated against in typical female-dominated occupations. Thus, the results suggest that gays to some extent face the same obstacles on the labor market as heterosexual women.

Contact information

Ali Ahmed

Linnaeus University Centre for Labour Market and Discrimination Studies

SE-351 95 Växjö

ali.ahmed@lnu.se

Lina Andersson

Linnaeus University Centre for Labour Market and Discrimination Studies

SE-351 95 Växjö

lina.andersson@lnu.se

Mats Hammarstedt

Linnaeus University Centre for Labour Market and Discrimination Studies

SE-351 95 Växjö

mats.hammarstedt@lnu.se

1. Introduction

Research from different countries has documented differences in labor market outcomes due to sexual orientation. Research on this topic has mainly focused on earnings differentials between heterosexuals and homosexuals, but attention has also been paid to differences in occupational rank.¹ The results point, in all essential, in the same direction: Gays earn less than heterosexual males, while lesbians earn about the same, or sometimes more, than heterosexual females.² Furthermore, gays have lower probabilities of working in occupations that demand longer university education than heterosexual males, while the opposite pattern has been found for females.³

Two main explanations for the results have been put forward. One explanation is that differences in labor market outcomes due to sexual orientation are a result of specialization within families (Becker, 1981). This theory predicts that since a homosexual couple consists of two males or two females, homosexual couples divide their time between market work and household work in a different way than heterosexual couples, and that this shows up in differences in labor market outcomes between homosexuals and heterosexuals.⁴ The other explanation is found in the occurrence of discrimination against homosexuals in the labor market. Discrimination against homosexuals might be based on tastes (Becker, 1957) or incomplete information (Phelps, 1972). Both types of discrimination against gays and lesbians are likely to occur as research from different disciplines has shown (Berill, 1992; Kite and Whitley, 1996; Herek, 2000; Herek, 2002).

Despite the relatively large number of studies that have documented differences in labor market outcomes due to sexual orientation, only a few attempts have been made to discriminate between these two explanations. One reason for this is that even though survey-based studies give useful information about the difficulties that gays and lesbians face in the labor market, these studies do not provide sufficient information to reveal the extent to which differences in labor market outcomes due to sexual orientation are caused by discrimination. An effective way of assembling evidence of discrimination is to use field experiments. Controlled field experiments have been used extensively to study discrimination in various markets and have proven to be powerful in providing evidence of racial discrimination.⁵ The present study, therefore, utilizes a field experiment to examine whether gay and lesbian people are discriminated against in the Swedish labor market.

There are only five previously documented field experiments that have investigated discrimination against gays and lesbians in the hiring process: Adam (1981) in Canada, Drydakis (2009, 2011) in Greece, Hebl et al. (2002) in the US, and Weichselbaumer (2003) in Austria.⁶ The results from the studies conducted in North America and Europe are strikingly different. While the European studies provide strong evidence of

¹ As conventional in the literature, we use the term gay for homosexual men and the term lesbian for homosexual women throughout this paper.

² See Badgett (2006) for a review of early studies and see, for example, Ahmed and Hammarstedt (2010), Carpenter (2008), and Elmslie and Tebaldi (2007) for some recent studies.

³ See Frank (2006) and Ahmed et al. (2011a).

⁴ For a further discussion, see Ahmed et al. (2011b).

⁵ See Riach and Rich (2002) for a review and see Bertrand and Mullainathan (2004) and Carlsson and Rooth (2007) for recent field experimental studies on racial discrimination.

⁶ Ahmed and Hammarstedt (2009) as well as Ahmed et al. (2008) have conducted field experiments in order to investigate discrimination against gays and lesbians in the Swedish rental housing market.

discrimination against gays and lesbians no such evidence is found in the North American studies.

All of these studies are limited in one way or another. First, the jobs applied for are in all studies limited to employers in a small geographical area or to employers in one single city. Second, Adam (1981), Hebl et al. (2002), and Weichselbaumer (2003) only focused on one single occupation. Third, Adam (1981) and Hebl et al. (2002) were both small-scale experiments and therefore had unsatisfactory sample sizes. Finally, although Drydakis (2009, 2011) and Weichselbaumer (2003) had more satisfying sample sizes, Drydakis (2009) chose to study discrimination against gays only, whereas Weichselbaumer (2003) and Drydakis (2011) focused exclusively on lesbians. Hence, even though there are a few previous field experimental studies, there is a need for a comprehensive field experiment that includes several important aspects, such as different types of occupations, both genders, both gay and lesbian applicants, and a wider geographical area, simultaneously, in a single study. This is needed in order to obtain an overall fair picture of discrimination based on sexual orientation in the labor market. The present study satisfies this need.

We constructed 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 then 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 we approached. Hence, each potential employer received only one application, which was either from a heterosexual male or female or from a gay or lesbian individual. We used distinctive male and female names to signal the gender of the applicant and labeled the applicant as gay, lesbian, or heterosexual by revealing the gender of the applicant's spouse and by adding information about voluntary work in a homosexual organization or a neutral help organization, respectively. The fact that the applicants revealed the gender of their spouses in their applications makes our results representative for open homosexuals living in stable relationships but not for homosexuals in general. We investigated the incidence of discrimination by observing the choice by employers to call back and invite applicants to send complementary information, invite applicants for a job interview, or offer a job.

