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ABSTRACT

Testing for Discrimination against Lesbians of Different Marital Status: A Field Experiment^{*}

In this paper, a correspondence testing experiment is conducted to examine sexual orientation discrimination against lesbians in Germany. Applications for four fictional female characters are sent out in response to job advertisements: a heterosexual single, a married heterosexual, a single lesbian and a lesbian who is in a 'same-sex registered partnership'. Different results are obtained for the two cities investigated, Munich and Berlin. While single lesbians and lesbians in a registered partnership are equally discriminated in comparison to the heterosexual women in the city of Munich, no discrimination based on sexual orientation has been found in Berlin. Furthermore, for a subset of our data we can compare the effects of a randomized versus a paired testing approach, which suggests that under certain conditions, due to increased conspicuity, the paired testing approach may lead to biased results.

JEL Classification: C93, J15, J71

Keywords: discrimination, sexual orientation, Germany

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Introduction

Over recent decades, substantial advances have been made in some countries with respect to gay and lesbian rights. In particular, the need to combat discrimination has been high on the political agenda. For example, in 2000 the European Union introduced the Employment Equality Directive (2000/78/EC) that prohibits discrimination based on sexual orientation in the private and public sector. Also in the US, in the absence of a federal law, various states and cities have banned employment discrimination of gays and lesbians. Weichselbaumer and Winter-Ebmer (2007), for example, have shown that anti-discrimination laws can indeed better the labor market situation of disadvantaged groups.

Negative attitudes towards minority groups are often considered the basis for discrimination. As data shows, prejudice towards gays and lesbians has been decreasing over time. The World Values Survey has been asking people worldwide whether they find homosexuality justifiable on a scale from 1 (never) to 10 (always). In Germany, for example, this indicator for acceptance has increased from a meager 3.5 in 1981 to 6.5 in 2006. Attitudes towards gays and lesbians are typically more negative in the US, but the improvement is also observable here (with an average of 2.4 in 1982 increasing to 4.6 in 2006). The World Values Survey also asks respondents whom, out of a list of people, they would not like to have as neighbors. While in 1990 34.8% of Germans still eschewed the idea of homosexuals as neighbors, this number has decreased to 17.3% in 2006. In the US the corresponding numbers were 38.5% in 1990 and 26% in 2006. Despite these improvements, discrimination based on sexual orientation still persists in many areas of life, as this paper will show (see Badgett et al., 2007, and Weichselbaumer, forthcoming, for reviews).

Advances have been made in some countries with respect to the legal recognition of same-sex partnerships. Countries have introduced same-sex marriage or variations thereof in the form of civil unions or registered partnerships. In the US, same-sex marriage is recognized in some municipalities and states. In Germany the “registered partnership”, which is available to same-sex couples only, was introduced in 2001. It affords gay and lesbian couples some, but not all, rights and responsibilities of marriage. Differences persist in particular with respect to adoption rights and income taxation. In 2012, the German ministry of justice drafted a law that should align the rights granted in registered partnership more closely with those of marriage. However, the law is considered too controversial within the current government for it to be likely to be passed.

While the introduction of same-sex marriage and civil unions can be seen as a step towards equality, queer theorists – often adopting a feminist critique of marriage – have been more ambivalent (Ferguson 2007). One concern is that gay marriage may simply shift social hierarchies – leading to a new differentiation between socially acceptable gay marrieds and queer Others, whose lifestyles continue to be despised. In that way, gay marriage can be interpreted as a disciplining device that pushes queers into normalized lifestyles (Butler 2004). Duggan (2002) has coined the term ‘homonormativity’ to refer to the fact that in recent decades lesbians and gays have increasingly adopted conventional, ‘homonormative’ lifestyles. These are based on marriage, a monogamous family life as well as successful careers and are closely aligned to the social norms of the heterosexual majority. The adaption of these mainstream norms may have led to increased social acceptance of gays and lesbians but, according to Duggan (2002), also took much radical potential out of the LGBT (lesbian, gay, bisexual, transgender) movement that has previously fought not only for the protection of a broader range of sexual freedoms, but often also for progressive political change. With respect to labor market outcomes, however, adopting homonormative lifestyles may very well pay off. Employers may perceive same-sex marriage as a signal for increased domesticity and employees in such a union may be preferred to presumably ‘radical queers’. This is what this paper seeks to investigate.

So far, little research has been conducted to investigate the economic effect of same-sex marriage or legal variations thereof. The reason for this is that few data sets allow the identification of both single and partnered gays and lesbians. In addition, in countries where some form of same-sex marriage exists and data sets allow the identification of sexual orientation as well as marital status, usually there are too few observations of gays and lesbians in same-sex marriages to examine them as a separate group. For this reason LaFrance et al. (2009) have aggregated data on gays and lesbians who are married or are living common-law in Canada. They show that lesbians who are married (or are living common-law) have about ten percent higher earnings than unattached lesbians. They conclude that for lesbians living in a joint household with a partner correlates with unobserved characteristics that are valued in the labor market. This empirical result is in line with the argument that employers may prefer lesbians who adhere to a more homonormative lifestyle. It is also possible that married lesbians put more emphasis on a normalized successful life in general - on their professional career in particular - and therefore achieve higher earnings. Badgett et al. (2008) have examined the

legal partnership status of gays and lesbians in California. Their study identifies a positive correlation between being in a registered domestic partnership and higher incomes for gay men but not for lesbians. Again, this result may imply that gay marriage is rewarded positively in the labor market.

This paper is the first to experimentally examine the difference in economic outcomes between single lesbians and lesbians in a legalized relationship. Applications of fictitious female individuals, who only differ in their sexual orientation (straight versus lesbian) and marriage status (single versus married/in a registered partnership), are sent out in response to job advertisements in two German cities: Munich and Berlin. Germany provides an ideal setting for this study because of its specific job application procedure. In contrast to the United States, for example, in Germany a vast amount of information is required for a serious application and it is standard to include your family status in the résumé. The attachment of photos is also obligatory. This allows the testing of empirical phenomena, the study of which may raise suspicion in countries such as the US.

The goal of this paper is to test, whether “homonormativity” - as signaled through same-sex marriage, or a legal variation thereof - is indeed rewarded in the labor market. We do not find this to be true in the collected data. In Munich, the single and partnered lesbian is treated equally unfavorable compared to the heterosexual candidate. In Berlin, there is no discrimination based on sexual orientation. There are indicators for somewhat unfavorable treatment of partnered women of either sexual orientation; however, these effects largely disappear when controlling for firm-specific characteristics.

Literature review

The main approach to test for discrimination against gays and lesbians has been to examine their wages in comparison to heterosexuals while holding productive characteristics constant. The data sets examined have typically included information on sexual behavior or sexual identity; another approach has been to classify individuals in same-sex households who categorize themselves as “unmarried partners”. One of the main established facts in this literature is that gay men earn less than equally qualified heterosexual men (e.g. Badgett 1995, 2001; Klawitter and Flatt 1998, Berg and Lien 2002, Black et al. 2003, Blandford 2003, Carpenter 2007, Cushing-Daniels and Yeung 2009), which suggests that gay men are subjected to discrimination. Lesbians, however, earn equal or higher wages than heterosexual women with identical productive characteristics

(Badgett 1995, Klawitter and Flatt 1998, Clain and Leppel 2001, Jepsen 2007, Antecol et al. 2008, Plug and Berkhout 2004, Arabsheibani et al. 2005, Carpenter 2008, Ahmed et al. 2011). The latter empirical result, however, does not necessarily imply the absence of discrimination against lesbians. A number of reasons concerning conventional data sets may be responsible for lesbians' seemingly higher wages in wage regressions. In particular, unobserved differences in the characteristics of lesbian and heterosexual women may play a crucial role. For example, it has been argued that lesbians are not subjected to the heterosexual division of labor in the household that assigns household tasks to women (Becker 1991). As a result, lesbians may invest more in market-specific human capital (Black et al. 2003) and on-the-job training (Clain and Leppel 2001) than heterosexual women. They may also choose better-paying male dominated jobs (Blandford 2003), more working hours (Klawitter and Flatt 1998, Tebaldi and Elmslie 2006) or higher effort levels in the workplace (Berg and Lien 2002) to make up for the lack of a "male breadwinner" income in the household. Because these differences may not be fully observable in the data for the researcher, lesbian wages may be overestimated.

Besides this unobserved heterogeneity, the category "sexual orientation" represents another fundamental challenge for identifying discrimination in conventional microdata. Wage studies typically rely on the information that survey respondents provide when asked about their sexual identity, sexual behavior or partnership status. Obviously, lesbian and gay respondents will be reluctant to answer such intimate questions openly in view of the public stigma attached to same-sex orientation. It is possible that high-income gays and lesbians – who may be more confident in their interaction with an interviewer – are more likely to out themselves to an interviewer. This, of course, leads to an upward bias of lesbian as well as gay wages in wage regressions. Another problem is that conventional data sets do not include information on the outing of an individual in the workplace. However, a voluntary or involuntary outing is the precondition for labor market discrimination based on sexual orientation. Many gays and lesbians choose not to reveal their sexual orientation on the job to avoid mobbing and employment discrimination. Badgett (2001) reports some evidence that lesbians may be less likely to out themselves in the workplace than gay men. If lesbians are more comfortable outing themselves in the relative anonymity of a survey than in the workplace, discrimination against lesbians is underestimated. This is because some lesbians are erroneously categorized as "out" while they are actually hiding their sexual orientation from their employer and therefore cannot be discriminated on grounds of sexual orientation.

As this discussion illustrates, there is considerable uncertainty about how to correctly interpret the results from wage studies in terms of discrimination. Findings concerning lesbians may be particularly misleading as their apparently higher wages may simply be due to measurement problems concerning sexual orientation and unobserved heterogeneity, e.g. a higher labor market commitment of lesbians that is unobservable in the data. Given that the higher wages of lesbians obtained in wage studies do not rule out the existence of labor market discrimination of lesbians, other methods are needed to evaluate the labor market status of lesbians more reliably.

