Do Schools Discriminate against Homosexual Parents? Evidence from a Randomized Correspondence Experiment

Luis Diaz-Serrano♣
ECO-SOS – Universitat Rovira i Virgili

Enric Meix-Llop♦
Universitat Rovira i Virgili

Abstract

The recognition of homosexual rights is a controversial issue in many countries. Spain was the third country in the world (after the Netherlands and Belgium) to introduce a law recognizing homosexual marriage and the adoption of children by homosexual couples. In this paper, we examine for the first time whether schools are more hesitant about giving feedback to homosexual parents during children's pre-registration period in Catalonia (Spain). To do so, we designed a correspondence experiment to be conducted in schools. We created three types of fictitious couples—one heterosexual, one gay, and one lesbian—and sent emails to schools in which the couples' sexual orientation was explicit. Our results show that gay couples had a significantly lower (22 percentage points) call-back probability than heterosexual couples. No statistically significant differences in call-back probability were found between the lesbian and heterosexual couples.

Keywords: discrimination, correspondence field experiment, schools, homosexual rights, homosexual parents

JEL codes: H41, I20, K36

_____

1. Introduction

The recognition of homosexual rights is a controversial issue in many countries. In 2001, the Netherlands was the first country in the world to recognize same-sex couples' marriage.[1] Since then, this right has also been recognized in other countries.[2] More recently, a number of countries have granted homosexual couples the right to adopt children.[3] In the United States (US), same-sex marriage has been legal nationwide since June 26, 2015, when the US Supreme Court ruled that state-level bans on same-sex marriage were unconstitutional. Both measures aim to recognize and normalize homosexual family structures. Although there is an abundance of literature that analyzes discrimination against homosexuals in the labor market, studies analyzing discrimination against homosexual couples and their children in the school environment are virtually non-existent. Given this recent implementation of policies in favor of homosexual rights and the normalization of homosexual families in many developed countries, we find this issue to be of special interest.

Previous literature has documented the existence of discrimination in the labor market as well as the housing market. Based on these findings, we find it of special interest to investigate whether homosexuals are also discriminated against in the school environment. If this is the case, the existence of discrimination might affect not only same-sex parents, but also have far-reaching implications for their children regarding school and labor market outcomes. We believe that the topic of discrimination against homosexual parents and their children in the school environment is also very relevant from a policy perspective. Governments that allow homosexual couples to adopt children should ensure that discrimination in school is no barrier with respect to the right to adopt.[4]

In this paper we test for the first time whether private schools are more hesitant about interacting with homosexual than with heterosexual parents. To carry out our test, we use an experimental correspondence design. This technique has the interesting feature of allowing us

---

[1] Denmark recognized same-sex couples marriage after the Netherlands, but was the first country in the world to legally recognize same-sex unions in 1989.

[2] South Africa, Portugal, Spain, Iceland, Argentina, Denmark, Uruguay, New Zealand, France, Brazil and the United Kingdom (UK) allow homosexual marriage, whilst in Mexico it is only allowed in some states, and in the US was also only permitted in some states until recently (source: www.freedomtomarry.org).

[3] Andorra, Argentina, Spain, Belgium, Brazil, Canada, Denmark, Norway, South Africa, Sweden, the United Kingdom (UK), Uruguay, Finland, Germany, Israel, and Slovenia allow homosexuals to adopt children, whereas in Australia, Mexico, and the United States it is only allowed in some states (source: www.adoption.laws.com/gay-adoption).

[4] On January 29, 2014, the main national Spanish newspaper *El País* published the following news story: "The principal of a school was accused in court of turning down the application by a gay couple for their son." This happened in a private school in Seville. The principal of the school turned down the application, alleging that there were no vacancies. However, the parents of the child knew this to be untrue and therefore took the case to the Court of Justice.

to create situations in which people, in our case principals or administrative staff in schools, interact with fictitious homosexual individuals who clearly reveal their sexual orientation. The experiment was conducted in the region of Catalonia (Spain) during the pre-registration period in schools.[5] Pre-registration is compulsory and has to take place before schools, either public or private, decide on children's admittance. In this study we focus on private schools. This study is, to the best of our knowledge, the first to study discrimination against homosexual parents in the school environment.

Our correspondence experiment involved the creation of three different fictitious profiles (heterosexual, gay, and lesbian couples) and sending emails to schools during the pre-registration period. We decided to consider both gay and lesbian couples to control for the gender of the homosexual parents.[6]

In the emails, our fictitious couples showed interest in the school and made a request for an interview and a visit. Their sexual orientation was made explicit. After processing all the call-backs from the schools, we created a database that allowed us to carry out a statistical analysis. Our results indicate that the call-back probability for homosexual parents was about 22 percentage points lower than for heterosexual couples. Lesbian couples also had a lower call-back probability than their heterosexual counterparts (3.4 percentage points lower). However, the latter was not statistically significant. These findings are consistent with previous evidence based on correspondence experiments that have tested for discrimination against homosexuals.

The paper is structured as follows. In section two, we describe the institutional setting. In section three, we provide an overview of the existing literature regarding homosexual discrimination. The experimental design is described in section four and section five reports the empirical results. The final section summarizes and concludes.

2. Institutional setting

2.1. *Attitudes towards homosexuality in Spain*

Despite advances in the recognition of homosexual rights in developed countries, historical, sociological, and psychological research demonstrates the existence of homophobia and sexual

---

[5] We choose Catalonia because is the only region for which corporate email addresses and data on school characteristics are available. When we carried out the experiment, this region was one of two regions for which the pre-registration period was still open. We also contacted the educational authorities in other regions and asked for a list of schools with corporate emails, but we did not receive any feedback. As we shall see below, Catalan schools do not differ much from Spanish schools.