We make several important contributions. First, this is the first field experimental study of sexual orientation discrimination in the Swedish labor market. Sweden happens to be a suitable testing outlet for a field experiment on sexual orientation discrimination in the labor market. Public opinion of gays and lesbians in Sweden is among the most liberal and tolerant in the world (Gerhards, 2010), but interview-based studies from Sweden have consistently documented that gays and lesbians often suffer from problematic situations in the labor market that heterosexuals do not (Forsberg et al., 2003). Second, this is the first nationwide field experiment. Gays and lesbians have been found to be disproportionately located in larger cities. This has been explained by the fact that residents in larger cities have more liberal attitudes towards homosexuals (Black et al., 2007). This makes it important to conduct a study that includes both larger and smaller cities in order to investigate whether or not discrimination against homosexuals is more severe in smaller than in larger cities. Third, we applied to jobs in ten different types of occupations. This should be compared to Drydakis (2009, 2011), who included four types of occupations, while the other previous studies focused on only a single occupation. We believe it is important to include a larger number of occupations

because discrimination might vary across different occupations and depending on whether occupations are typical female- or male dominated. Therefore, in our sample, we include jobs that are male-dominated, jobs that are female-dominated, and jobs that are gender neutral. Finally, this is the first field experiment that investigates discrimination against both gays and lesbians in a labor market. This is important because the experiences of gays and lesbians in the labor market may differ. This has not least been shown in the literature on earnings differentials between homosexuals and heterosexuals. Hence, compared to previous studies we make numerous efforts in order to examine several important heterogeneities related to discrimination against homosexuals.

We arrive at the following conclusions: Our results document discrimination against gays as well as against lesbians. We also find that gays are discriminated against in typical male-dominated occupations while lesbians are discriminated against in typical female-dominated occupations. However, compared to previous research from Europe the discrimination is smaller in magnitude. Besides the fact that the magnitude of the discrimination varies between different occupations, we only find discrimination against gays and lesbians in the private sector. The rest of this paper is organized as follows: The next section (Section 2) presents the experimental methodology, Section 3 documents the results, and Section 4 contains the discussion.

2. Experimental methodology

2.1 Randomized correspondence test

We followed Adam (1981), Drydakis (2009, 2011), and Weichselbaumer (2003) by using a *correspondence test* experiment, which do not require any real applicants.⁷ Fictitious applicants were created and only written applications were sent out to employers.⁸ This is desirable from a methodological point of view, since it enables a rigorous control over the treatment and control conditions in the experiment. Correspondence tests are also more desirable from a practical point of view, since they simplify the logistics of the experiment.

We chose to use a *randomized assignment procedure*.⁹ One application was constructed and only one application was sent to each employer. The type of applicant (gender and sexual orientation) was randomly assigned to each application. This allowed us to use completely identical letters of application and we avoided the risk of being exposed by the employers. We did so because we had four types of applicants in our experiment: heterosexual male and female, and gay and lesbian.¹⁰

⁷ Alternatively one can use situation tests, which involve recruiting real people who approach employers personally. Situation tests have been criticized for, among other things, lack of control over the real testers who approach the employers. See, for example, Heckman (1998) for an early discussion.

⁸ Hence, field experiments of discrimination involve deception. The present research was therefore reviewed by The Swedish Ethical Review Board before it was initiated and executed. The board concluded that these types of experiments are not comprised by the Ethical Review Act regarding the ethics of research involving humans.

⁹ Alternatively, one can use a matched assignment procedure where all types of fictitious applicants apply to all employers. Hence, each employer in the sample receives multiple applications. The applications are, of course, carefully matched, but they are not identical.

¹⁰ One example of an application letter is provided in the Appendix.

2.2 Identities of the fictitious applicants

Since we only sent one application to each employer, we only needed one distinctive male name, one distinctive female name, and one surname. We named our male applicants Erik and our female applicants Maria, and all four applicants had the surname Johansson.¹¹ As a result, our experimental fictitious applicants were Erik Johansson, the heterosexual or the gay male applicant, and Maria Johansson, the heterosexual or the lesbian female applicant. We bought a real postal address in central Stockholm to which employers could send their written correspondence.¹² Four similar e-mail accounts were created and four telephone numbers with voicemail were registered.¹³

At the time of the experiment our applicants were 32 years old (born May 18, 1978), married, and had no children.¹⁴ The applicants had 15 years (or 11 years, if the job required higher education) of experience in a specific occupation. They liked being in nature and enjoyed jogging and walking. Further, they were interested in photography and liked doing voluntary jobs. Accordingly, besides e-mail addresses and telephone numbers, all other information was purely identical for our four fictitious applicants. The variables that we randomly varied across employers were gender and sexual orientation.

2.3 Choice of occupations

We wanted to contribute to the literature by including a larger number of occupations in our study. A further requirement that we had was to select occupations with different composition of gender shares. We selected occupations that were typically male-dominated, female-dominated, and neutral. A final requirement that we had was that the labor market demand in the occupations was high enough. Thus, we ended up selecting ten broad occupations for our study. Five female-dominated occupations: shop sales assistant, preschool teacher, cleaner, restaurant worker, and nurse. Four male-dominated occupations: construction worker, motor vehicle driver, sales person, and mechanic worker. And, one neutral occupation: high school teacher.¹⁵

2.4 Gender and sexual orientation labeling

The application consisted of three parts. First, there was a message in the e-mail sent to the employers. This was simply a statement of interest. The second part was an

¹¹ According to Statistics Sweden, Erik and Maria were the most common given Swedish names for males and females, respectively, and Johansson was the most common surname in Sweden, current as of 31 December 2009 (see http://www.scb.se/Pages/ProductTables___30919.aspx).

¹² The real physical address was registered at the postal address provider Brevia Mail KB.

¹³ The e-mail accounts were registered at gmail.com and four mobile telephone numbers were registered at Tele2 Sverige AB.

¹⁴ We chose this age because we wanted our fictitious applicants to be old enough to have some years of experience and to be married. At the same time, we wanted them to be young enough to not have any children. Also, disclosure of homosexuality is presumable more likely among younger people. Further, age itself may be related to discrimination in the labor market, see Ahmed et al. (2011c). We, therefore, chose to hold age constant in this experiment.