Experiments are typically considered to provide the clearest and most convincing evidence for discrimination (Fix and Struyk 1993). The main advantage of experiments is that the researcher has full control over the data collection process. In particular, in an experiment it is possible to fully control the productive characteristics of individuals so that differences in outcomes cannot be due to unobserved heterogeneity. However, not only productivity, but also the signal of sexual orientation can be set by the researcher in such a way that measurement errors leading to biased results cannot occur.

Experiments on discrimination against gays and lesbians

Economists and psychologists in particular have conducted a significant amount of experiments to investigate discrimination against gays and lesbians in different contexts, not only labor markets. They have examined to what degree gays and lesbians receive help when in need (e.g. Gabriel and Banse 2006, Ellis and Fox 2001, Hendren and Blank 2009), and how attentively they are served by store staff when shopping (Walters and Curran 1996). With respect to discrimination in housing, researchers have found unfavorable treatment of gay men (Ahmed and Hammerstedt 2009) but not of lesbians in Sweden (Ahmed et al. 2008) – a result that has been corroborated for Vancouver, Canada (Lauster and Easterbrook 2011). Jones (1996), again, identified discrimination against same-sex couples booking a hotel room in the US. The majority of experimental papers, however, focus on labor market discrimination against gays and lesbians.

Correspondence tests

The most common method of experimentally testing labor market discrimination in real life settings is called “correspondence testing”. Here applications from individuals with identical qualifications but different demographic characteristics are sent out to firms (Jowell and Prescott-Clarke 1970, Riach and Rich 2002). If one applicant is invited to an

interview more often than the other, this is ascribed to discrimination. Correspondence tests investigate the first stage in the hiring process only. So called “audit studies” go one step further and also send matched pairs of applicants (e.g. Kenney and Wissoker 1994), however, they suffer from the problem that it may be impossible to find and successfully train real-life applicants so that they truly represent a perfect match (Heckman and Sieglman 1993, Heckman 1998). In addition, auditors may consciously or subconsciously be motivated to prove discrimination and adjust their behavior accordingly in an interview situation (Ward 1969). The advantage of correspondence tests is that they circumvent these problems. By relying on written applications, the experimenter has full control over the data and there is no threat of bias introduced by real life testers.

Sociologist Barry Adam (1981) was the first to conduct a small-scale correspondence test to investigate discrimination based on sexual orientation in Canada. He sent out identical résumés for males and females, half of which included the line “Active in Gay People’s Alliance”. While presumably straight individuals received more invitations to an interview, the overall amount of applications sent was small and did not yield any significant results. Weichselbaumer (2003) represents the first large-scale correspondence testing experiment on sexual orientation discrimination and examines discrimination against lesbians in clerical jobs in the city of Vienna, Austria. To indicate lesbian orientation, a former secondary occupation in the management of the local Gay and Lesbian Alliance was indicated in the application, while the “heterosexual” candidate had been active in another non-profit organization. The lesbian applicant was 12 percentage points less successful in obtaining an interview (with an invitation rate of 42%) than the heterosexual woman. This finding proved the existence of labor market discrimination based on lesbian orientation for the first time on a statistically significant level despite the apparently higher wages of lesbians in wage regressions.

Since the 2003 study, a number of correspondence testing experiments have been conducted to test for discrimination based on sexual orientation in different countries. The highest levels of discrimination have been found by Drydakis for Cyprus (2012) and Greece (2009, 2011). Tilcsik (2011) examined the labor market situation for gays in the US and found discrimination in some but not all states investigated. Furthermore, following Weichselbaumer (2004), he examined the effect of stereotypes and found that employers who emphasize the importance of stereotypically masculine traits in their job advertisements are particularly likely to discriminate against gay men. Ahmed et al. (2013) conducted a correspondence test in Sweden. Interestingly, their results show that

discrimination against gay men is higher in male-dominated jobs, while discrimination against lesbians is more pronounced in female-dominated occupations. Patacchini et al. (2012) do not find unfavorable treatment of lesbians in Italy, but confirm the existence of discrimination against gay men.

Signaling sexual orientation

Besides being able to control for identical productive characteristics of individuals, the second main advantage of experiments is that they allow the researcher to consciously choose and implement a suitable signal for sexual orientation. To measure discrimination based on sexual orientation, the researcher wants to identify gays and lesbians who are – voluntarily or involuntarily – “out” in the labor market. Conventional surveys may ask respondents about their sexual behavior, sexual identity or partnership status, but this information does not necessarily correspond with an outing in the workplace and therefore can only act as a proxy. As has been mentioned, microdata may allow the researcher to identify gays and lesbians only indirectly, for example via classifying individuals in a same-sex household who categorize themselves as “unmarried partners” in census data (e.g. Klawitter and Flatt 1998, Clain and Leppel 2001). Such a procedure only allows the identification of gays and lesbians who live with a partner, but not of those who live in other household contexts.

In experiments it is possible to artificially “out” testers in different contexts and measure whether their outing leads to unfavorable social or economic outcomes. In previous experimental studies, for instance when having testers inquire for jobs (Hebl et al. 2002) or when examining helping behavior (Hendren and Blank 2009), psychologists have equipped testers with T-shirts or baseball hats with gay pride labels to indicate same-sex sexual orientation to their vis-à-vis. Another standard signal for sexual orientation, used by economists and psychologists alike, is to indicate a partnership between people whose sex is revealed via their first names (e.g. Ahmed et al. 2008, Ahmed and Hammerstedt 2009, Ellis and Fox 2001, Gabriel and Banse 2006). In their study on discrimination in housing, for example, Ahmed et al. (2008) sent emails of “a couple without children ... searching for an apartment” (p.236). These emails were signed by two female names to imply a lesbian relationship.

In correspondence testing experiments, the same-sex sexual orientation is typically indicated through the volunteer engagement in a gay and lesbian organization that is listed in the résumé. For the “heterosexual” candidates a control organization is chosen that does

not give any evidence of being gay or lesbian. This signal has been criticized for various reasons. One disadvantage is that adding information on a gay and lesbian organization may make the applicant look less business savvy. They may also be perceived to be radical (Weichselbaumer 2003). In that case they may not be discriminated for their sexual discrimination per se but because of disclosing it. However, as Tilcsik (2011) points out, if an applicant is treated unfavorably because an employer believes they violated a social norm by mentioning volunteer work at a gay and lesbian organization, this is still discrimination based on sexual orientation. Mentioning such an engagement can only be considered embarrassing, if same-sex orientation itself is regarded objectionable. There is no reason why experience in a gay and lesbian organization should per se be less valuable than in another matching institution.

The signal of a gay and lesbian organization has also been criticized because it may make the applicant look like a political activist (Badgett et al. 2007). If there is distaste against political activism, discrimination based on sexual orientation may be overestimated. However, this problem can be mitigated by emphasizing the managerial or financial tasks an applicant holds in the organization that are not in the political realm but relevant from a human capital perspective (e.g. Weichselbaumer 2003, Tilcsik 2011, Patacchini et al. 2012).

Finally, volunteering in a gay and lesbian organization may make a firm believe the applicant is a leftist (Tilcsik 2011). Weichselbaumer (2003) circumvented the problem of discrimination based on political beliefs by choosing a gay and lesbian organization of the political mainstream. Tilcsik (2011), again, juxtaposed a left-wing gay and lesbian organization in the gay condition with a left-leaning political organization in the control condition. However, while researchers are doing their best to circumvent the potential problems associated with signaling sexual orientation via a gay and lesbian organization, some critics may remain.

Experiment with different signals for sexual orientation

In this paper two different signals for sexual orientation are used to test how the choice of indicator for sexual orientation affects labor market outcomes in an experimental setting. As has been illustrated, most correspondence tests have used the engagement in a gay and lesbian organization as the key indicator for same-sex sexual orientation, but this signal has been criticized. Another option is to signal gay or lesbian identity via the existence of

a same-sex partner. For example, Van Hoyer and Lievens (2003) conducted a laboratory experiment in the style of a correspondence test where they stated under the rubric “family situation” that one candidate is “living together with” a person of the same sex. Once more, the latter is indicated through the first name of the partner. Ahmed et al. (2013), in their correspondence test, added a paragraph in the application letters of lesbians (gays) saying “In my spare time, I enjoy spending time with my wife (husband)”. This signal, however, only complemented the indication of sexual orientation via a gay and lesbian organization.

As mentioned above, the “registered partnership” (“eingetragene Lebenspartnerschaft”) was introduced in Germany in 2001. It provides legal recognition of gay and lesbian relationships and affords some of the rights and responsibilities available to heterosexual married couples. According to the census, until 2010, 37% of all cohabiting same-sex couples in Germany have registered as a “registered partnership”. In the following I will refer to them as “partnered” gays and lesbians (corresponding with the official German term “verpartnert”). This new legal status provides a novel indicator for sexual orientation in experimental tests in Germany.

Method

In this paper a correspondence test is presented that investigates not only whether discrimination against lesbians exists in Germany, but also whether different signals for sexual orientation lead to different results in the experimental setting.

For the purpose of the experiment four different identities were created: a heterosexual single, a married heterosexual, an unmarried lesbian and a lesbian who is in a registered partnership. The creation of these female identities was facilitated by the fact that in applications in Germany it is standard to indicate your family status in your résumé. As a consequence, the single heterosexual and single lesbian were created in the same way as in previous experiments via information on voluntary activities in combination with the information “family status: single”. Like Weichselbaumer (2003), I chose the “Lesben- und Schwulenverband in Deutschland”, LSVD, as the gay and lesbian organization (GLO), not only because it is Germany’s largest gay rights and self help organization, but also because it is located in the political mainstream. As a result, unfavorable treatment against a member of the GLO cannot be attributed to left-wing politics. Furthermore, the professional tasks held at the organization were included in the résumé (“bookkeeping and accounting”). Given the clear professional relevance of this

experience, including the voluntary engagement in the GLO is necessary for an applicant to fully reveal their factual human capital to a potential employer. In addition, emphasizing accounting experience at the GLO mitigates the concern that the applicant may be considered a political activist.