[6] This distinction is not trivial. There are a number of studies in the US that document different attitudes towards gays and lesbians (Herek, 2000; Herek 2002; Kite & Whitley 1996).

prejudice around the world. These attitudes are more intense in countries where there is no clear separation between religious and political institutions. Indeed, there are some countries where homosexuality is still persecuted and punished, in some cases with the death penalty.[7]

Spain was the third country in the world (after the Netherlands and Belgium) to introduce a law recognizing marriage between same-sex couples. It was promoted by PSOE (the left-wing party in office) and became effective on July 3, 2005.[8] It faced opposition from the Catholic Church and the PP (the main right-wing party), which claimed that this law was against the Spanish Constitution and took the case to the Spanish Constitutional Court. However, in 2012 their appeal was rejected. Under the same law, homosexual couples were also granted the same rights to adopt children as heterosexual couples.[9] Since then, with the support of the main right-wing party (PP), the Catholic Church and Catholic pro-family conservative associations have organized several demonstrations against the right of homosexual couples to marry and adopt children.

In this context, one question that arises is: Is the polarization reflected in Parliament also reflected in society and institutions? The European Values Study places Spain in a middle position regarding homosexual acceptance compared to other EU15 countries.[10] Around 20% of the Spaniards interviewed for the study declared that they did not like the idea of having homosexuals as neighbors (Figure 1).[11] Portugal, Austria, Italy, Ireland, Greece, and Germany have exhibited higher levels of intolerance, with the Nordic countries, the Netherlands, France, and Belgium emerging as the most tolerant.

However, when we analyze the question of whether individuals agree with the adoption of children by homosexual couples, the results differ across the board. Some countries that reported greater tolerance for having homosexuals as neighbors exhibited a similar or even more negative position than Spaniards toward the idea of homosexuals adopting children (Sweden, France, Finland, Denmark, and Belgium). This leaves Spain as one of the most tolerant EU countries regarding this issue (Figure 2).

The figures presented in this section clearly reflect some polarization regarding attitudes towards homosexuals in the totality of countries.[12] In the case of Spain, the proportion of

---

[7] Countries where homosexuality is punished with the death penalty are: Libya, Sudan, Mauritania, Nigeria, Somaliland, Saudi Arabia, Yemen, Afghanistan, Iran, and the Maldives (source: www.forbes.com)

[8] The House of Representatives approved the law in the first round by 183 votes to 136. In the Senate, the law was rejected by 131 votes to 119. In Congress, the veto was lifted and the law finally passed by 187 votes to 147.

[9] Law 13/2005, article 44.

[10] This study shows that the ex-communist European countries are by far the most homophobic.

[11] In the question, the gender of the hypothetical homosexual neighbor is not specified.

[12] This difference between European countries is also observed in Gerhards (2010).

Figure 1: Don't like homosexuals as neighbors
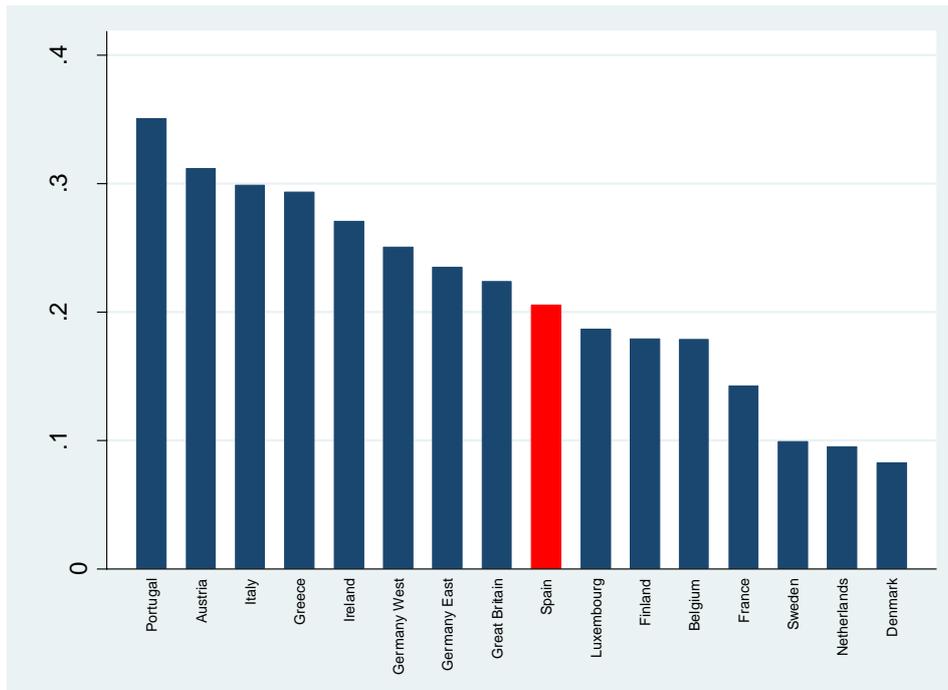
Note: 1. Yes; 0. No
Source: Own elaboration from European Value Study