¹⁵ The categorization into male- and female-dominated occupation was based on the gender occupational structure in Sweden (Statistics Sweden, 2010). The share of females in the female-dominated occupations ranges from 65% among shop sales assistants to 93% among preschool teachers and nurses. The share of males in male-dominated occupations ranges from 72% among sales persons to 99% among construction workers.

application letter, which was attached to the e-mail. This letter provided the name of the applicant, which revealed the gender. In one of the paragraphs in the application letter, we labeled our applicants as gay, lesbian, or heterosexual. If the applicant was a heterosexual male (female), we wrote, “In my spare time, I enjoy spending time with my wife (husband),” and if the applicant was gay (lesbian), we wrote, “In my spare time I enjoy spending time with my husband (wife).” Hence, we clearly signaled the sexual orientation of the applicant by revealing the gender of the applicant’s spouse. Further, following the labeling technique in previous studies (Adam, 1981; Drydakis, 2009; Weichselbaumer, 2003), we also included a sentence that stated an interest in voluntary work. For the gay and lesbian applicants, we included that they were “engaged in the Swedish Federation for Lesbian, Gay, Bisexual, and Transgender Rights.” For the heterosexual applicants, we wrote that they were “engaged in the Swedish Red Cross.” Finally, for the gay and lesbian applicants, we also added that they had been actively engaged in the organization of Stockholm Pride Festival. Hence, we signaled the sexual orientation of our applicants in three distinctive ways.

The final and third part of the application was a short résumé. The résumé gave full contact information, date of birth, information about work experience and previous employment, education, and language skills. Of course, all of this information was accommodated for the different targeted occupations, but was identical across our applicants.

One could speculate about how common it is to tell a potential employer about engagement in voluntary work. It is, however, reasonable to assume that job seekers would highlight all engagements and activities that would signal that they like working and that would demonstrate their abilities. We believe that the voluntary activities mentioned in our case are such engagements.

The effect of signaling voluntary work might vary with gender and different occupations. However, our primary focus is not to study gender discrimination and the analysis is done separately for men and women. Controlling for that the effect of signaling voluntary work might differ across occupations is difficult, because there are so many other unobserved factors that simultaneously vary across occupations. However, since the analysis is conducted using a randomized experiment, this should not be a problem.

At this point, we need to discuss a possible limitation of this experiment that the reader should bear in mind when reading our results and conclusions. We did not directly indicate sexual orientation, but signaled it by revealing the spouse’s gender and through involvement in homosexual related voluntary work (RFSL and Pride Festival) for homosexual applicants and voluntary involvement in the Swedish Red Cross for the heterosexual applicants. One objection to our signaling of sexual orientation could be that the homosexual applicants’ voluntary engagement might make them appear as activists, while the heterosexual applicants’ voluntary engagement might make them look like philanthropists. In other words, homosexual applicants may signal activism while heterosexual applicants may signal generosity.

If this were the case, it is reasonable to argue that a signal of activism would have negative impact while a signal of generosity would have a positive impact on employers’ perceptions about the applicants. How would this affect the interpretation of our results? We argue that if we assume that the two voluntary engagements signal

different qualities and we find sizable discrimination against homosexual applicants, then the size of the discrimination should be interpreted with care because it runs the risk of being overestimated. We further argue that this caveat is especially important if we find discrimination against homosexuals consistently across all different occupations and for both men and women. We conjecture that if there is a positive effect of signaling generosity and a negative effect of signaling activism, then these effects should be apparent in all or most types of occupations regardless of the gender of the applicant. As will appear in the results later on, however, the magnitude of discrimination and the inconsistency of discrimination across different occupations and between men and women in our data seem to suggest that above mentioned effects of voluntary work are minor, if not absent.

2.5 Procedure and protocol

Vacant jobs were found on the Web site of the Swedish Public Employment Service, which is the main channel for job searches in Sweden.¹⁶ We applied to all available jobs in the selected occupations from August 16, 2010 to January 31, 2011. We only applied to jobs that welcomed applications through e-mail.¹⁷ We recorded the gender of the applicant, the sexual orientation of the applicant, and the type of the occupation. From the job announcements, we recorded mainly the following information: date of job opening, city, if the job was temporary, if the job was a full-time job, and if the employer was a public sector employer (i.e., if the employer clearly was a public authority such as a municipality or a county council).¹⁸ Finally, we recorded the responses from the employers. Whenever employers invited the applicants to provide further information, invited the applicants for an interview, or offered the applicants a job, it was recorded as a callback. Such positive responses from the employers were promptly and politely declined to minimize the inconvenience to the employers.

3. Results

3.1 Proportion of job applications that led to a positive response

Table 1 summarizes the results and shows that we, in total, applied to 3,996 available jobs.¹⁹ Table 1 presents the proportion of job applications that received a positive response (invitation to an interview or to send complementary information or job offer) for all occupations as well as for different types of occupations and for jobs with different characteristics. With regard to the overall results (all occupations), we find that the gay applicant received a positive response to about 26% of his job applications,

¹⁶ See the Web page of Swedish Public Employment Service (Arbetsförmedlingen) at <http://www.ams.se/>. About one-third of all vacant jobs in Sweden are announced here.

¹⁷ It was not possible to apply for jobs via email in approximately 10% of the job openings. For practical reasons they were excluded from this study.

¹⁸ The majority of the jobs applied for within each occupation were private sector jobs. The share of private jobs was over 98% in all occupations except for preschool teacher, high school teacher, and nurse. In these occupations the share of jobs with a public employer amounted to between 44 and 49%.