For the control condition, like Weichselbaumer (2003) and Patacchini et al. (2012), I used the voluntary engagement in a nonprofit cultural center (with the tasks: bookkeeping and accounting). As e.g. Tilcsik (2011) has argued, organizations in the control condition should not signal higher levels of social engagement, care for others and/or generosity than the gay and lesbian organization. The nonprofit cultural center should serve this purpose, as, like the GLO, it similarly caters primarily to the specific interest group of the applicant.

It should be noted that no direct indicator is given for the sexual orientation of the “single heterosexual.” However, given that heterosexuality is one of the main organizing principles of Western societies and considered the “norm” to which people typically adhere to, employers are unlikely to infer any “deviation” of that “norm” unless a respective indicator is provided. Of course, the presumably “single heterosexual” applicant could also be a lesbian in disguise who – in contrast to the “single lesbian” – does not want to out herself to a potential employer. In that way the comparison between the “single heterosexual” and the “single lesbian” also measures the costs associated with revealing lesbian orientation.

The two “married” women of different sexual orientation are constructed primarily through their marriage status. While the married heterosexual under the heading “family status” is stated as “married to Andreas Krause”, the partnered lesbian declared to be “in a registered partnership with Katharina Krause”. For comparison reasons, both of them volunteered in a nonprofit cultural center, where, again, they were responsible for bookkeeping and accounting.

Thus, this design includes two different fictional ‘lesbians’: one, whose sexual orientation is signaled through her voluntary activity in a gay and lesbian organization, and one, who is in a registered partnership. The comparison of these two types of lesbians is of interest for the following reason: As has been shown, signaling sexual orientation via a volunteer engagement in a gay and lesbian organization has been criticized because it may possibly conflate political activism or radicalism with sexual orientation (Badgett et al. 2007). The gay and lesbian organization used in this study has been chosen to minimize these problems, however, skepticism may persist. The second indicator used in

this study, information of family status, avoids this problem. However, it focuses on a subsection of partnered lesbians. As the previous discussion has shown, same-sex marriage or a legal variation thereof may be interpreted as a signal that an individual appreciates normalcy and adheres to homonormative rules. This has even been emphasized in the political debate when Germany's minister of family affairs, Kristina Schröder from the conservative Christian Democratic Union, has argued that "gays and lesbians in registered partnerships take lasting responsibility for another and thus live according to conservative values" (Süddeutsche Zeitung 2012). The engagement in a registered partnership may therefore lead to increased acceptance and put a halt to discrimination. As a result, lesbians who are in a registered partnership may be preferred to those who are not. Consequently, in our experimental setting they should be more successful than those who are single and whose sexual orientation is indicated via their activity in a gay and lesbian organization.

Randomized correspondence test

I followed Adam (1981) and Ahmed et al. (2013) and sent only one application to each job opening. The identity of the applicant (heterosexual single, married heterosexual, lesbian single and married lesbian) was randomly assigned to each application by variation of the family status and voluntary activity. Most correspondence testing experiments send multiple applications, some studies even send a whole battery of comparable résumés to one company. This "paired application process" has the advantage that it significantly speeds up the data collection process as it increases the number of observations collected per vacancy. Theoretically, sending multiple applications could also have the advantage of illustrating discrimination at the firm level. However, few correspondence testing studies make use of this advantage and present firm-fixed effect models. Also, only some explicitly report differential treatment at the firm level (exceptions are e.g. Drydakis 2009, 2011). As I will discuss later, in the first round of the experiment I also followed the more standard "paired application" design. However, due to risk of detection the paired application technique did not turn out to be viable in the current German setting, where a high awareness of correspondence tests exists. For this reason I will discuss the data collected with a paired application design separately in the last section of the paper.

Cities

Two different cities are tested in this study: Berlin and Munich. Berlin, the largest city and capital of Germany, is known in particular for its liberal political climate. Since 2001 Klaus Wowereit from the Social Democrats holds the position of the governing mayor and prime minister of the federal state. He became famous by outing himself with the line “I’m gay, and it’s good that way” back in 2001. The New York Times have called him a “Symbol of Openness” (2006), and also the city of Berlin itself owes much of its appeal to its unconventionality, openness and creative scene.

Munich is the third largest city in Germany and the capital of the Free State of Bavaria, a very prosperous state in the Roman Catholic south of the country. Bavaria is often considered a bastion of conservative politics in Germany. The conservative Christian Social Union of Bavaria (CSU) has been the dominant political force since it was founded after WWII. For more than half a century, every Minister-President of Bavaria had been a CSU party member.

Becker and Scheufele (2011) have shown that besides personal contact, religious and ideological predispositions have a great impact on people's attitudes towards homosexuality and same-sex marriage. Given the political and religious climate of the two states, Bavaria and Berlin, one would therefore hypothesize that discrimination based on sexual orientation is higher in the capital of Bavaria, Munich. There is one additional difference between Berlin and Munich, however. While unemployment is notoriously high in Berlin (between 13% and 14% in the period 2011 – mid-2012), Munich businesses often have trouble finding qualified personnel (with an unemployment rate around 4% in the period 2011–mid-2012). Given the low unemployment rate in Munich, employers have to compete for employees. This may not leave room for discrimination based on sexual orientation. As Becker (1971) has argued, discrimination should vanish in competitive settings (see, for example, Weichselbaumer and Winter-Ebmer 2007, Zweimüller 2008 for empirical tests). Given these two potentially opposing effects of politics versus economics, the empirics have to reveal which of the two effects dominates and whether differences in discrimination based on sexual orientation occur in Berlin versus Munich.

Occupations

In this study, I concentrate on the employment chances for office workers (secretaries/ clerical assistants and accountants) because here there exists sufficient labor demand to

collect a reasonably large data set. Also for secretaries and accountants, job ads are relatively standardized and it is usual to send in written résumés (in some occupations applicants are required to call-in). Finally, for office clerks it is possible to create convincing applications and provide the relevant application material (e.g. school reports), which is a complex task in the German setting.

Applications

Constructing a correspondence test in a German speaking country is a challenge because of the large amount of material a credible applicant needs to submit. The amount of information required is particularly striking in contrast to countries like the US where applicants have to provide fewer personal details and thereby are better protected from discrimination in the first stage of the application process. In the German setting an applicant is not considered to be sincere if they do not attach a photograph and various school reports. Most applicants also include reference letters and documents on further training. This considerably complicates the creation of applications and severely reduces the amount of jobs that an experiment can include. Therefore, a thorough experiment in a German speaking country will typically not be able to cover the broad range of jobs that studies in other countries, e.g. Sweden or the US, examine (e.g. Ahmed et al. 2013, Oreopoulos 2011). Also, because realistic applications can only be created for few occupations, a carefully conducted correspondence test in a German speaking country will usually not be able to collect the amount of data that is sometimes obtained by studies elsewhere (for example Oreopoulos 2011), where the coverage of many different jobs comes at lower costs. Furthermore, because the construction of fake school reports is particularly time consuming, in the German setting it is not efficient to vary variables of minor interest, e.g. years of job experience (Bertrand and Mullainathan 2004): Changing the age of an applicant (and thereby the years of job experience) may require the fabrication of an entirely new document for a school report. However, these increased costs of the German setting also come at a benefit. First, because of the vast amount of information provided in a German application, there is also scope for altering variables, like family status or physical looks, that cannot be tested elsewhere. As a result, questions like the effect of being in a registered partnership can be examined in the German context while similar experiments may raise suspicion in other countries. Second, in a setting where such detailed information on an applicant is provided, statistical discrimination

(Phelps 1972, Arrow 1973) is less likely. Results are therefore most likely due to a taste for discrimination (Becker 1971, Weichselbaumer 2004).

In the current experiment, each application consists of following elements: A letter of application, a résumé, a photograph, a fake school report (certifying qualification for university matriculation) and a fake certificate for successfully having passed the final exams as an office clerk apprentice. In the creation of documents I have strictly adhered to the rules identified by the German Federal Anti-Discrimination Agency that legally cover testing procedures (Klose and Kühn 2010). Because the fictitious applicants were still employed in their first regular job, the failure to provide letters of reference from previous employers was not evident. Because only one application was sent to each firm, the applications of different identities were identical in every respect apart from the family status and volunteer activities. The identity of the applicant was assigned randomly. At the time of the experiment, the fictitious applicant, Julia Schulz, was 30 years old. This name was used because of its very common first and surname. Following her A-levels (Abitur) and apprenticeship as an office clerk, she had 8 years of job experience as an office clerk or accountant. The application also included information on her IT-skills as well as foreign language abilities, and indicated that she held a driver's license. Her hobbies were painting and sport. When applying to a firm, the various application documents were combined in one electronic file that was sent to the companies by email. Of course, the applications gave full contact information: an address, an email-address and a cell phone number which lead to a voicemail, so that companies could get in touch with the fictitious applicant.

Procedure

From May 2011 until August 2012, various popular online job portals were searched weekly for relevant job ads in Berlin and Munich. Applications were restricted to full-time jobs and job postings whose basic requirements matched the profile of our fictitious candidate. Because we had only one applicant reply to each company's ad, it was crucial that the vacancies included in the study are comparable. Each ad was carefully checked for its suitability and coded how well it matched the standardized profile of the applicant. This information was used later as a control variable. If a personnel recruitment agency was involved in the selection process, the respective ad was omitted. Each company was contacted only once during the course of the experiment to avoid detection. All remaining companies that welcomed applications by email were contacted.

If an employer was interested in the applicant, she could be contacted by leaving a message on her cell-phone, by email or through regular mail. We coded invitations to an interview as well as inquiries that came with the stated interest in the candidate as positive response (callback). When the applicant was invited to an interview, the appointment was canceled within a day to avoid any inconvenience to the company.

Results

Not all applications sent produced usable observations. In particular, observations had to be dropped if our email application bounced back – for example because of an incorrect email address given in the advertisement or due to an overfull mailbox. Also, on receiving our application, some companies requested us to enter all information on the applicant in an online form or informed us that they were missing certain information in our application without which it would not be processed. For practical reasons, we did not follow up these applications. A few companies informed us that there was a mistake in the job profile of their ad or that, unexpectedly, they had been able to immediately fill the vacancy – e.g. with an internal candidate. These observations were dropped. This left us with 1066 usable observations, 682 of which from Munich where the economy was booming despite the international economic crises.