Figure 2: Homosexual couples should be allowed adopting children
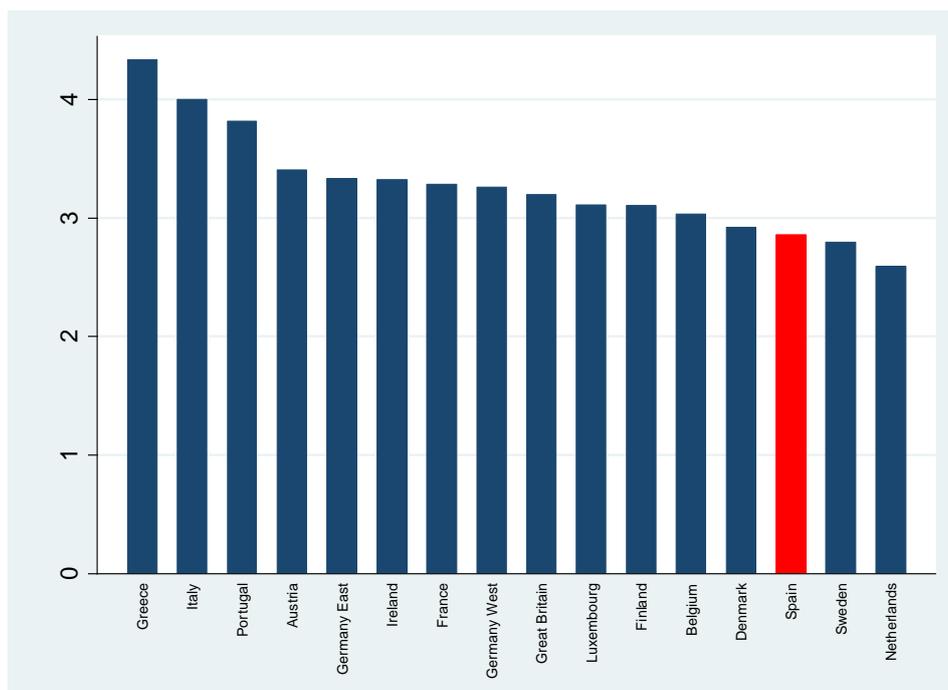
Note: 1 strongly agree; 5 strongly disagree.
Source: Own elaboration from European Value Study

individuals responding that they would not like homosexuals as neighbors is slightly above 20%, whereas the average score for agreement or disagreement with homosexual couples being allowed to adopt children is below 3 (on a scale of 1 to 5, with 5 being "I strongly agree"). These figures suggest that some kind of disparity in the treatment of homosexual and heterosexual couples by some school workers/principals in our sample can be expected. In relation to this, we believe the outcome of our experiment will simply reflect the attitude toward homosexuals in Spanish society, and not be the result of specific discriminatory policies of schools against homosexual parents.[13] If society perceives male and female homosexuality differently,[14] we might also expect a different call-back rate for gay and lesbian couples, as well as with respect to their heterosexual counterparts.

As already mentioned in the introduction, our experiment concerns the region of Catalonia. The fact that we limit our experiment to one region raises the issue of whether attitudes toward homosexuality may perhaps differ between Catalonia and the rest of Spain. Unfortunately, the European Values Study does not allow the classification of individuals by region; however, this is possible in the European Social Survey. This survey includes a question that asks individuals the following: "Do you think that gays and lesbians should be free to live as they wish?" Individuals choose a value on an ordinal scale ranging from 1 to 5, where 1 indicates "I strongly agree" and 5 indicates "I strongly disagree." For Spain, the mean is 1.95 and the standard deviation is 1.01. For Catalonia, these figures are 1.97 and 0.96 respectively, which suggests that there are no differences in attitudes toward homosexuals between the region where we conducted our experiment (Catalonia) and the rest of Spain.

2.2. Catalan schools

The experiment was carried out during the pre-registration period in Catalonia. Pre-registration is a prerequisite if parents want to send children to a school of their choice. Parents are required to submit a ranking of schools sorted by preference. The possibility of sending their children to the first school in the ranking depends on two main priority criteria: residing in the area of influence of the school (proximity) or having siblings in that school. During this pre-registration

---

[13] According to Becker (1993), a taste for discrimination among profit-maximizing employers, employees or customers is a prerequisite for discrimination in the labor market, as there is no reason to think that homosexuals are less productive than heterosexuals. We believe that this taste for discrimination is what may drive discrimination against homosexuals not only in the labor market, but also in the school and other environments. A priori, we cannot think of any other reasons that may lead to schools using some kind of statistical discrimination in the case of homosexual couples. Nonetheless, if school principals do not have any personal prejudice against homosexuals but act like this because they think that a share of the parents in their schools may have such prejudice, it would still constitute prejudiced discrimination.
[14] Herek (2000), Herek (2002), Kite & Whitley (1996).

period, it is common that parents visit schools, especially if they are private. Some schools have an "open day" for all parents who want to visit the school to attend simultaneously. Indeed, in some of the call-backs we were informed of this possibility. Visits to public schools are not so common. This is why we focus on private schools.

In Catalonia, 35% of the schools are private and of these, 94% receive public funding. These figures for Spain (excluding Catalonia) are 33% and 87% respectively. This indicates that the share of private schools overall schools is practically the same in Catalonia and the rest of Spain. However, in Catalonia, the percentage of private schools receiving public funding is slightly higher, by 7 percentage points. Other quality indicators also suggest that students in Catalan schools perform similarly to those in the rest of Spain. For instance, in 2012 the average PISA math score for Catalan schools was 496 and the standard deviation was 81. For the rest of Spain (excluding Catalonia) these numbers were 495 and 86. Similarly, in 2013 the drop-out rate in compulsory schooling in Catalonia was 24%, while in the rest of Spain (excluding Catalonia) it was 22%. All these figures taken together indicate that Catalan schools do not differ significantly from Spanish schools. This evidence, combined with the similarity in attitudes toward homosexuality in Catalonia and the rest of Spain, suggests that the outcome of the experiment would probably be similar if we expanded it to the rest of Spain.

3. Literature review

During the last few decades, discrimination against and laws in favor of homosexuals have been controversial issues. However, despite their relevance, these issues are undoubtedly under-researched. To the best of our knowledge, with few exceptions, practically all the studies analyzing discrimination against homosexuals focus on the labor market. Most of these studies document the existence of discrimination based on sexual orientation. As far as we are aware, no previous study has explored discrimination against homosexual parents in terms of the specific issue of their children being admitted to schools, or any other more general issue regarding the school environment.