¹⁹ Actually, we applied to 4,131 available jobs. In 96 cases, however, the e-mail addresses to the employers were misspelled in the job ads. Applications in these cases, therefore, never reached the employer and were instead automatically returned back to us. Another 39 observations were incomplete in their information. All these observations were excluded from the analysis, which resulted in a sample of 3,996 observations.

while heterosexual male applicant received a positive response to about 30% of his applications. This translates into a difference of about 14% between gay men and heterosexual men. For the lesbian applicant, the proportion of applications that led to a positive response was about 26%, while the corresponding figure for the heterosexual female applicant was slightly less than 32%. The difference between lesbians and heterosexual females thus amounts to around 22%.

Table 1 reveals significant differences between different types of occupations in the share of applications that led to a positive response. The highest share was found for the occupation of preschool teacher, where about 50% of the applications led to a positive response. About 40% of the applications led to a positive response for the occupation nurses. The lowest shares of applications with positive responses were found for the occupations of shop sales assistants, cleaners, and mechanic workers.

However, statistically significant discrimination due to sexual orientation is only found within a few occupations. The gay applicant was discriminated against in the occupations shop sales assistant ($p = 0.0548$) and mechanic worker ($p = 0.0620$). The difference in positive callback rates between heterosexual men and gay men in these occupations amounts to around 10 percentage points. However, it is worth noting that the heterosexual applicant received about twice as much positive callbacks than the gay applicant in these occupations. Furthermore, the lesbian applicant was discriminated against in the occupation cleaner ($p = 0.0234$) and in the occupation preschool teacher ($p = 0.0600$). The difference in positive callback rates between heterosexual women and lesbians females amounts to about 10 percentage points for both these occupations. However, there are differences between the occupations in the sense that the probability for a positive callback is about twice as large for heterosexual females than for lesbians in the occupation cleaner while it only amounts around 20% in the preschool teacher occupation.

Table 1: Proportion of job applications that led to a positive callback and p-values generated by a *t*-test for different hypothesis (the total number of jobs applied for in each category is given in the parenthesis)

	Positive response				p-values	
	Heterosexual male (1)	Gay male (2)	Heterosexual female (3)	Lesbian female (4)	Prob((1)=(2))	Prob((3)=(4))
All occupations (3,996)	29.79 (997)	26.10 (981)	31.88 (1,010)	26.19 (1,008)	0.0673	0.0049
<i>Type of occupation</i>						
Shop sales assistant (500)	15.27 (131)	7.50 (120)	10.60 (132)	5.13 (117)	0.0548	0.1133
Construction worker (362)	30.00 (90)	22.22 (90)	30.95 (84)	24.48 (98)	0.2372	0.3329
Preschool teacher (667)	53.66 (164)	55.49 (173)	58.54 (164)	48.19 (166)	0.7365	0.0600
High school teacher (289)	47.89 (71)	43.06 (72)	51.39 (72)	40.54 (74)	0.5650	0.1910
Motor-vehicle driver (209)	15.09 (53)	15.09 (53)	20.83 (48)	10.91 (55)	1.0000	0.1686
Cleaner (480)	11.29 (124)	11.11 (108)	17.78 (135)	7.96 (113)	0.9658	0.0234
Restaurant worker (542)	25.37 (134)	17.78 (135)	35.77 (137)	27.94 (136)	0.1309	0.1665
Sales person (494)	34.68 (124)	25.00 (116)	29.84 (124)	30.00 (130)	0.1029	0.9777
Nurse (186)	36.58 (41)	41.18 (51)	42.55 (47)	46.81 (47)	0.6581	0.6821
Mechanic worker (267)	21.54 (65)	9.52 (63)	13.43 (67)	13.89 (72)	0.0620	0.9382
<i>Job characteristics</i>						
Job in metropolitan area (1,301)	28.97 (321)	23.96 (313)	32.62 (328)	23.89 (339)	0.1534	0.0122
Job in non-metropolitan area (2,695)	30.18 (676)	27.09 (668)	31.52 (682)	27.35 (669)	0.2118	0.0928
Public sector employer (539)	41.30 (138)	47.62 (147)	44.00 (125)	43.41 (129)	0.2854	0.9250
Private sector employer (3,457)	27.94 (859)	22.30 (834)	30.17 (885)	23.66 (879)	0.0075	0.0021
Full-time position (2,949)	31.76 (740)	27.54 (719)	32.52 (741)	28.04 (749)	0.0625	0.0568
Part-time position (1,047)	24.12 (257)	22.14 (262)	30.11 (269)	20.85 (259)	0.5922	0.0147
Permanent position (2,821)	28.41 (697)	24.39 (705)	28.63 (681)	22.76 (738)	0.1067	0.0100
Position with conditional tenure (1,175)	33.00 (300)	30.43 (276)	38.60 (329)	35.56 (270)	0.5097	0.4437

Note: The null hypothesis is that there is no statistically significant difference in the response rate between the applicants.

Turning to other job characteristics, we find that employers in the private sector discriminated against the gay applicant ($p = 0.0075$) as well as against the lesbian applicant ($p = 0.0021$), whereas no discrimination is found for jobs in the public sector. In fact the gay applicant received more positive callbacks than the heterosexual applicant when applying for jobs in the public sector. Furthermore, the lesbian applicant was discriminated against when the job was located in a metropolitan area ($p = 0.0122$). This result is strikingly different from what has been observed in studies regarding sexual orientation and earnings. Various studies have documented that lesbians are doing relatively well with regard to earnings in metropolitan areas (Ahmed and Hammarstedt, 2010; Arabsheibani et al., 2004; Clain and Leppel, 2001). However, the result is in line with Weischselbaumer (2003), who conducted a field experiment and documented discrimination against lesbians in a metropolitan area (the greater Vienna area in Austria).²⁰

²⁰ The focus of this study is not to study gender discrimination. For the interested reader we could mention that we did not find any statistical significant differences in callback rates between males and females.