Results: Munich

The overall callback rates for different identities are presented in Figure 1. Note that these are raw data, as only the application of one identity was sent to each company. In Munich, the single heterosexual woman was the most successful, she received positive feedback from 45.3% of companies contacted, followed by the married heterosexual woman who received a callback from 41.5% of firms. This difference, however, is not statistically significant ($t=0.7014$, $p=0.24$, one-sided test). The two lesbians whose sexual orientation is indicated once by her engagement in a gay and lesbian organization (“single lesbian”) and once by the fact that she is in a registered partnership (“partnered lesbian”) turn out to be equally successful in Munich, but they fare significantly worse than the heterosexual women. T-tests show that either heterosexual woman, the single as well as the married, is preferred to either lesbian (single heterosexual versus single lesbian: $t=2.42$, $p=0.008$, single heterosexual versus married lesbian: $t=2.39$, $p=0.008$, married heterosexual versus

single lesbian: $t=1.71$, $p=0.04$, married heterosexuals versus married lesbian: $t=1.69$, $p=0.046$, all one-sided).

In the next step, a probit analysis is conducted to examine the probability of a positive callback in more detail. The first specification in Table 1 is without any controls. As shown, the single lesbian is 12 percentage points and the partnered lesbian 11 percentage points less likely to receive a callback than the heterosexual single woman. There is no effect for the married heterosexual woman. In specification 2, we add the following controls: occupation accountant (reference category: secretary/clerk), firm size (1-3: small: 1-20 employees, medium: 21-500 employees, large: > 500 employees), action radius of the firm (1-3: local, national, international) and, most importantly, job requirements. Job requirements are coded in the following way: 0 = our candidate matches the requirements, 1 = the ad mentions it would be an advantage if the candidate has some special skill (e.g. with respect to a computer program or language) that our applicant does not have, 2 = the ad mentions some particular skill/experience to be required for the job which our applicant does not have. Note that our applicants were relatively well qualified, so if our applicant did not provide the particular skill, many other applicants would also not. Specification 3 additionally includes time dummies (for quarters), specification 4 industries. We distinguish between trade, manufacturing and services. Because the majority of jobs are in the service sector, we formed clusters within this sector. The reference category is "other services". In specification 5 we include interaction effects for job requirements and identity. If skills are required that our applicants do not have this may reduce callback chances. However, in jobs with higher requirements, there may be fewer applications. This may be an advantage for lesbian candidates.

As the results for the different specifications show, the effects concerning the different identities are robust when adding control variables. The unfavorable treatment of our lesbian candidates therefore cannot be explained by particular characteristics of the jobs these women have applied to in the randomized application design. The single lesbian is 11-15 percentage points less successful than the single heterosexual woman, the partnered lesbian receives 11-13 percentage points fewer callbacks than the single heterosexual woman. This documents discrimination based on sexual orientation against the single lesbian in Munich. For the partnered lesbian, it is not clear who is the more suitable reference group, the single or the married heterosexual woman. If it is true that partnered lesbians do not specialize in household work to the same degree as heterosexuals (Black et al. 2003), the single heterosexual may be the more suitable

reference point. However, if companies consider marriage to be a signal that a woman is less flexible and less available for the job, no matter if she is hetero- or homosexual, the married heterosexual may be the more appropriate comparison for the partnered lesbian. Testing for equal coefficients shows that the difference between the coefficients for the married heterosexual woman and the partnered lesbian is significant at the 10% level for all specifications. This indicates that the partnered lesbian is also discriminated in comparison to the married heterosexual woman – at least on a marginally significant level.

The results in Table 1 also show that accountants have a higher invitation rate than secretaries/clerks. Applicants also have a somewhat higher probability of a callback when applying to lawyers or notaries (legal services) or to business and tax consultancies. No other control variables are significant. Interestingly, the inability to provide specific skills required in the job advertisement does not affect the probability of a positive callback. This may be a sign that in Munich firms are short of qualified applicants and do not have the scope to reject candidates who do not fully fit the profile.

Summing up, there is indeed discrimination based on sexual orientation in Munich. However, we do not find a positive effect for “same-sex marriage” as has been postulated. Lesbians in a registered partnership are treated equally unfavorably as single lesbians. The reason for this may be that in the relatively conservative state of Bavaria same-sex marriage is actually not seen as a way to live “conservative values” but more as a threat to heterosexual marriage.

Results: Berlin

For Berlin, callback rates from the raw data are given in Figure 2. While the single heterosexual woman received a positive response from 38.5% of all firms applied to, the married heterosexual woman was contacted by only 31.3% of companies. This difference, though, is not statistically significant according to a t-test ($t=0.915$, $p=0.18$, one-sided test). With a callback-rate of 41.9%, the single lesbian does not fare statistically differently from the single heterosexual woman ($t=-0.48$, $p=0.31$, one-sided test) – however, she is doing better than the married heterosexual woman on a marginally significant level ($t=-1.44$, $p=0.08$, one-sided test). The partnered lesbian is – contrary to the original hypothesis – not more, but actually less likely than the single lesbian to receive a callback ($t=2.41$, $p=0.01$, one-sided test). She is also significantly less successful than the single heterosexual woman ($t=1.71$, $p=0.04$). There is no significant difference in comparison to the married heterosexual applicant, though ($t=0.61$, $p=0.27$). These raw

data suggest that in Berlin employers may actually not distinguish by sexual orientation but possibly by marital status. The women in a legalized partnership are less successful than the single lesbian, who is statistically indistinguishable from the heterosexual single woman. This result is compatible with the view that “married” women may generally be less available for the job – irrespective of their sexual orientation. Particularly a woman in an office job may be perceived to be the secondary earner in a straight or lesbian marriage and therefore less committed to her job. It may also be that in hip and progressive Berlin, marriage is seen as somewhat conservative. Notably, Berlin’s mayor is not in a registered partnership (while the previous Vice-chancellor of Germany, Westerwelle, who is acting at a federal level, is). However, given the randomized application approach, we need to control for characteristics of firms, before drawing any conclusions.

Again, the probability of receiving a callback is investigated more fully in a probit analysis. No significant effects are found for different identities in comparison to the heterosexual single woman. Only in the last specification is the married women less likely to receive a callback – but only on a marginally significant level. When comparing the other coefficients for different identities, there is only a significant difference between the single and partnered lesbian in the first two specifications (both times: $p=0.02$). However, this difference becomes insignificant when adding additional control variables. As in Munich, the chance of receiving a callback as an accountant is significantly higher than for a secretary. The same is true when applying for a job in the legal services sector (on a marginally significant level). Applications in the manufacturing sector, however, are significantly less likely to be successful. While in Munich we found no effect for the radius within which a firm operates, in Berlin our candidate is particularly popular with companies that not only focus on the local market, but act more at national and international level. It may be that our applicant looks more worldly-wise compared to other applicants in Berlin, it may also be that companies that do not depend on the relatively slack Berlin product market are doing better and therefore have the resources to invite more people to interviews.

Overall, the probit estimations do not reveal discrimination based on sexual orientation for Berlin. There are minor indicators that individuals in different-sex or same-sex marriage may be at a disadvantage, however these signs are smaller than in the raw data.

Sending out paired applications

As has been mentioned before, in the German setting it turned out to be important to send out randomized instead of paired applications to receive unbiased estimates for discrimination. Two reasons have been responsible for this. First, the General Equal Treatment Act (AGG), introduced in Germany in 2006, allows applicants who have been discriminated in the application process to sue the company. This led some people to misuse the law and send applications to companies simply with the aim of suing for compensation due to discrimination. The phenomenon has been called AGG-hopping, because a few people (typically not those for whom the law was originally intended) tried to make a living by suing large numbers of companies. AGG-hoppers typically targeted firms that indeed included discriminatory preferences in their advertisement (for example, elderly males applied to advertisements seeking “a young female secretary”, but without having any appropriate qualifications) and sued the firm for discrimination if they were not invited for an interview. Another strategy for a potential AGG-hopper could be to send an application with a signal that provokes discrimination and match this with the application of an equally qualified person (lacking the signal). If only the latter is invited to an interview, the applicant could prove to have been discriminated against. For our experiment, this means that in the German setting with its public debate on AGG-hoppers, firms that receive two or more comparable applications (one of which reveals a characteristic against which many firms discriminate) may suspect they are dealing with a potential claimant.

Second, Kaas and Manger (2012), who conducted a correspondence test on the labor market chances of paired students with Turkish and German sounding names, first published their results in 2010, which were eagerly picked up by the media. In particular, the Federal Anti-Discrimination Agency promoted the study to create awareness of discriminatory practices in the labor market.

In the period between December 2010 and March 2011, a first round of the current experiment was started in Berlin. In this first phase I sent three paired applications to each job vacancy, following the design of Weichselbaumer (2004). Every firm received one application from a single heterosexual woman, a married heterosexual and one lesbian whose sexual orientation was either indicated via voluntary activities or via her marital status. Of course, these three applications looked different, even though the essential characteristics such as qualification and experience were closely matched, as is the practice in correspondence tests (Riach and Rich 2002). The names, the personal and

contact details as well as the layout differed. Photographs of different, yet similarly attractive, women were used in the applications and applicants listed different schools and jobs at different companies. Yet, the individuals were equally qualified with respect to their schooling and job experience. The signals for different identities (single heterosexual woman, married woman, single lesbian, lesbian in a registered partnership), marital status and volunteer activity, were randomly assigned to three templates (Schulz, Richter, Bauer). However, when the second company detected the experiment within the first 100 firms contacted, the process was halted. One company asked outright whether they were being tested, another contacted the jobportal where the job was advertised to inform the provider about apparent testings. Given that previous experiments have sent up to twelve matched applications per job (Firth 1982), not only awareness about the correspondence testing method and about AGG-hoppers may play a role in this detection, but also cultural specifics inherent to the German application process.