The analyses of discrimination generally rely on surveys and registry data and, to a lesser extent, on so-called "correspondence experiments." However, during the last few years, the use of correspondence experiments seems to have taken off. There are two main reasons for the boom in the use of this type of study. First, there is a lack of reliable registry and survey data for identifying sexual orientation. Second, correspondence experiments are easy to implement, economically cost-free, and provide a clean identification of the parameters of interest when properly designed. In this regard, experiments do not suffer from the typical specification errors

(selection bias, endogeneity, omitted variables, etc.) that econometricians usually face when using survey and registry data.

The majority of studies that have relied on survey and registry data in different countries report statistically significant penalties in earning differentials across individuals/households for being gay. In contrast, this penalty is fairly modest or not statistically significant for lesbians. It is worth noting that income differentials based on sexual orientation observed outside the US range between 3% and 15%, which is remarkably smaller than the gaps observed in the US, where the gay penalty in earnings observed in some studies is above 30%.[15]

As mentioned above, studies based on survey and registry data might have limitations in terms of detecting discrimination against homosexuals. First, sexual orientation is not generally observable or declared and therefore might not be known to coworkers or employers. Thus, any potentially discriminatory attitude toward them cannot be observed. Second, although survey and registry data often ask individuals to report if they have had any same-sex sexual relations during their life, this might not provide an accurate identification of homosexuality. Because of the problems mentioned above in identifying individuals' sexual orientation, correspondence experiments seem to be a more reliable method to test for discrimination against homosexuals. Existing correspondence experiments that have aimed to detect discrimination against homosexuals have focused on labor and housing market outcomes. All the studies report one unequivocal finding: gay men are discriminated against in the labor and the rental housing markets, while in the case of lesbians, the evidence of discrimination remains inconclusive.

Regarding hiring probabilities in the labor market, evidence of discrimination against gay men in correspondence experiments has been found by Adam (1981) in Ontario law firms, Drydakis (2009) in Greece, and Tilcsik (2011) in the US. The same evidence is found for lesbians by Weichselbaumer (2003) in Austria and by Dydrakis (2011) in Greece. Ahmed et al. (2013) in Sweden and Drydakis (2014) in Cyprus found combined evidence of discrimination in hiring probabilities for both gay men and lesbians with respect to their heterosexual counterparts, gay men being more likely to experience discrimination than lesbian women. Weichselbaumer (2015) conducted a correspondence experiment in two German cities and obtained mixed evidence. She observed discrimination against lesbians in Munich, but found

---

[15] In the context of survey and registry data, it is worth mentioning the studies of Badgett (1995), Allegretto and Arthur (2001), and Carpenter (2005) for the US, Arabsheibani et al. (2004, 2005) for the UK, Ahmed and Hammarstedt (2010) for Sweden, Laurent and Mihoubi (2012) for France, Plug and Berkhout (2004) for the Netherlands, and Carpenter (2008) for Canada.

no evidence of discrimination in hiring probabilities for lesbians in Berlin. Baert (2014) reports quite interesting evidence. He found that relative to lesbians, young heterosexual women in the Belgium labor market are penalized for having children more frequently.

Following the same procedure, Ahmed et al. (2008a, 2008b) tested the existence of discrimination against homosexuals in the Swedish rental housing market. They found that gay men and lesbian couples had a lower call-back probability from landlords than did heterosexual couples. However, they found no difference in treatment by landlords between lesbian couples and heterosexuals.

Some previous studies in the US using survey data observed that a significant number of surveyed individuals supported adoption rights for lesbian women more than for gay men, and had more negative personal reactions to gay men than to lesbian women (Herek, 2000; Herek 2002; Kite & Whitley 1996). This may explain the evidence found in the studies cited in this section that report more discrimination for gay men than for lesbian women in the labor and housing markets. All this, taken together, raises the question of whether we might expect the same outcome in the school environment.

To the best of our knowledge, there are only four previous studies that relate school outcomes to sexual orientation. Carpenter (2009) used the versions of the 1997, 1999, and 2001 waves of the Harvard College Alcohol Study and found that academic outcomes vary according to the students' sexual orientation. Compared to their heterosexual counterparts, he observed that gay men have higher college grade point averages, perceive their academic work to be more important, and are more prone to participate in student associations than their male heterosexual counterparts. In contrast, lesbian women are less satisfied with the education they are receiving, spend less time studying, perceive their academic work to be less important, and place more importance on participation in the arts and politics.

More closely related to the aims of our study, Rosenfeld (2010), Allen et al. (2013), and Allen (2013) studied the school outcomes of children raised by same-sex couples. Using US census data, Rosenfeld (2010) found that children of same-sex couples are as likely to make normal progress through school as the children of most other family structures. However, Allen et al. (2013) re-examined Rosenfeld's (2010) study and found that compared to traditional married households, children being raised by same-sex couples are 35% less likely to make normal progress through school. Using Canadian census data, Allen (2013) also found that children living in gay and lesbian families in 2006 were about 65% as likely to graduate compared to children living in opposite-sex married families. Moreover, daughters of same-sex parents do considerably worse than sons.

4. Experimental design

The experiment was conducted in March 2013 in Catalonia (Spain) during the primary school pre-registration period. We obtained the corporate electronic mail addresses of all Catalan schools from the Catalan Regional Educational Authority. In our experiment we only considered private schools.[16] We did this because in public schools parents do not normally ask for interaction. If parents live in an area endowed with a public school and a private school with public funding (*concertada*), and identical admission protocols, they will generally prefer their children to be admitted to the private school. We were thus left with a total of 606 schools for the study.