3.2 Linear probability estimates of the probability of receiving a positive response

Next, we estimate a linear probability model of the probability of receiving a positive response to a job application (invited to send complementary information, invited to an interview, or offered a job).²¹ Six specifications are estimated for males and females, respectively. *Specification 1* controls for an individual's sexual orientation.

Specification 2 controls for sexual orientation as well as for all types of occupations and job characteristics. Apart from job characteristics, *Specification 3* controls for whether the employer is in the public or in the private sector. Due to the fact that the great majority of the jobs applied for in most occupations are in the private sector it is not possible to control for occupation and sector within the same specification. Therefore, in *Specification 3* the occupation variables are excluded. *Specification 3* also includes an interaction term between public sector employer and sexual orientation. *Specifications 4–6* add interactions of public sector and sexual orientation with metropolitan area, full-time position and permanent position, respectively. We estimate *Specification 4–6* in order to further elucidate the differences between the private and public sector observed in Table 1.²²

²¹ We also estimated probit regression models, which led to similar results as those presented here.

²² See Appendix B for a description of the variables included in the estimations.

Table 2: Linear probability estimates for men of the probability of receiving a positive callback (robust standard errors within parentheses)

	Specification 1	Specification 2	Specification 3	Specification 4	Specification 5	Specification 6
Homosexual	-0.0377* (0.0202)	-0.0452** (0.0190)	-0.0553*** (0.0210)	-0.0553*** (0.0210)	-0.0554*** (0.0210)	-0.0554*** (0.0210)
Shop sales assistant	–	Reference	–	–	–	–
Construction worker	–	0.1297** (0.0397)	–	–	–	–
Preschool teacher	–	0.4286*** (0.0350)	–	–	–	–
High-school teacher	–	0.3570*** (0.0476)	–	–	–	–
Motor-vehicle driver	–	0.0300 (0.0417)	–	–	–	–
Cleaner	–	0.0013 (0.0291)	–	–	–	–
Restaurant worker	–	0.0980*** (0.0323)	–	–	–	–
Sales person	–	0.1696*** (0.0368)	–	–	–	–
Nurse	–	0.2760*** (0.0554)	–	–	–	–
Mechanic worker	–	0.0273 (0.0392)	–	–	–	–
<i>Job characteristics</i>						
Metropolitan area	–	0.0142 (0.0208)	0.0127 (0.0216)	0.0066 (0.0219)	0.0067 (0.0219)	0.0066 (0.0219)
Permanent position	–	0.0116 (0.0228)	-0.0405* (0.0231)	-0.0407* (0.0231)	-0.0407* (0.0231)	-0.0398* (0.0240)
Full-time position	–	0.0411* (0.0233)	0.0742*** (0.0221)	0.0753*** (0.0221)	0.0728*** (0.0226)	0.0726*** (0.0226)
Public sector	–	–	0.1281*** (0.0457)	0.1259*** (0.0457)	0.1258*** (0.0457)	0.1261*** (0.0458)
<i>Interactions</i>						
Public sector x Homosexual	–	–	0.1183* (0.0626)	0.1000 (0.0639)	0.0745 (0.0954)	0.0782 (0.1000)
Public sector x Big city x Homosexual	–	–	–	0.2268* (0.1357)	0.2319* (0.1337)	0.2327* (0.1324)
Public sector x Big city x Full-time position	–	–	–	–	0.0343 (0.0955)	0.0363 (0.0977)
Public sector x Permanent position x Homosexual	–	–	–	–	–	-0.0098 (0.0868)
Constant	0.2754*** (0.0237)	0.0907*** (0.0338)	0.2314*** (0.0310)	0.2316*** (0.0310)	0.2337*** (0.0312)	0.2332*** (0.0314)
R^2	0.0036	0.1247	0.0343	0.0357	0.0358	0.0358
Number of observations	1,978	1,978	1,978	1,978	1,978	1,978

Note: All models include controls for seasonality in the hiring process (dummy variable for the month of application). * indicates statistical significance at 10 percent, ** at 5 percent, and *** at 1 percent.

The results for males are presented in Table 2. Our different models reveal that gay applicants have between 3 and 6 percentage points lower probability of receiving a positive response to a job application than do heterosexual male applicants. Specification 3 reveals that the probability of receiving a positive callback is higher in

the public than in the private sector and that this effect is larger for gay males than for heterosexual males. This is in line the finding that gay men are doing relatively better in the public sector than in the private sector in Table 1.

In Specifications 4–6 we examine whether this effect may be due to differences in job characteristics between the public and private sectors. It emerges that the response rate of gay men is higher for public sector job located in metropolitan areas; gay men have a 23 percentage point higher probability of receiving a positive response to public sector jobs in metropolitan areas than do heterosexual men. Thus, even though gay men, on average, have a lower response rate than heterosexual men, they are at an advantage when it comes to public sector jobs and especially jobs that are located in metropolitan areas.

Turning to females in Table 3, we find that lesbian applicants have about a 6 percentage point lower probability of receiving a positive response to a job application than do heterosexual female applicants. As for males the probability of receiving a callback is higher in the public than in the private sector although there is no statistically significant difference by sexual orientation in this respect. However, specifications 4–6 reveal, in contrast to the results for males, that lesbian women have about a 20 percentage point lower probability of receiving a positive response to public sector jobs located in metropolitan areas than do heterosexual women. At the same time, lesbian women are more likely to get a positive response to public sector jobs that are full-time positions. Thus, on average, lesbian women have a lower probability of receiving a positive response to job applications and they are at an even larger disadvantage if the job is a public sector job located in metropolitan areas. However, lesbian women are positively discriminated against when the public sector job is a full-time position.