In total 273 observations have been collected in this first round of the experiment. The callback-rates by identity are illustrated in Figure 3. If these observations from the matched pairs are added to the data from the randomized approach, this gives 663 observations for Berlin. These are jointly analyzed in the probit estimation in Table 3. Because now multiple applications have been sent to the same firm, standard errors are corrected for clustering of the observations at the firm level. Without any controls, there is now an apparent advantage for the single lesbian. According to column one, she has a 10 percentage points higher probability of a callback than the single heterosexual woman. This apparent advantage persists if controls for the templates of applications are included (Richter, Bauer, reference category: Schulz). However, as soon as controls are included for paired applications, the effect for the single lesbian disappears. As is illustrated by including interaction effects, the single heterosexual woman in particular suffers from the paired applications design. The effect is robust throughout all specifications. It therefore seems that not only the firms that let us know detected the experiment. Others must have been suspicious and gave fewer callbacks particularly to that identity that – relative to the other applicants investigated – is usually the most preferred in the labor market (see the results for Munich). For future research, this means that caution is required when applying the paired application approach as discrimination may be fundamentally underestimated. As in our example, the paired application approach may also lead to nonsensical results, like preferential treatment for a minority applicant (specification 1-2), because employers want to present themselves as particularly minority friendly. Public debates on

discrimination are important and fruitful to combat unfavorable treatment of groups. If employers simply adjust their employment behavior to avoid being detected as discriminatory in testing experiments, this may still lead to improvements for minority applicants. What is interesting, though, is that in our data, employers seem to carefully scan all applications and change their discriminatory behavior only if they identify a testing situation via matched pairs of applications.

Finally, it should be mentioned that the analysis of the aggregated Berlin data, once controlling for paired testing (specifications 3 – 7), confirms most of the previous Berlin results. Only the variable job requirements becomes significant in the aggregated data, implying that our candidates have a lower chance of receiving a callback if the employer requires special skills our applicant does not hold. However, specification 7 illustrates that this effect mainly concerns the heterosexual single woman. Also in specification 7 there is some weak evidence that married women are at a disadvantage in the Berlin labor market, no matter if lesbian or not.

Conclusions

This study represents the first correspondence test that examines discrimination based on sexual orientation in Germany. Furthermore, the goal was to test for the first time, whether different signals for sexual orientation used in a study affect the levels of discrimination measured. In this paper we compared the labor market opportunities of a lesbian whose sexuality is revealed through her involvement in a gay and lesbian organization with a lesbian whose sexual orientation is signaled via her registered partnership with another woman. These two types are compared to a single and a married heterosexual woman.

The reason for the comparison of the two indicators for sexual orientation is the following: The signal of a gay and lesbian organization has been criticized because it may conflate a distaste against gays and lesbians with one against activists, radicals or left-wingers (Badgett et al. 2008, Tilcsik 2011). The organization chosen in the current study, the Lesben- und Schwulenverband in Deutschland (LSVD), would barely be considered particularly left-wing and the indication of professional tasks held at the organization (bookkeeping and accounting) may make the applicant look more like a bore than a radical. However, as the recent discussion on “homonormativity” (Duggan 2002) has shown, it may indeed be that lesbians in a same-sex marriage (or a legal variation thereof) are considered more mainstream and less threatening by the heterosexual majority than a lesbian in a gay and lesbian organization. One indication for the increased acceptance of

gays and lesbians in registered partnerships has been that Germany's minister of family affairs has publicly lauded them for living according to "conservative values". Guido Westerwelle, foreign minister in the current conservative government coalition, is in a registered partnership himself. This implies that normalcy may pay off in the labor market.

Two cities have been examined in this study: Munich and Berlin. Munich is the capital of Bavaria, a traditionally conservative state in the Roman-Catholic south of Germany, while Berlin is politically very liberal. In addition, the largest religious denomination in Berlin is Protestant, which typically supports more liberal values with respect to women and sexual minorities than Catholics. However, apart from ideology, there is also one other crucial difference between the two cities examined: Munich is economically far more successful and has an unemployment rate that is only a fraction of that in Berlin. Consequently, there are two countervailing effects at work: values versus economy. While more conservative values may go in line with a distaste against lesbians, the lack of qualified workers available in Munich may prevent firms from indulging in discriminatory tastes (Becker 1971).

We find strong differences with respect to discrimination based on sexual orientation in the two cities investigated – this corresponds with Tilcsik (2011), who reports significant regional variations in the level of discrimination for the US. The results show that in Munich there is significant discrimination based on sexual orientation despite the low unemployment rate. In comparison to Berlin, where unemployment is high, discrimination in Munich is therefore actually underestimated. For Berlin we find no signs of discrimination based on sexual orientation. While, of course, the comparison between Berlin and Munich can merely provide a case study, it is interesting to note that economic factors do not necessarily trump social-political factors in all situations. Economists have typically argued that increased competition will eliminate discrimination (Becker 1971). The case of Berlin suggests that ideological factors may also be crucial. If this is true, a change in attitudes, e.g. through political campaigns, may also positively affect the employment outcomes of minorities – at least in the long run. Becker and Scheufele (2011) have shown, albeit for the US, that political ideology and religion are good predictors for attitudes towards gays and lesbians. More conservative individuals score significantly lower in their acceptance of homosexuality. They are also more opposed to gay and lesbian marriage. These differences in attitude may translate into different levels of labor market discrimination. Similarly, according to Becker and Scheufele (2011),

religiousness has a negative effect on people's tolerance towards sexual minorities and even more so towards same-sex marriage. In this respect it is important to know that Munich and Berlin also strongly differ with respect to the level of religiousness. While in Munich only 20% of the population declare to be unaffiliated with any religion (or to adhere to a religious group other than Catholic, Protestant, Muslim), the respective number for Berlin is 63% (Statista 2013). This great difference has to do largely with Germany's reunification after the end of the cold war: Until 1990 Berlin was a divided city and the part that previously belonged to the GDR (German Democratic Republic) in the east has a strong atheist tradition. It may be that these low levels of religiousness in Berlin also help gays and lesbians. It should be noted though, that a state-socialist past does not necessarily reduce "homonegativity", i.e. a dislike of gays and lesbians. Indeed Stulhofer and Rimac (2009) show that attitudes toward homosexuality are more negative in Eastern European countries that had a state-socialist past. However, this effect may be due to the lower levels of urbanization, the importance of Eastern Orthodox religion in some of these countries or, most importantly, the lower levels of GDP.

The hypothesis that a legalized union in form of a registered partnership may work as an indicator for normalcy, which may be positively rewarded in the labor market, has not been confirmed. The woman with a registered partner is never doing better than the single lesbian. In Munich this result may have to do with local, public skepticism towards registered partnerships. Local politicians emphasize the primacy of heterosexual marriage which is argued to deserve special protection, because in contrast to gay or lesbian registered partnership it is directed toward the propagation of life (Der Spiegel 2012). Also, only 52% of the supporters of the locally dominant party CSU support equal rights for gays/lesbians in registered partnerships and heterosexual married couples, in contrast to 66% of all Germans (infratest 2013). Possibly, if acceptance of gays and lesbians is below a particular threshold, the demand for "normalcy" is also considered a provocation by parts of the public. In Berlin, there are actually some indicators in the raw data that women who live in a legalized partnership are treated somewhat less favorably – irrespective of sexual orientation. It may be that women in a legalized partnership are considered less flexible and less career oriented. However, these effects mainly disappear when controlling for additional variables.

It would be interesting if gay men profit more from homonormativity than the lesbians in this study. Attitudes towards gays have sometimes been found to be even more negative than towards lesbians (e.g. LaMar and Kite, 1998; Herek, 2002). One of the

stereotypes held against gay men (but not lesbians) is that they have a promiscuous sex life, which employers possibly fear may intervene with a steady and responsible work life. As the literature on the heterosexual male marriage premium suggests, employers may have preferences for male employees with one steady married partner (see e.g. Cohen 2002, Hersch and Stratton 2000). If that is the case, gay men may have a greater advantage from signaling they are in a committed, registered partnership than lesbians. Further research is needed to answer this question.

The differences obtained in this study for the two different cities investigated suggest that caution is warranted when generalizing correspondence testing results. Levels of discrimination depend on a large number of economic and social factors that differ locally. Current opinion polls show that 53% of US Americans believe that same-sex couples should be recognized by the law and have the same rights as married heterosexuals (Gallup 2012). This number is close to the one reported for Bavarians who support the local conservative party, CSU (infratest 2013). However, given the multitude of factors determining discrimination, no inferences should be made on the level of discrimination against gays and lesbians in a legalized partnership in the US. Only further research will be able to tell whether gays and lesbians profit from same-sex marriage (or a legal variation thereof) in other labor market contexts than those examined here.

Finally, this study has also illustrated that experimenters have to be very careful when setting up their research design. Correspondence tests have gained popularity and an increasing proportion of personnel managers are aware that such studies exist – at least in Germany. While a randomized correspondence test largely avoids the problem of detection, a paired application technique may lead to erroneous results. Because personnel managers discover the experimental character of matched applications, they may want to present themselves as particularly minority friendly. As a result, a study with a paired application design may severely underestimate discrimination. It is also possible that personnel managers randomly answer applications of a paired application design to see how the experiment unfolds. This may lead to nonsensical results. While increased public awareness of the existence of correspondence tests complicates the work of experimenters, it may also have beneficial social side-effects. The fear of being caught discriminating may encourage employers to generally engage in less discriminatory behavior overall in the long run – irrespective of the specific study design.