Our experiment consisted of contacting schools by email and requesting an interview or a visit to the school. We used a correspondence experiment because we were interested in studying the un-influenced behavior of the participants, something that is only possible if participants do not know *ex ante* that they are participating in a study. This methodology also allowed us not only to contact all the private schools with remarkably low level in terms of effort and time, but it also made gaining feedback from the schools easier.

We created three fictitious couples: one heterosexual, one gay, and one lesbian. As the experiment was conducted over the Internet, for each type of couple we simply needed to create an email address and names for the fictitious applicants and their respective daughters to which the schools could respond. We chose a daughter instead of randomly assigning a son or a daughter to minimize experimental costs and also because of the non-existence of schools that segregate by gender. We also considered that there was no reason to assume that schools would change their behavior based on the gender of the child. Choosing a name for the corresponding applicants was an important part of this field experiment. To avoid any undesirable bias that might arise from schools potentially interpreting signals from the names of the fictitious subjects, we randomly assigned common Spanish names to each couple and their corresponding daughter.[17] These are typical Spanish names, which are also gender unique. The next step was to create and assign an email address to each fictitious couple. We decided to use the same email provider (Gmail) and the three email addresses had the following structure: name.surname.number@gmail.com.

---

[16] Among these private schools, we can divide the sample into schools receiving public funding (*concertadas*) and schools without public funding.
[17] Names were randomly selected from the 10 most common Spanish names, obtained from the Spanish Bureau of Statistics (INE).

To test discrimination based on both male and female sexual orientation, each school received two emails: one from a heterosexual couple and the other from a gay or lesbian couple. To avoid any bias, the emails from gay or lesbian couples accompanying the emails from the heterosexual couples were assigned randomly to half of the schools. Although proceeding in this way meant that we lost half of the sample for each type of homosexual couple, we gained experimental credibility and stringency. We took the view that schools might find it suspicious to receive emails from all three types of couple (gay, lesbian, and heterosexual). The order in which each email was sent (heterosexual–homosexual or homosexual–heterosexual) was also randomized. The emails were sent to each school over a three-day period.

We designed templates for the three emails to be sent. We generated three different emails in which the sexual orientation of the couple was made explicit. Thus, all emails had the following structure: a heading with a greeting from both members of the couple, a comment pointing out that the child belongs to both parents and that they were interested in enrolling the child in that school, a request for an appointment to have an interview and visit the school. Finally, a closing statement was included, signed by both members of the couple. The sexual orientation of the couple was made explicit by combining male/female, male/male, and female/female names in the closing section of the email. All three emails had different content, but were written in a way that did not reveal further information that might have influenced the call-back probability. The three email templates used in the experiment are shown in Annex 1.

To avoid gender bias, for schools receiving an email from the gay and heterosexual couples, both emails were signed first by a man. On the other hand, for schools receiving emails from lesbian and heterosexual couples, both emails were signed first by a woman. To avoid any undesirable problems for schools, any invitation received was rapidly declined. When the pre-registration period concluded, we processed all the call-backs and created a database with all the potential outcomes (call-backs with and without an invitation to visit the school), information regarding schools (private/semi-private, laic/Catholic, and city size).[18]

The main idea behind an experiment of this nature is to observe the uninfluenced behavior of the participating subjects. Therefore, we chose not to obtain informed consent. In this context, although ethical issues must be considered, we believe that this is defensible as

---

[18] Schools that replied to our emails did not ask for further information. They simply declined our request or invited us for a visit, either offering a personal appointment or inviting us to the "open day." To detect traces of more subtle disparate treatment, we undertook a word count of the content of the email replies. There was no significant difference in the average number of words used to reply to homosexuals and heterosexuals.

informing participants of the purpose of a study in which they participate will bias the experiment. We argue that to the extent that the experiment is implemented in a way that does not involve deception of the participating subjects there is nothing reprehensible (Riach & Rich 2004).[19] It is our opinion that schools do not experience much deception in our experiment. We conducted our experiment in a way that avoided adverse reactions from schools. In particular, we decided not to survey schools and to use only the information that was already public knowledge (type of school and municipality) or that could be learned from the emails that we received from the schools. We have done our utmost not to harm schools by rejecting invitations to visit the schools as soon as possible. Our understanding is that schools do not constitute a vulnerable group needing to be protected from social scientists. It is our view that our actions, beyond spending a few minutes reading and replying to our emails, do not involve any costs or deception for schools.

5. Results

5.1. Descriptive analysis

In Table 1 we show the distribution of the call-backs. In all, 23.9% of the schools that received heterosexual/gay paired emails did not reply to either of the two fictitious couples, whereas this number was 26.9% for the lesbian/heterosexual paired emails. However, 36.1% and 42.2% replied to both fictitious couples in both pairs of emails respectively. The difference between the proportion of schools that replied to only heterosexual couples and to only gay couples was 22.2 percentage points (31.1% vs. 8.9%), whilst this difference for the case of heterosexual/lesbian couples was 3.3 percentage points (15.6% vs. 12.3%). In Table 1, we also report the results of McNemar's test for paired data. The tests reveal that between gay men and heterosexuals the difference in the call-back probability and the probability of being invited is statistically significant in favor of heterosexuals, whereas these differences are not statistically different from zero if we compare lesbian couples to their heterosexual counterparts.

In Table 2, we report the differences in the rate of call-backs and invitations between gay and lesbian couples. We test for the difference in proportions for independent samples. We observe that the response rate for lesbian couples is higher than for gay couples, 9.5 and 9.6 percentage points for call-backs and invitations respectively. In both cases, this difference is statistically significant.

---

[19] A discussion of the ethical considerations in this type of experiment is offered in Riach and Rich (2004). As these authors point out, evidence from this type of experiment has been accepted in American courts, which is attributable in part to the strong national policy favoring vigorous enforcement of our civil rights laws.