Table 3: Linear probability estimates for women of the probability of receiving a positive callback (robust standard errors within parentheses)

	Specification 1	Specification 2	Specification 3	Specification 4	Specification 5	Specification 6
Homosexual	-0.0575 ^{***} (0.0202)	-0.0603 ^{***} (0.0191)	-0.0546 ^{***} (0.0203)	-0.0615 ^{***} (0.0210)	-0.0602 ^{***} (0.0210)	-0.0599 ^{***} (0.0210)
<i>Occupations</i>						
Shop sales assistant	–	Reference	–	–	–	–
Construction worker	–	0.1851 ^{***} (0.0395)	–	–	–	–
Preschool teacher	–	0.4400 ^{***} (0.0338)	–	–	–	–
High-school teacher	–	0.3531 ^{***} (0.0467)	–	–	–	–
Motor-vehicle driver	–	0.0679 (0.0419)	–	–	–	–
Cleaner	–	0.0521* (0.0276)	–	–	–	–
Restaurant worker	–	0.2330 ^{***} (0.0333)	–	–	–	–
Sales person	–	0.2167 ^{***} (0.0354)	–	–	–	–
Nurse	–	0.3576 ^{***} (0.0542)	–	–	–	–
Mechanic worker	–	0.0508 (0.0368)	–	–	–	–
<i>Job characteristics</i>						
Metropolitan area	–	0.0142 (0.0207)	0.0178 (0.0216)	0.0194 (0.0216)	0.0214 (0.0216)	0.0216 (0.0217)
Permanent position	–	-0.0523 ^{**} (0.0233)	-0.1035 ^{***} (0.0238)	-0.1032 ^{***} (0.0238)	-0.1050 ^{***} (0.0237)	-0.1091 ^{***} (0.0247)
Full-time position	–	0.0342 (0.0239)	0.0708 ^{***} (0.0223)	0.0710 ^{***} (0.0223)	0.0520 ^{**} (0.0230)	0.0527 ^{**} (0.0230)
Public sector	–	–	0.1404 ^{**} (0.0389)	0.1117 ^{**} (0.0471)	0.1151 ^{**} (0.0470)	0.1141 ^{**} (0.0470)
<i>Interactions</i>						
Public sector x Homosexual	–	–	0.0110 (0.0344)	0.0717 (0.0654)	-0.1114 (0.0841)	-0.1263 (0.0904)
Public sector x Big city x Homosexual	–	–	–	-0.1002 (0.0658)	-0.1728 ^{**} (0.0702)	-0.1965 ^{**} (0.0792)
Public sector x Big city x Full-time position	–	–	–	–	0.2617 ^{***} (0.0845)	0.2461 ^{***} (0.0862)
Public sector x Big city x Permanent position	–	–	–	–	–	0.0546 (0.0890)
Constant	0.3031 ^{***} (0.0243)	0.1159 ^{***} (0.0334)	0.3071 ^{***} (0.0342)	0.3099 ^{***} (0.0343)	0.3246 ^{***} (0.0344)	0.3270 ^{***} (0.0346)
R^2	0.0056	0.1252	0.0331	0.0340	0.0384	0.0386
Number of observations	2,018	2,018	2,018	2,018	2,018	2,018

Note: All models include controls for seasonality in the hiring process (dummy variable for the month of application). * indicates statistical significance at 10 percent, ** at 5 percent, and *** at 1 percent.

Table 1 showed that gay males have a lower response rate than heterosexual males in the male-dominated occupation mechanic worker whereas lesbian women have a lower response rate in the female-dominated occupations cleaner and preschool teacher. This suggests that gay men may be discriminated against in male-dominated professions whereas lesbian women may be at a disadvantage in female-dominated professions. In

order to further investigate this observation, we estimate the probability of receiving a positive call-back separately for male- and female-dominated occupations and by gender. The male-dominated professions are construction worker, motor vehicle driver, sales person, and mechanic worker and the female-dominated professions are shop sales assistant, preschool teacher, cleaner, restaurant worker, and nurse. High school teacher is a gender neutral occupation and is therefore excluded from the analysis. We estimate two specifications: Specification 1 controls for sexual orientation and Specification 2 adds controls for occupations and job characteristics. The control for sector is not included in these estimations, since it is highly correlated with male- and female dominated occupations, respectively. The results are presented in Tables 4 and 5.

Specifications 1 and 2 in Table 4 show that gay males have an about 8 percentage point lower probability of receiving a positive response than heterosexual males in male-dominated occupations. For females, Table 4 reveals no differential treatment of lesbian women and heterosexual women in male-dominated occupations.

As regards female-dominated occupations, Table 5 reveals no difference in the probability of receiving a positive response between homosexual and heterosexual males. However, as indicated in the univariate analysis in Table 1, lesbian women have about a 7 percentage point lower probability of receiving a positive response than heterosexual women in female-dominated occupations.