References

- Adam, Barry D. (1981), 'Stigma and employability: Discrimination by sex and sexual orientation in the Ontario legal profession', *Canadian Review of Sociology and Anthropology*, 18 (2), 216-221.
- Ahmed, Ali and Mats Hammarstedt (2009), 'Detecting discrimination against homosexuals: Evidence from a field experiment on the Internet', *Economica*, 76 (303), 588-597.
- Ahmed, Ali, Linda Andersson and Mats Hammarstedt (2008), 'Are lesbians discriminated in the rental housing market? Evidence from a correspondence testing experiment', *Journal of Housing Economics*, 17 (3), 234-238.
- Ahmed, Ali, Lina Andersson and Mats Hammarstedt (2011), 'Inter- and intra-household earnings differentials among homosexual and heterosexual couples', *British Journal of Industrial Relations*, 49 (S2), 258-278.
- Ahmed, Ali, Lina Andersson and Mats Hammarstedt (2013), 'Are gay men and lesbians discriminated against in the hiring process?' *Southern Economic Journal*, 79 (3), 565-585.
- Antecol, Heather, Anneke Jong and Michael D. Steinberger (2008), 'The sexual orientation wage gap: The role of occupational sorting and human capital', *Industrial and Labor Relations Review*, 61 (4), 518-543.
- Arabsheibani, G. Reza, Alan Marin, Jonathan Wadworth (2005), 'Gay pay in the UK', *Economica*, 72, 333-347.
- Arrow, Kenneth (1973), 'The theory of discrimination', in Orley Ashenfelter and Albert Rees (eds), *Discrimination in Labor Markets*, Princeton: Princeton University Press, pp. 3-33.
- Badgett, M.V. Lee (1995), 'The wage effects of sexual orientation discrimination', *Industrial and Labor Relations Review*, 48 (4), 726-739.
- Badgett, M.V. Lee (2001), *Money, Myths, and Change: The Economic Lives of Lesbians and Gay Men*, Chicago and London: University of Chicago Press.
- Badgett, M.V. Lee, Holning Lau, Brad Sears and Deborah Ho (2007), 'Bias in the workplace: Consistent evidence of sexual orientation and gender identity discrimination', Discussion Paper, Los Angeles, CA: Williams Institute, UCLA School of Law.
- Badgett, M. V. Lee, Gary J. Gates and Natalya C. Maisel (2008), 'Registered domestic partnerships among gay men and lesbians: the role of economic factors', *Review of Economics of the Household*, 6, 327-346.
- Becker, Amy and Dietram Scheufele (2011), 'New voters, new outlook? Predispositions, social networks, and the changing politics of gay civil rights', *Social Science Quarterly*, 92 (2), 324-345.
- Becker, Gary S. (1971), *The Economics of Discrimination*, Chicago and London: University of Chicago Press.
- Becker, Gary S. (1991), *Treatise on the Family*, Cambridge, MA: Harvard University Press.
- Berg, Nathan and Donald Lien (2002), 'Measuring the effect of sexual orientation on income: Evidence of discrimination?', *Contemporary Economic Policy*, 20 (4), 394-414.

- Bertrand, Marianne and Sendhil Mullainathan (2004), 'Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination', *American Economic Review*, 94 (4), 991–1013.
- Black, Dan A., Hoda R. Makar, Seth G. Sanders and Lowell J. Taylor (2003), 'The earnings effects of sexual orientation', *Industrial and Labor Relations Review*, 56 (3), 449-469.
- Black, Dan A., Seth G. Sanders, and Lowell J. Taylor (2007), 'The economics of lesbian and gay families', *Journal of Economic Perspectives*, 21 (2), 53-70.
- Blandford, John M. (2003), 'The nexus of sexual orientation and gender in the determination of earnings', *Industrial and Labor Relations Review*, 56 (4), 622-642.
- Booth, Alison L. and Jeff Frank (2008), 'Marriage, partnership and sexual orientation: a study of British university academics and administrators', *Review of Economics of the Household*, 6, 409-422.
- Butler, Judith (2004), *Undoing Gender*, New York: Routledge.
- Carpenter, Christopher S. (2007), 'Revisiting the income penalty for behaviorally gay men: Evidence from NHANES III', *Labour Economics*, 14 (1), 25-34.
- Carpenter, Christopher (2008), 'Sexual Orientation, Work, and Income in Canada', *Canadian Journal of Economics*, 41 (4), 1239-1261.
- Clain, Suzanne Heller and Karen Leppel (2001), 'An investigation into sexual orientation discrimination as an explanation for wage differences', *Applied Economics*, 33 (1), 37-47.
- Cohen, Philip N. (2002), 'Cohabitation and the declining marriage premium for men', *Work and Occupations*, 29 (3), 346-363.
- Cushing-Daniels, Brendan and Tsz-Ying Yeung (2009), 'Wage penalties and sexual orientation: An update using the general social survey', *Contemporary Economic Policy*, 27 (2), 164-175.
- Destatis, Statistisches Bundesamt (2011), 'Deutschlandweit rund 23000 eingetragene Lebenspartnerschaften', www.destatis.de/DE/PresseService/Presse/Pressemitteilungen/zdw/2011/PD11_025_p002.html (accessed January 2, 2013).
- Duggan, Lisa (2002), 'The New Homonormativity: The Sexual Politics of Neoliberalism', in Russ Castronovo and Dana D. Nelson, *Materializing Democracy: Toward a Revitalized Cultural Politics*, Duke University Press, 175-194.
- Drydakis, Nick (2009), 'Sexual orientation discrimination in the labour market', *Labour Economics*, 16 (4), 364-372.
- Drydakis, Nick (2011), 'Women's Sexual Orientation and Labor Market Outcomes in Greece', *Feminist Economics*, 17 (1), 89-117.
- Drydakis, Nick (2012), 'Sexual orientation discrimination in the Cypriot labour market: Distates or uncertainty?' IZA Working Paper No. 6684.
- Ellis, Jason and Pauline Fox (2001), 'The effect of self-identified sexual orientation on helping behavior in a British sample: Are lesbians and gay men treated differently?', *Journal of Applied Social Psychology*, 31 (6), 1238-1247.
- Ferguson, Ann (2007), 'Gay Marriage: An American and Feminist Dilemma', *Hypathia*, 22 (1), 39-57.

- Firth, Michael (1981), 'Racial discrimination in the British labour market', *Industrial and Labor Relations Review*, 34 (2), 265-272.
- Firth, Michael (1982), 'Sex discrimination in job opportunities for women', *Sex Roles*, 8 (8), 891-901.
- Fix, Michael and Raymond J. Struyk, eds. (1993), *Clear and Convincing Evidence: Measurement of Discrimination in America*, Washington, DC: The Urban Institute.
- Gabriel, Ute and Rainer Banse (2006), 'Helping behavior as a subtle measure of discrimination against lesbians and gay men: German data and a comparison across countries', *Journal of Applied Social Psychology*, 36 (3), 690-707.
- Gallup (2012), 'Marriage', <http://www.gallup.com/poll/117328/marriage.aspx>, (accessed May 12, 2013).
- Harris, Benjamin (2012), 'Less pay for a less stressful day. Sexual orientation and household composition in the labor market', Working Paper.
- Hebl, Michelle R., Jessica B. Foster, Laura M. Mannix and John F. Dovidio (2002), 'Formal and interpersonal discrimination: A field study of bias toward homosexual applicants', *Personality and Social Psychology Bulletin*, 28 (6), 815-825.
- Heckman, James (1998), 'Detecting discrimination', *Journal of Economic Perspectives*, 12 (2), 101-116.
- Heckman, James and Peter Siegelman (1993), 'The Urban Institute audit studies: Their methods and findings', in Michael Fix and Raymond J. Struyk (eds.), *Clear and Convincing Evidence: Measurement of Discrimination in America*, Washington, DC: The Urban Institute, pp. 271-275.
- Hendren, Amy and Hartmut Blank (2009), 'Prejudiced Behavior Toward Lesbians and Gay Men: A Field Experiment on Everyday Helping', *Social Psychology*, 40 (4), 234-238.
- Herek, Gregory M. (2002), 'Gender gaps in public opinion about lesbians and gay men', *Public Opinion Quarterly*, 66 (1), 40-66.
- Hersch, Joni and Leslie Stratton (2000), 'Household specialization and the male marriage wage premium', *Industrial and Labor Relations Review*, 54 (1), 78-94.
- infratest (2013), 'Mehrheit für rechtliche Gleichstellung gleichgeschlechtlicher Lebenspartnerschaften', http://www.infratest-dimap.de/uploads/media/dt1303_bericht.pdf, (accessed May 10, 2013).
- Jepsen, Lisa K. (2007), 'Comparing the earnings of cohabiting lesbians, cohabiting heterosexual women, and married women: Evidence from the 2000 census', *Industrial Relations*, 46 (4), 699-727.
- Jones, David A. (1996), 'Discrimination against same-sex couples in hotel reservation policies', *Journal of Homosexuality*, 31 (1-2), 153-159.
- Jowell, Roger and Patricia Prescott-Clarke (1970), 'Racial discrimination and white-collar workers in Britain', *Race*, 11 (4), 397-417.
- Kaas, Leo and Christian Manger (2012), 'Ethnic Discrimination in Germany's Labour Market: A Field Experiment', *German Economic Review*, 13 (1), 1-20.
- Kenney, Genevieve M. and Douglas A. Wissoker (1994), 'An Analysis of the Correlates of Discrimination Facing Young Hispanic Job-Seekers', *American Economic Review*, 84 (3), 674 - 683.