Table 1: Distribution of call-backs and call-backs with invitation

	Hetero vs.	# of schools	No reply to either couple		Replied both		Replied only heterosexual (1)		Replied only homosexual (2)		Net discrimination (1)-(2)		McNemar's χ^2 test
	Gay	305	73	23.90%	110	36.10%	95	31.10%	27	8.90%	68	22.20%	37.9***
Call-back	**Lesbian**	301	90	29.90%	127	42.20%	47	15.60%	37	12.30%	10	3.30%	1.19
	Gay	305	85	27.80%	104	34.10%	91	29.80%	25	8.10%	66	21.60%	37.5***
Invitation	**Lesbian**	301	100	33.20%	121	40.20%	45	14.90%	35	11.60%	10	3.30%	1.25

Note: In the McNemar's test the null hypothesys is: (1)-(2)=0
        *** Significant at 1% level.

Table 2: Test of the difference in proportions between gay and lesbian couples (independent samples)

	# of schools		% of replies		s.e.		Test	
	Gay	Lesbian	Gay (1)	Lesbian (2)	Gay	Lesbian	(1)-(2)	z-val.
Call-backs	305	301	44,9%	54,5%	0,0285	0,0289	-9,6%	-2,36***
Invitations	305	301	42,3%	51,8%	0,0283	0,0289	-9,5%	-2,36***

Note: *** Significant at 1% level.

As can be seen from Tables 1 and 2, the results for differences between call-backs and invitations are negligible as practically all call-backs are accompanied by an invitation. Therefore, in the remainder of the paper we focus only on "invitations".

Other variables, used as independent variables in the econometric analysis, are described and summarized in Table 3. For the sample of schools receiving emails from heterosexual and gay couples, around 66% of schools are religious (Catholic) and only 4% are fully private. The sample of schools receiving emails from heterosexual and lesbian couples exhibit similar characteristics: Around 63% of schools are religious (Catholic) and 6% are fully private. Therefore, it is worth noting that the majority of the schools in the sample are private, but receiving public funding, and around two-thirds are religious institutions. Around 28% of the schools are located in Barcelona city. Because of the randomization of the experiment, we see that the school characteristics are very similar for both pairs of emails, heterosexual–gay and heterosexual–lesbian.

Table 3: Explanatory variables used in econometric analysis

Independent variables	Heterosexual and Gay		Heterosexual and Lesbian	
	Mean	S.d.	Mean	S.d.
School Characteristics				
Religious	0.665	0.472	0.627	0.484
Private	0.039	0.194	0.059	0.237
City size				
> 10.000	0.111	0.314	0.086	0.281
10.000 to 50.000	0.232	0.422	0.235	0.424
50.000 to 100.000	0.134	0.341	0.136	0.343
> 100.000 excluding Barcelona	0.242	0.429	0.242	0.428
Barcelona city	0.278	0.448	0.299	0.458
Number of schools	**305**		**301**	

5.2. Econometric analysis

In this section, we report the results of the probit analysis of the probability of receiving an invitation, as shown in Table 4. In our model, we control for the type of school (fully private or private with public funding), religious orientation (Catholic or laic), and the school location (city size). We also include a dummy that takes the value of one if the first of the pair of emails sent to the school was that from the homosexual couple. Finally, to test whether homosexual couples receive different treatment across school characteristics, we also include interactions between the sexual orientation of the parents and school characteristics. The results for both samples, heterosexual–gay couples and heterosexual–lesbian couples, are shown jointly in the same table. For ease of interpretation, we report estimated marginal effects rather than estimated coefficients.

In columns (1)-(4) and (7)-(10), we show the basic model, containing just a dummy for sexual orientation and a set of dummies picking up school characteristics. The results underline the findings already established in the previous descriptive analysis. After controlling for the set of covariates regarding school characteristics, the estimated marginal effects for the sexual orientation dummies are practically identical to the differences already reported in Table 1. We observe that for gay couples, the probability of receiving an invitation is 22 percentage points lower than for their heterosexual counterparts (column 4), while for lesbian couples, this probability is only 3.4 percentage points lower with respect to heterosexual couples (column 10). The estimated marginal effect is only statistically significant for gay couples.

The dummy variable picking up the order of the email also turns out to be statistically significant only for gay couples. That is, if the first of the pair of emails was the one corresponding to the gay couple, the probability of receiving an invitation decreased by 11 percentage points. Despite the significance of this variable, its omission from the model (column 1) does not change the results of the coefficient associated with the gay couple dummy reported in column (2)-(4), either in magnitude or in significance. We also find that compared to Barcelona city, schools located in cities with more than 100,000 inhabitants (excluding Barcelona city), and between 10,000 and 50,000 inhabitants were more likely to respond only in the sample of heterosexual–gay couple emails. Statistical significance for these two city size variables was only at the 10% and 5% levels respectively. School characteristics in terms of the distinction between religious and semi-private do not exhibit any statistically significant effect on the probability of being invited to visit the school in either of the two samples.

In columns (5) and (6) we report the results of the models including interactions of the sexual orientation dummy with school characteristics for the sample of heterosexual–gay couple

emails. Only two of the interactions turn out to be statistically significant. Religious schools (0.123) are more likely to send an invitation to a gay couple than non-religious schools. Analogously, schools located in cities with 50,000–100,000 inhabitants (0.183) are more likely to send an invitation to a gay couple than schools located in Barcelona city (city size base category). These two interactions were statistically significant at the 10% and 5% levels respectively. This result indicates that in this type of schools the heterosexual-gay gap in the callback rate is still negative against gay couples but smaller.