Table 4: Linear probability estimates of the probability of receiving a positive callback in male-dominated occupations, respectively (robust standard errors within parentheses)

	<i>Males</i>		<i>Females</i>	
	<i>Specification 1</i>	<i>Specification 2</i>	<i>Specification 1</i>	<i>Specification 2</i>
Homosexual	-0.0810** (0.0334)	-0.0787** (0.0333)	-0.0314 (0.0327)	-0.0270 (0.0327)
<i>Occupations</i>				
Construction worker	–	Reference	–	Reference
Motor-vehicle driver	–	-0.0919* (0.0514)	–	-0.1455*** (0.0484)
Sales person	–	0.0427 (0.0447)	–	0.0280 (0.0450)
Mechanic worker	–	-0.1054** (0.0470)	–	-0.1454*** (0.0453)
<i>Job characteristics</i>				
Metropolitan area	–	0.0066 (0.0362)	–	-0.0287 (0.0356)
Permanent position	–	0.0393 (0.0430)	–	-0.0371 (0.0464)
Full-time position	–	0.0391 (0.0659)	–	-0.0713 (0.0934)
Constant	0.2629*** (0.0393)	0.2076** (0.0830)	0.2131*** (0.0372)	0.3498*** (0.1079)
R^2	0.0148	0.0401	0.0120	0.0459
Number of observations	654	654	678	678

Note: All models include controls for seasonality in the hiring process (dummy variable for the month of application). * indicates statistical significance at 10 percent, ** at 5 percent, and *** at 1 percent.

Table 5: Linear probability estimates of the probability of receiving a positive callback in female-dominated occupations (robust standard errors within parentheses)

	<i>Males</i>		<i>Females</i>	
	<i>Specification 1</i>	<i>Specification 2</i>	<i>Specification 1</i>	<i>Specification 2</i>
Homosexual	-0.0126 (0.0262)	-0.0248 (0.0240)	-0.0645** (0.0265)	-0.0723*** (0.0243)
<i>Occupations</i>				
Shop sales assistant	-	Reference	-	Reference
Preschool teacher	-	0.4271*** (0.0354)	-	0.4415*** (0.0343)
Cleaner	-	-0.0004 (0.0292)	-	0.0551** (0.0278)
Restaurant worker	-	0.0970*** (0.0326)	-	0.2268*** (0.0334)
Nurse	-	0.2740*** (0.0550)	-	0.3553*** (0.0544)
<i>Job characteristics</i>				
Metropolitan area	-	0.0051 (0.0260)	-	0.0396 (0.0261)
Permanent position	-	-0.0047 (0.0279)	-	-0.0600** (0.0279)
Full-time position	-	0.0239 (0.0256)	-	0.0539** (0.0255)
Constant	0.2773*** (0.0308)	0.1263*** (0.0393)	0.3317*** (0.0327)	0.1278*** (0.0397)
R^2	0.0036	0.1670	0.0087	0.1730
Number of observations	1,181	1,181	1,194	1,194

Note: All models include controls for seasonality in the hiring process (dummy variable for the month of application). * indicates statistical significance at 10 percent, ** at 5 percent, and *** at 1 percent.

4. Discussion

This paper has been devoted to a study of sexual orientation discrimination in the hiring process in the Swedish labor market. Our results document discrimination against gays as well as against lesbians in the hiring process. Our results indicate that private employers discriminate against homosexuals while public employers do not. One should, however, bear in mind that most of the jobs we applied where in the private sector.

Compared to results from other European countries the observed discrimination is small in magnitude. A heterosexual female applicant received 31% and 123% more responses from employers than a lesbian applicant in Weichselbaumer (2003) and Drydakis (2011), respectively, while the corresponding figure in our study was 22%. Similarly, a heterosexual male applicant received 186% more responses from employers than a gay applicant in Drydakis (2009), while the corresponding figure in our study was 14%.

Against the background that Sweden is a country that is relatively tolerant against homosexuals in comparison to other European countries, this is not surprising. For example, the attitudes regarding gays and lesbians in both Austria and Greece are more negative as compared to in Sweden (Gerhards, 2010). Another interesting fact is that our results also highlight a new dimension of traditional gender roles. Gays were discriminated against in typical male-dominated occupations while lesbians were discriminated against in typical female-dominated occupations. Thus, the results indicate that gays to some extent face the same obstacles on the labor market as heterosexual women – a result that has also been found in previous studies.²³

Our results also help us to explain results from previous research regarding the labor market position of gays and lesbians in Sweden. Such research has not been able to establish the explanation for why gay men are observed to earn less than heterosexual men in Sweden. Since our experimental results reveal that labor market discrimination in some occupations but not in others, we may assume that the observed earnings differential between gay men and heterosexual men, to a considerable extent, is driven by other factors than discrimination, such as differences in allocation between market work and household work within homosexual and heterosexual households. A question for future research is therefore the extent to which there are differences in the allocation of time within households between homosexuals and heterosexuals.

Our study also underlines the importance of including several occupations rather than one or just a few in field experiments. If a single occupation, or a few, is chosen for a study, the researcher might just pick an occupation where discrimination is large. We have seen in the present study that discrimination against gays and lesbians depends on which occupation we focus. Hence, to get an overall fair picture of sexual orientation discrimination, it is important for future field experiments to include a variety of occupations and larger geographical areas.

Finally, it is important to mention that we, as well as the previous field experiments, have only investigated for discrimination against gays and lesbians in the first stage of the job search and hiring process, that is, if applicants receive an invitation for an interview from employers. Discrimination can also occur at three more stages (at least) in the labor market: the interview stage, the wage bargaining stage, and the on-the-job stage. We do not test for discrimination at these stages. Future research on sexual orientation and discrimination should therefore aim at getting insights into the explanations for the discrimination and the extent to which discrimination occurs at different stages in the hiring process and on the workplace.

²³ See Frank (2006) and Ahmed et al. (2011a).

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Appendices

Appendix A Original application letter in Swedish

An example of application letter and résumé used to apply as a gay applicant to a job as a restaurant worker. Alternatives for lesbian and heterosexual male and female applicants are given in brackets. English translation follows after the originals in Swedish. Letters used to other occupations are available upon request.