- Klawitter, Mariëka M. and Victor Flatt (1998), 'The effects of state and local antidiscrimination policies on earnings for gays and lesbians', *Journal of Policy Analysis and Management*, 17 (4), 658-686.
- Klose, Alexander and Kerstin Kühn (2010), *Die Anwendbarkeit von Testing-Verfahren im Rahmen der Beweislast, § 22 Allgemeines Gleichbehandlungsgesetz*, Berlin: Antidiskriminierungsstelle des Bundes.
- LaFrance, Amélie, Casey Warman and Frances Woolley (2009), 'Sexual identity and the marriage premium', Queen's Economics Department Working Paper No. 1219.
- LaMar, Lisa and Mary E. Kite (1998), 'Sex differences in attitudes toward gay men and lesbians: A multidimensional perspective', *Journal of Sex Research*, 35 (2), 189-196.
- Lauster, Nathanael and Adam Easterbrook (2011), 'No room for new families? A field experiment measuring rental discrimination against same-sex couples and single parents', *Social Problems*, 58 (3), 389-409.
- The New York Times (2006), 'Berlin mayor, symbol of openness, has national appeal', 23.09.2006, www.nytimes.com/2006/09/23/world/europe/23wowerit.html?pagewanted=all, (accessed January 4, 2013).
- Oreopoulos, Philip (2011), 'Why do skilled immigrants struggle in the labor market? A field experiment with thirteen thousand résumés', *American Economic Journal: Economic Policy*, 3, 148-171.
- Patacchini, Eleonora, Giuseppe Ragusa and Yves Zenou (2012), 'Unexplored dimensions of discrimination in Europe: Homosexuality and physical appearance', CEPR Working Paper No. 9179.
- Phelps, Edmund S. (1972), 'The statistical theory of racism and sexism', *American Economic Review*, 62 (4), 659-661.
- Plug, Erik and Peter Berkhout (2004), 'Effects of sexual preferences on earnings in the Netherlands', *Journal of Population Economics*, 17 (1), 117-131.
- Riach, Peter A. and Judith Rich (2002), 'Field experiments of discrimination in the market place', *Economic Journal*, 112 (483), F480-F518.
- Der Spiegel (2012), 'Union droht neuer Streit über Homo-Ehe', 07.08.2012, <http://www.spiegel.de/politik/deutschland/cdu-vorstoss-zum-ehgattensplitting-fuer-homo-ehe-erntet-kritik-aus-csu-a-848637.html> (accessed January 4, 2013).
- Statista (2013), Religionszugehörigkeit der Deutschen nach Bundesländern im Jahr 2011, <http://de.statista.com/statistik/daten/studie/201622/umfrage/religionszugehoerigkeit-der-deutschen-nach-bundeslaendern/> (accessed May 10, 2013).
- Stulhofer, Aleksander and Ivan Rimac (2009), 'Determinants of Homonegativity in Europe', *Journal of Sex Research*, 46 (1), 24-32.
- Süddeutsche Zeitung (2012), 'Familienministerin Schröder unterstützt Homo-Ehe', 07.08.2012, <http://www.sueddeutsche.de/politik/gleichstellung-mit-der-ehe-familienministerin-schroeder-unterstuetzt-homosexuelle-lebenspartnerschaften-1.1433831>, (accessed January 4, 2013).
- Tebaldi, Edinaldo and Bruce Elmslie (2006), 'Sexual orientation and labour supply', *Applied Economics*, 38 (5), 549-562.

- Tilcsik, András (2011): Pride and prejudice: Employment discrimination against openly gay men in the United States, *American Journal of Sociology*, 117 (2), 586-626.
- Van Hoye, Greet and Filip Lievens (2003), 'The effects of sexual orientation on hireability ratings: An experimental study', *Journal of Business and Psychology*, 18 (1), 15-30.
- Walters, Andrew S. and Maria-Cristina Curran (1996), 'Excuse me, sir? May I help you and your boyfriend? Salespersons' differential treatment of homosexual and straight customers', *Journal of Homosexuality*, 31 (1-2), 135-152.
- Ward, R. (1969), 'A note on the testing of discrimination', *Race*, 11, 218-233.
- Weichselbaumer, Doris (2003), 'Sexual orientation discrimination in hiring', *Labour Economics*, 10 (6), 629-642.
- Weichselbaumer, Doris (2004), 'Is it sex or personality? The impact of sex-stereotypes on discrimination in applicant selection', *Eastern Economic Journal*, 30 (2), 159-186.
- Weichselbaumer, Doris (forthcoming), 'Discrimination in gay and lesbian lives', in Deb Figart and Tonia Warnecke (eds), *Handbook of Research on Gender and Economic Life*, Edward Elgar.
- Weichselbaumer, Doris and Rudolf Winter-Ebmer (2007), 'International gender wage gaps', *Economic Policy*, 22 (50), 235-287
- World Value Survey (various years), <http://www.worldvaluessurvey.org/>, (accessed December 22, 2013).
- Zweimüller, Martina, Rudolf Winter-Ebmer and Doris Weichselbaumer (2008), 'Market Orientation and Gender Wage Gaps: An International Study', *Kyklos*, 61(4), 2008, 615-635.