For the sample of heterosexual–lesbian couple emails, models with interactions are shown in columns (11) and (12). Lesbian couples are less likely to receive a callback from schools located in Barcelona city (city size base category) than from schools located in cities with fewer than 10,000 inhabitants (0.209) and with more than 100,000 inhabitants (0.166). Lesbian couples are also more likely to receive an invitation from private schools receiving public funding (0.306) than from fully private schools. Interactions with the city size variables are significant at the 5% level, while the interaction with the type of school is significant at the 1% level.

At the bottom of table 4, we report the results of the tests for the joint significance of all interactions. Estimated parameters of the interactions of the homosexual dummy with the city size dummies turned out not to be statistically different from zero. This result is consistent for gay and lesbian couples (column 5 and 11). When we add to the model interactions with the remaining school characteristics (religious and semi-private), we observe again that for gay couples all the interactions taken together are not statistically different from zero (column 6). However, for lesbian couples, we now cannot reject the null hypothesis at the 5% level (column 12). This result is due to the strong significance of the interaction of the lesbian dummy with the semi-private school dummy. We conclude that despite the significance in both samples of some of the interactions between sexual orientation and school characteristics, we cannot establish a clear pattern that allow us to explain these differences.

Table 4: Probit estimates of the probability of receiving a call-back with an invitation (marginal effects)

	Gay vs. Heterosexual couples					
	(1)	(2)	(3)	(4)	(5)	(6)
Homosexual	-0.216***	-0.218***	-0.219***	-0.222***	-0.275***	-0.279
	(0.0331)	(0.0334)	(0.0337)	(0.0341)	(0.0593)	(0.174)
Semi-private			0.210*	0.168	0.168	0.208
			(0.119)	(0.132)	(0.132)	(0.149)
Religious			0.0380	0.0396	0.0389	-0.0234
			(0.0513)	(0.0526)	(0.0527)	(0.0659)
< 10,000 inhabitants				0.120	0.0587	0.0593
				(0.0742)	(0.103)	(0.102)
10,000 - 50,000 inhabitants				0.124**	0.128	0.132
				(0.0630)	(0.0828)	(0.0830)
50,000 - 100,000 inhabitants				-0.0009	-0.0884	-0.0952
				(0.0829)	(0.0983)	(0.0980)
>100,000 inhabitants				0.117*	0.0831	0.0699
				(0.0660)	(0.0828)	(0.0834)
Homosexual x (< 10,000)					0.124	0.124
					(0.126)	(0.124)
Homosexual x (10,000 - 50,000)					-0.00241	-0.0105
					(0.102)	(0.103)
Homosexual x (50,000 - 100,000)					0.172*	0.183**
					(0.0956)	(0.0930)
Homosexual x (>100,000)					0.0708	0.0960
					(0.0924)	(0.0932)
Homosexual x Semi-private						-0.0883
						(0.192)
Homosexual x Religious						0.123*
						(0.0729)
First email homosexual		-0.109**	-0.112**	-0.110**	-0.110**	-0.110**
		(0.0461)	(0.0464)	(0.0468)	(0.0470)	(0.0471)
P-values for LR Test (H$_0$: All interactions=0)					0.3031	0.258
Observations	610	610	610	610	610	610

Note: Robust standard errors in parentheses (clustered at school level); *** p<0.01, ** p<0.05, * p<0.1; In city size dummies the base category is Barcelona city.

Table 4 (Continuation)

	Lesbian vs. Heterosexual couples					
	(7)	(8)	(9)	(10)	(11)	(12)
Homosexual	-0.0332	-0.0336	-0.0338	-0.0341	-0.125**	-0.353***
	(0.0297)	(0.0298)	(0.0298)	(0.0301)	(0.0549)	(0.117)
Semi-private			0.0646	0.0742	0.0744	-0.0802
			(0.107)	(0.111)	(0.111)	(0.130)
Religious			0.0176	0.0165	0.0167	0.0612
			(0.0533)	(0.0548)	(0.0550)	(0.0631)
< 10,000 inhabitants				-0.0696	-0.151	-0.181*
				(0.0932)	(0.111)	(0.108)
10,000 - 50,000 inhabitants				0.00789	-0.0408	-0.0375
				(0.0682)	(0.0801)	(0.0801)
50,000 - 100,000 inhabitants				0.0478	0.0229	0.0190
				(0.0822)	(0.0959)	(0.0963)
>100,000 inhabitants				-0.0946	-0.191**	-0.181**
				(0.0684)	(0.0776)	(0.0782)
Homosexual x (< 10,000)					0.157	0.209**
					(0.116)	(0.106)
Homosexual x (10,000 -					0.0944	0.0880
					(0.0794)	(0.0785)
Homosexual x (50,000 -					0.0492	0.0570
					(0.0917)	(0.0923)
Homosexual x (>100,000)					0.186**	0.166**
					(0.0728)	(0.0744)
Homosexual x Semi-private						0.306***
						(0.117)
Homosexual x Religious						-0.0877
						(0.0620)
First email homosexual		0.0711	0.0716	0.0671	0.0677	0.0679
		(0.0492)	(0.0494)	(0.0499)	(0.0500)	(0.0502)
(H₀: All interactions=0 (H₀: All interactions=0)					0.1849	0.0323**
Observations	602	602	602	602	602	602

Note: Robust standard errors in parentheses (clustered at school level); *** p<0.01, ** p<0.05, * p<0.1; In city size dummies the base category is Barcelona city.