Erik [Maria] Johansson

Adress: Frejgatan 13, 114 79 Stockholm

Telefonnummer: 0720-16 42 49 [0720-16 96 59, 0720-17 49 50, 0720-17 50 67]

E-post: eg.jhssn@gmail.com [es.jhssn@gmail.com, mg.jhssn@gmail.com,
ms.jhssn@gmail.com]

Anställning som servitör

Jag läste i annonsen att ni söker efter en servitör. Jag är mycket intresserad av anställningen. Med mina knappt femton års arbetslivserfarenhet från restaurangbranschen tror jag att jag kommer att kunna göra mycket nytta på er restaurang.

Jag är 32 år och har knappt 15 års arbetslivserfarenhet i branschen. Jag har lätt för att samarbeta, trivs med mitt yrke och hoppas kunna fortsätta inom det.

Jag är gift men har inga barn. På min fritid tycker jag om att umgås med min man [fru]. Jag tycker dessutom om att vara ute i naturen. Jag joggar, promenerar och fotograferar. Jag är också aktiv i olika organisationer och föreningar. Mitt naturintresse har gjort att jag är engagerad i Friluftsförbundet men jag är också engagerad i RFSL och har tidigare haft olika uppdrag i samband med arrangemanget av Stockholm Pride Festival. [Mitt naturintresse har gjort att jag är engagerad i Friluftsförbundet men jag är också engagerad i Röda Korset och har haft olika uppdrag i samband med olika typer av frivilligarbete.]

Sänder med en översikt över mina arbeten och utbildningar. Jag har betyg från samtliga.

Mina språkkunskaper är svenska och engelska i tal och skrift.

Med förhoppning om att få träffa er i person översänder jag denna ansökan.

Vänliga hälsningar,

Erik [Maria] Johansson

Original résumé in Swedish

Meritförteckning

Personlig information:

Erik [Maria] Johansson

Personnummer: 1978-05-18

Adress: Frejgatan 13, 114 79 Stockholm

Telefonnummer: 0720-16 42 49

E-post: eg.jhnsn@gmail.com [es.jhnsn@gmail.com, mg.jhnsn@gmail.com,
ms.jhnsn@gmail.com]

Arbetslivserfarenhet:

2005-2010 Anställd som servitör vid Quality Hotel Globe, Stockholm

1996-2005 Anställd som servitör vid Scandic Hotel, Bromma

Utbildning:

1993-1996 Hotell- och restaurangprogrammet, Stockholms hotell- och restaurangskola

Språk:

Svenska (modersmål), Engelska

Application letter translated to English

Erik [Maria] Johansson

Address: Frejgatan 13, 114 79 Stockholm

Phone number: 0720-16 42 49 [0720-16 96 59, 0720-17 49 50, 0720-17 50 67]

E-mail: eg.jhnsn@gmail.com [es.jhnsn@gmail.com, mg.jhnsn@gmail.com, ms.jhnsn@gmail.com]

Employment as a waiter

I read in the ad that you are looking for a waiter. I am very interested in the position. With my nearly fifteen years of work experience in the restaurant, I think I will be able to do much good in your restaurant.

I am 32 years old and have almost 15 years work experience in the industry. I find it easy to collaborate with others, I am satisfied with my profession and hope to continue working in this occupation.

I am married but have no children. In my free time I like to hang out with my husband [wife]. I also like being out in the nature. I do jogging, walking and photographing. I am also active in various organizations and associations. My interest in nature has led me to be involved in the Friluftsförbundet, but I'm also involved in RFSL and have held various assignments in connection with the arrangement of the Stockholm Pride Festival. [My interest in nature has led me to be involved in the Friluftsförbundet, but I am also involved in the Red Cross and have held various assignments in connection with various types of voluntary work.]

Sending an overview of my work and training. I have grades from all.

My language skills are in Swedish and English in speech and writing.

With the hope of meeting you in person, I send this application.

Sincerely,

Erik [Maria] Johansson

Résumé translated to English

Résumé

Personal information:

Erik [Maria] Johansson

Date of birth: 1978-05-18

Address: Frejgatan 13, 114 79 Stockholm

Phone number: 0720-16 42 49

E-mail: eg.jhnsn@gmail.com [es.jhnsn@gmail.com, mg.jhnsn@gmail.com,
ms.jhnsn@gmail.com]

Work experience:

2005-2010 Employed as a waiter at Quality Hotel Globe, Stockholm

1996-2005 Employed as a waiter at Scandic Hotel, Bromma

Education:

1993-1996 Hotel- and Restaurant Education, Stockholm School of Hotell and Restaurant

Languages:

Swedish (mother tongue), English

Appendix B

Table B1: List of variables

<i>Dependent variable</i>	
Y_i	1 if the applicant was invited to send complimentary information, invited to an interview, or offered a job, 0 otherwise.
<i>Independent variable</i>	
Homosexual	1 if the applicant was homosexual, 0 otherwise
<i>Type of occupation</i>	
Shop sales assistant	Reference
Construction worker	1 if the applied job was construction worker, 0 otherwise
Preschool teacher	1 if the applied job was preschool teacher, 0 otherwise
High-school teacher	1 if the applied job was high-school teacher, 0 otherwise
Motor-vehicle driver	1 if the applied job was motor-vehicle driver, 0 otherwise
Cleaner	1 if the applied job was cleaner, 0 otherwise
Restaurant worker	1 if the applied job was restaurant worker, 0 otherwise
Sales person	1 if the applied job was sales person, 0 otherwise
Nurse	1 if the applied job was nurse, 0 otherwise
Mechanic worker	1 if the applied job was mechanic worker, 0 otherwise
<i>Job characteristics</i>	
Metropolitan area	1 if the job was located in Stockholm, Gothenburg or Malmö, 0 otherwise
Permanent position	1 if the job was a permanent position, 0 otherwise
Full-time position	1 if the job was a full-time position, 0 otherwise
Public sector	1 if the job was a public sector job, 0 otherwise