Figures and Tables

Figure 1: Callbacks by identity, Munich

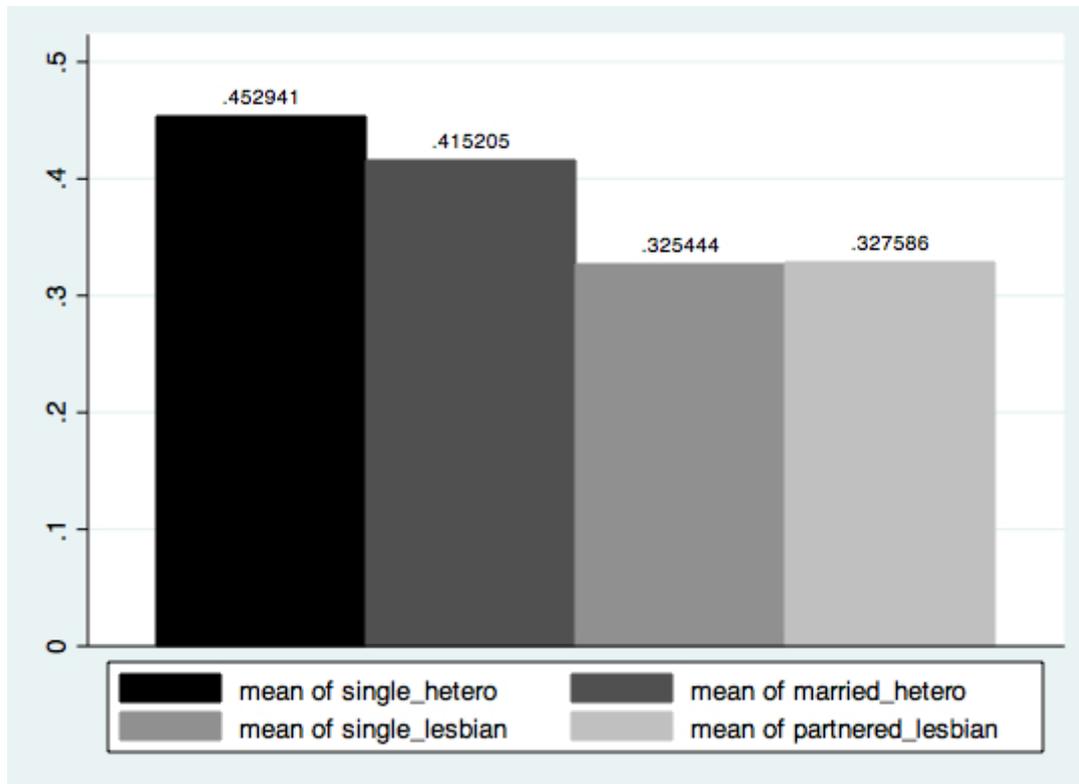


Figure 2: Callbacks by identity, Berlin

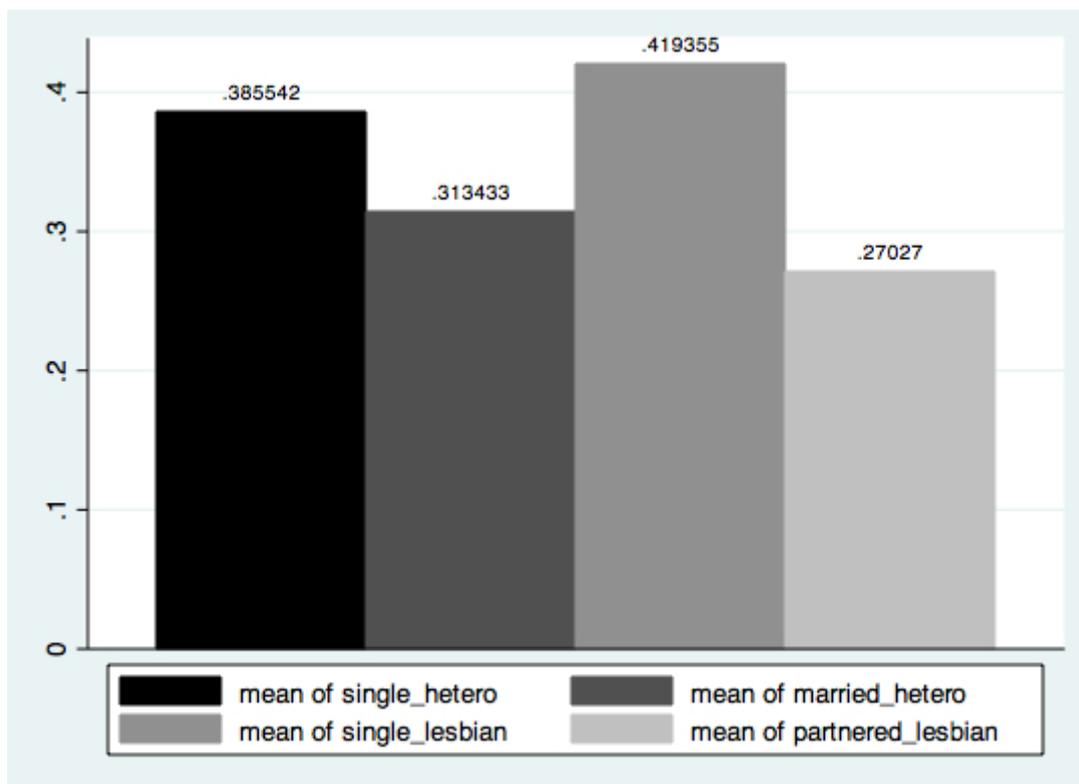


Figure 3: Callbacks by identity – pairwise application, Berlin

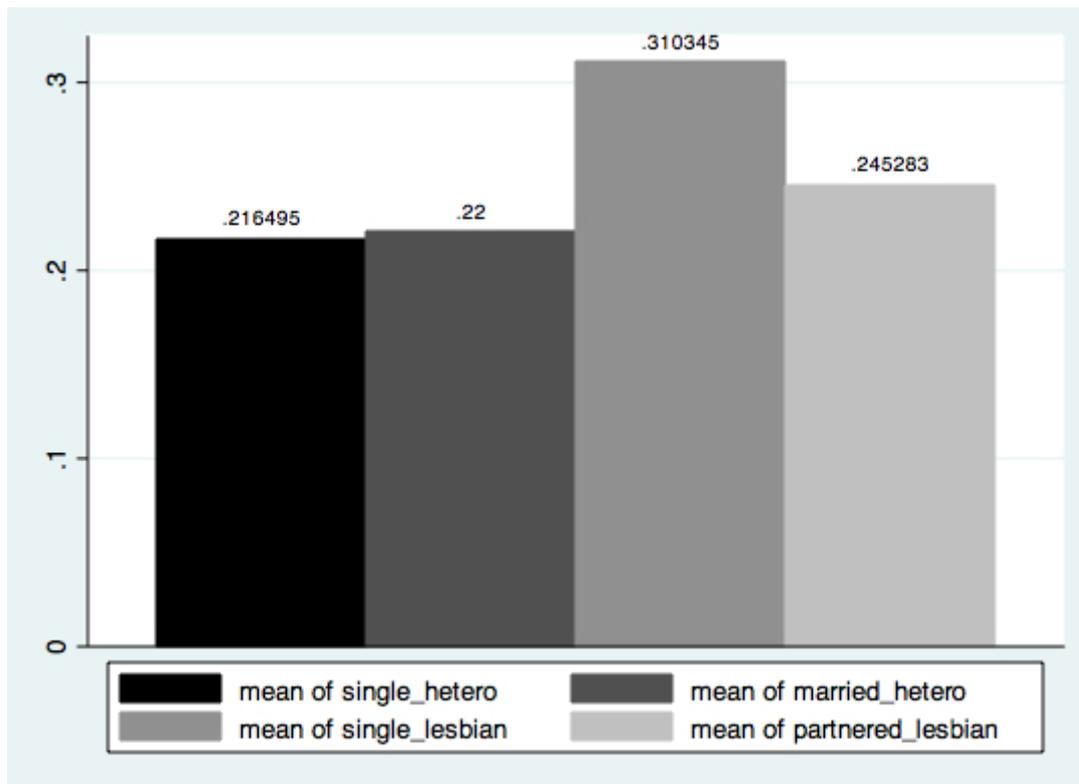


Table 1: Probability of a callback, Munich (marginal effects)

	1	2	3	4	5
Married heterosexual	-0.024 (-0.47)	-0.023 (-0.44)	-0.030 (-0.57)	-0.031 (-0.58)	-0.030 (-0.47)
Single lesbian	-0.117** (-2.28)	-0.118** (-2.28)	-0.118** (-2.26)	-0.111** (-2.10)	-0.150** (-2.33)
Partnered lesbian	-0.110** (-2.14)	-0.115** (-2.23)	-0.123** (-2.35)	-0.121** (-2.27)	-0.136** (-2.06)
Accountant		0.135*** (2.95)	0.120*** (2.59)	0.133*** (2.82)	0.135*** (2.84)
Firm size		-0.042 (-1.31)	-0.050 (-1.55)	-0.024 (-0.71)	-0.026 (-0.75)
Firm's action radius		0.018 (0.70)	0.024 (0.91)	0.023 (0.84)	0.024 (0.88)
Job requirements		0.010 (0.49)	0.011 (0.52)	0.015 (0.69)	-0.004 (-0.10)
Job requirements*married					-0.003 (-0.04)
Job requirements*single lesbian					0.065 (1.08)
Job requirements*partnered lesbian					0.024 (0.40)
Trade				-0.056 (-0.84)	-0.061 (-0.91)
Production				-0.119 (-1.45)	-0.121 (-1.47)
<u>Services</u>					
Creative industry				0.023 (0.31)	0.023 (0.30)
Social services, health, education				0.024 (0.27)	0.014 (0.16)
Real estate services				-0.000 (-0.00)	-0.003 (-0.04)
Information and communication				0.046 (0.58)	0.048 (0.61)
Legal services				0.192* (1.95)	0.187* (1.89)
Business and tax consultancy				0.138* (1.85)	0.133* (1.78)
Financial services				-0.139 (-1.51)	-0.140 (-1.52)
Time controls	No	No	Yes	Yes	Yes
Observations	682	682	682	682	682
Pseudo R2	0.01	0.02	0.03	0.06	0.06

Notes: z-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Reference category for identity: single, for occupation: secretary/clerk, for industry: other services

Table 2: Probability of a callback, Berlin (marginal effects)

	1	2	3	4	5
Married heterosexual	-0.049 (-0.63)	-0.058 (-0.75)	-0.074 (-0.95)	-0.122 (-1.56)	-0.173* (-1.83)
Single lesbian	0.040 (0.59)	0.048 (0.71)	0.032 (0.45)	-0.006 (-0.08)	-0.058 (-0.62)
Partnered lesbian	-0.108 (-1.59)	-0.092 (-1.31)	-0.064 (-0.87)	-0.088 (-1.19)	-0.146 (-1.48)
Accountant		0.140*** (2.59)	0.139** (2.54)	0.118** (2.08)	0.119** (2.09)
Firm size		-0.027 (-0.60)	-0.032 (-0.71)	-0.012 (-0.26)	-0.011 (-0.24)
Firm's action radius		0.092*** (2.62)	0.095*** (2.70)	0.098*** (2.64)	0.100*** (2.69)
Job requirements		-0.050 (-1.62)	-0.046 (-1.49)	-0.017 (-0.52)	-0.077 (-1.19)
Job requirements*married					0.082 (0.91)
Job requirements*single lesbian					0.073 (0.87)
Job requirements*partnered lesbian					0.079 (0.90)
Trade				0.014 (0.15)	0.017 (0.19)
Production				-0.281*** (-2.83)	-0.275*** (-2.71)
<u>Services</u>					
Creative industry				-0.042 (-0.46)	-0.039 (-0.42)
Social services, health, education				-0.121 (-1.15)	-0.120 (-1.13)
Real estate services				0.111 (1.13)	0.112 (1.13)
Information and communication				0.017 (0.18)	0.014 (0.15)
Legal services				0.323* (1.72)	0.336* (1.78)
Business and tax consultancy				0.099 (1.12)	0.112 (1.24)
Financial services				0.079 (0.51)	0.080 (0.52)
Time controls	No	No	Yes	Yes	Yes
Observations	384	384	384	383	383
Pseudo R2	0.01	0.04	0.05	0.09	0.09

Notes: z-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Reference category for identity: single, for occupation: secretary/clerk, for industry: other services

Table 3: Probability of a callback: randomized versus paired applications, Berlin (marginal effects)

	1	2	3	4	5	6	7
Married heterosexual	-0.028 (-0.57)	0.003 (0.05)	-0.045 (-0.63)	-0.060 (-0.82)	-0.074 (-1.00)	-0.103 (-1.36)	-0.155* (-1.86)
Single lesbian	0.106** (2.14)	0.113** (2.18)	0.038 (0.59)	0.036 (0.55)	0.022 (0.32)	-0.001 (-0.01)	-0.059 (-0.73)
Partnered lesbian	-0.029 (-0.63)	-0.013 (-0.25)	-0.100 (-1.58)	-0.091 (-1.41)	-0.066 (-0.98)	-0.068 (-0.99)	-0.149* (-1.89)
Accountant				0.158*** (3.97)	0.159*** (3.98)	0.160*** (3.73)	0.162*** (3.76)
Firm size				-0.048 (-1.37)	-0.054 (-1.51)	-0.047 (-1.30)	-0.048 (-1.31)
Firm's action radius				0.069** (2.37)	0.071** (2.42)	0.075** (2.39)	0.076** (2.40)
Job requirements				-0.060** (-2.15)	-0.054* (-1.93)	-0.045 (-1.50)	-0.115** (-2.03)
Job require*married							0.079 (1.15)
Job require*single lesbian							0.081 (1.20)
Job requ*partnered lesbian							0.119* (1.85)
Paired applications			-0.160** (-2.33)	-0.198*** (-2.89)	-0.223* (-1.92)	-0.266** (-2.34)	-0.290** (-2.55)
Paired app*married			0.069 (0.74)	0.092 (0.96)	0.113 (1.12)	0.140 (1.34)	0.173 (1.61)
Paired app*single lesbian			0.065 (0.48)	0.071 (0.52)	0.098 (0.69)	0.139 (0.97)	0.136 (0.95)
Paired app*partnered lesbian			0.155 (1.28)	0.170 (1.36)	0.148 (1.14)	0.129 (1.00)	0.152 (1.18)
Trade						0.007 (0.10)	0.005 (0.07)
Production						-0.170 (-1.52)	-0.167 (-1.46)
<u>Services</u>							
Creative industry						0.001 (0.01)	-0.002 (-0.03)
Social services, health, education						-0.103 (-1.30)	-0.106 (-1.36)
Real estate services						0.070 (0.79)	0.065 (0.72)
Information and communication						0.021 (0.27)	0.014 (0.17)
Legal services						0.294** (2.11)	0.299** (2.11)
Business and tax consultancy						-0.043	-0.037

						(-0.61)	(-0.52)
Financial services						-0.078	-0.077
						(-0.65)	(-0.64)
Template Richter	-0.066	0.001	-0.008	-0.012	-0.014	-0.014	0.018
	(-1.19)	(0.01)	(-0.10)	(-0.14)	(-0.16)	(-0.16)	(0.21)
Template Bauer	-0.079	-0.020	-0.028	-0.031	-0.021	-0.021	-0.019
	(-1.34)	(-0.31)	(-0.43)	(-0.47)	(-0.31)	(-0.31)	(-0.28)
Time dummies	No	No	No	No	Yes	Yes	Yes
Observations	663	663	663	663	663	662	662
Pseudo R2	0.01	0.01	0.02	0.05	0.06	0.08	0.08

Notes: z-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Reference category for identity: single, for occupation: secretary/clerk, for industry: other services, for Templates: Schulz. Standard errors are corrected for clustering of the observations at the firm level.