6. Conclusions and discussion

In this paper, we test for the first time whether schools are more hesitant about engaging in feedback with homosexual rather than with heterosexual parents. To do so, we use a correspondence experiment with schools during the children's pre-registration period in Catalonia (Spain). We observe that gay male parents are around 22 percentage points less likely to receive an answer from schools than heterosexual couples. However, differences in the call-back rate from schools to lesbian and heterosexual couples are not statistically significant. Thus, so far, our results regarding how schools interact with parents according to their sexual orientation partially reproduce the previous evidence regarding discrimination against homosexual individuals in other contexts, such as the labor and housing markets. While the evidence of discrimination against gay men is unequivocal, in some of these studies no evidence of discrimination against lesbians was found. Of course, we cannot be sure that if we had formally applied for admission of the children of our fictitious homosexual parents to these schools their applications would have been turned down in the same proportion that we estimate here. However, it seems to us that the fact that schools are more hesitant about interacting with gay couples than with heterosexual couples is indicative of the fact that some kind of subtle discrimination may exist. If private schools, in which students generally perform better, are more prone to discrimination than public schools, this unequal treatment would presumably translate into lower access to better schools for pupils with homosexual fathers. Unfortunately, we do not have any indicator of school quality in our data that would allow us to test this hypothesis.

We find it somewhat puzzling that no traces of discrimination are found toward lesbian couples. Unfortunately, our experiment does not allow us to disentangle this puzzle. However, resorting to those studies that report the fact that gay men are perceived with more prejudice than lesbians (Herek, 2000; Herek 2002; Kite & Whitley 1996) may explain the different treatment between gay and lesbian couples we observe here. We believe that understanding the nature of discriminatory behavior toward gay and lesbian couples is relevant. Governments that allow homosexual couples to adopt children should ensure that discrimination in school is no barrier with respect to this right to adopt. In this regard, we believe our study is a first step in the right direction. However, more empirical evidence along these lines is necessary to understand the magnitude of the problem, if indeed there is any, and push policymakers to take action.

References

Adam, B.D. (1981). Stigma and Employability: Discrimination by Sex and Sexual Orientation in the Ontario Legal Profession. *The Canadian Review of Sociology and Anthropology, 18*(2), 216-221.

Ahmed, A.M., & Hammarstedt, M. (2010). Sexual orientation and earnings: A register data-based approach to identify homosexuals. *Journal of Population Economics*, 23, 835–849.

Ahmed, A.M., & Hammarstedt, M. (2008a). Detecting discrimination against homosexuals: evidence from a field experiment on the Internet. *Economica*, 76, 588-597.

Ahmed, A. M., Andersson, L.& Hammarstedt, M. (2008b). Are lesbians discriminated against in the rental housing market? Evidence from a correspondence testing experiment. *Journal of Housing Economics* 17, 234-238.

Ahmed, A. M., Andersson, L. & Hammarstedt M. (2013). Are gay men and lesbians discriminated against in the hiring process? *Southern Economic Journal*, 79(3), 565–585.

Allegretto, S.A. & Arthur, M.M. (2001). An empirical analysis of homosexual/heterosexual male earnings differentials: unmarried or unequal? *Industrial and Labor Relations Review* 54, 631-646.

Arabsheibani, G., Marin, A. & Wadsworth, J. (2004). In the pink. Homosexual-heterosexual wage differentials in the UK. *International Journal of Manpower*, 25, 343-354.

Arabsheibani, G., Marin, A. & Wadsworth, J. (2005). Gay pay in the UK. *Economica* 72, 333-347.

Badgett, L. (1995). The wage effects of sexual orientation discrimination. *Industrial and Labor Relations Review*, 48, 726-739.

Baert, S. (2014). Career Lesbians. Getting Hired for Not Having Kids? *Industrial Relations Journal*, 45, 543-561.

Carpenter, C. (2005). Revisiting the income penalty for behaviorally gay men: Evidence from NHANES III, *Labour Economics*, 14, 25-34.

Carpenter, C. (2008). Sexual orientation, work, and income in Canada, *Canadian Journal of Economics*, 41(4), 1239-1261.

Carpenter, C. (2009). Sexual orientation and outcomes in college, *Economics of Education Review*, 28(6), 693-703.

Drydakis, N. (2009). Sexual Orientation Discrimination in the Labour Market. *Labour Economics*, 16(4), 364-372.

Drydakis, N. (2011). Women's Sexual Orientation and Labor Market Outcomes in Greece. *Feminist Economics*, 17, 89-117.

Drydakis, N. (2014). Sexual Orientation Discrimination in the Cypriot Labour Market: Distastes or Uncertainty? *International Journal of Manpower*, 35, 720-744.

Gerhards, J. (2010). Non-discrimination towards homosexuality", *International Sociology*, 25, 5-28.

Herek, G.M. (2000). Sexual prejudice and gender: Do heterosexuals' attitudes toward lesbian and gay men differ?, *Journal of Social Issues*, 56, 251-266.

Herek, G.M. (2002). Gender gaps and public opinion about lesbians and gay men, *Public Opinion Quarterly*, 66, 40-66.

Kite, M.E. and Whitley, E. (1996). Sex differences in attitudes toward homosexual persons, behaviors, and civil rights: A meta-analysis", *Personality and Social Psychology Bulletin*, 22, 336-353.

Laurent, T. & Mihoubi, F. (2012). Sexual orientation and wage discrimination in France: The hidden side of the rainbow. *Journal of Labor Research*, 33-4, 487-527.

Plug, E. & Berkhout, P., 2004. Effects of sexual preferences on earnings in the Netherlands. *Journal of Population Economics*, 17, 117-131.

Riach, P.A. & Risch, J. (2004). Deceptive Field Experiments of Discrimination: Are they Ethical? Kyklos. 57(3), 457–470.

Tilcsik, A. (2011). Pride and Prejudice: Employment discrimination against openly gay men in the United States. *American Journal of Sociology*, 117(2), 586–626.

Weichselbaumer, D. (2003). Sexual orientation discrimination in hiring. *Labour Economics*, 10 629-642.

Weichselbaumer, D. (2015). Testing for discrimination against lesbians of different marital status. A field experiment. *Industrial Relations*, 54(1), 131 - 161.