OECD Social, Employment and Migration Working Papers
No. 198

# LGBTI in OECD Countries: A Review

**Marie-Anne Valfort**

https://dx.doi.org/10.1787/d5d49711-en

OECD

Organisation for Economic Co-operation and Development

**DELSA/ELSA/WD/SEM(2017)4**

**For Official Use** **English - Or. English**

**20 June 2017**

**DIRECTORATE FOR EMPLOYMENT, LABOUR AND SOCIAL AFFAIRS**
**EMPLOYMENT, LABOUR AND SOCIAL AFFAIRS COMMITTEE**

# LGBTI IN OECD COUNTRIES: A REVIEW, WORKING PAPER No. 198

**Marie-Anne Valfort**

*JEL Classification: D10, I10, I20, I30, J12, J13, J15, J16, J70.*

*Keywords: LGBTI, lesbian, gay, bisexual, transgender, intersex, discrimination, family, education, labour market, housing market, poverty, health, well-being*

*Marie-Anne Valfort is a research professor at the Paris School of Economics (UMR PJSE) and at Paris 1 Pantheon Sorbonne University (Department of Economics), currently on secondment in the Social Policy Division of the Directorate for Employment, Labour and Social Affairs.*

*See the LGBTI inclusiveness project webpage via http://oe.cd/LGBTI.*

*Authorised for publication by Stefano Scarpetta, Director for Employment, Labour and Social Affairs*

For further information contact:
Stephane Carcillo (Stephane.Carcillo@oecd.org), +33 (1) 45 24 80 31, or
Marie-Anne Valfort (marie-anne.valfort@oecd.org) +33 (1) 45 24 98 65

**JT03416451**

***This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.***

# *OECD SOCIAL, EMPLOYMENT AND MIGRATION WORKING PAPERS*

www.oecd.org/els/workingpapers

OECD Working Papers should not be reported as representing the official views of the OECD or of its member countries. The opinions expressed and arguments employed are those of the author(s).

Working Papers describe preliminary results or research in progress by the author(s) and are published to stimulate discussion on a broad range of issues on which the OECD works. Comments on Working Papers are welcomed, and may be sent to els.contact@oecd.org.

This series is designed to make available to a wider readership selected labour market, social policy and migration studies prepared for use within the OECD. Authorship is usually collective, but principal writers are named. The papers are generally available only in their original language – English or French – with a summary in the other.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Note on Cyprus:

*Note by Turkey:*

The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

*Note by all the European Union Member States of the OECD and the European Union:*

The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Note on Israeli Statistical Data:

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

© OECD 2017

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for commercial use and translation rights should be submitted to rights@oecd.org.

# *Acknowledgements*

I am strongly indebted to Stéphane Carcillo, Sebastian Königs, Mark Pearson, Monika Queisser and Stefano Scarpetta for their insightful comments. I am also very grateful to Willem Adema, Ruben Avila, Lee Badgett, Karoline Börner, Christopher S. Carpenter, Morgan Carpenter, Christophe Cornu, Bertrand Dagallier, Alexis Dewaele, Rodrigo Fernandez, Valérie Frey, Gary J. Gates, Katja Gerstmann, Michael Gunzburger, Katrin Hugendubel, Peter Kraus, Maxime Ladaique, Wester Meijdam, Isabel Millan Valdes, Marco Mira d'Ercole, Fabrice Murtin, Sami Nevala, Euan Platt, Emilie Quenensse, Georg Reibmayr, Massimo Serpieri, Iris Smalbrugge, Lene Swetzer, Olivier Thévenon, Miriam van der Have, Dennis van der Veur, Hida Viloria, and participants at the 17th Roundtable of the European Governmental LGBTI Focal Point Network hosted by the Council of Europe (November 2016), at the OECD Working Party on Social Policy (November 2016), and at the Panel Discussion on "Why LGBT inclusivity matters" hosted by the Netherlands and U.S. Delegations to the OECD (December 2016) for their suggestions and constructive feedbacks. My warm thanks finally go to Bérengère Patault for outstanding research assistance. This study has received the funding of the Netherlands, U.S., Austria and Denmark. It is part of the OECD-wide project on "diversity".

# *Abstract*

This paper presents an overview of the socio-economic situation of lesbians, gay men, bisexuals, transgender and intersex people (LGBTI), primarily in OECD countries. After investigating the size of this population, the paper zooms in on attitudes toward LGBTI, LGBTI rights and perceived discrimination among LGBTI. It goes on to discuss the empirical strategies used to identify whether LGBTI fare worse than non-LGBTI and provides a systematic review of survey-based and experimental evidence on such an "LGBTI penalty" and its causes. This exploration points to substantial hurdles for LGBTI. In particular, (i) low legal recognition of same-sex couples hampers partnership stability and children's well-being; (ii) LGBTI are bullied at school and suffer academically; (iii) LGBTI face hiring and wage discrimination; (iv) LGBTI show higher rates of physical and mental health problems, in particular due to social rejection. The paper concludes by reviewing anti-discrimination policies and defining critical avenues for future research.

# *Glossary*

Many of these glossary's entries have been adapted from IGLYO (2013), UNESCO (2016) and ILGA Europe's online glossary.[1]

**Asexual:** A person who lacks sexual attraction to anyone, or shows low or no interest in or desire for sexual activity.

**Bisexual** (UNESCO (2016) and ILGA Europe's online glossary): A person who is sexually and/or emotionally attracted to both men and women.

**Cisgender**: A person whose gender identity matches his/her sex at birth. Cisgender has its origin in the Latin-derived prefix *cis-*, meaning "on this side of", i.e. the opposite of *trans-*, meaning "across from" or "on the other side of".

**Civil union/partnership**: See "Registered partnership".

**Discrimination** (UNESCO (2016)): Exclusion or unfair treatment of a particular person or group of people based on race, colour, ethnicity, sex, gender, age, religion, nationality, ethnicity (culture), language, political opinions, socio-economic status, poverty, disability, sexual orientation, gender identity, sex characteristics or other personal traits. Victims of discrimination are prevented from enjoying the same rights and opportunities as other people. Discrimination goes against the basic principle of human rights: that all people are equal in dignity and entitled to the same fundamental rights.

**Gay** (ILGA Europe's online glossary): A man who is sexually and/or emotionally attracted to men. Gay is sometimes also used as a blanket term to cover lesbian women and bisexual people as well as gay men.

**Gender expression** (UNESCO (2016)): How a person expresses his/her own gender to the world, such as through names, clothes, how he/she walks, speaks, communicate, etc.

**Gender identity** (UNESCO (2016)): A person's deeply felt internal and individual experience of gender, which may or may not correspond with his/her sex at birth.

**Gender minority:** An umbrella term to describe transgender people.

**Gender non-conforming** (UNESCO(2016)): A person who does not conform to either of the binary gender definitions of male or female, or whose gender expression may differ from standard gender norms.

**Hate crime** (ILGA Europe's online glossary): Offences that are motivated by hate or by bias against a particular group of people. This could be based on gender, gender identity, sexual orientation, ethnicity, religion, age or disability.

**Heteronormativity** (ILGA Europe's online glossary): Cultural and social practices where men and women are led to believe that heterosexuality is the only conceivable sexuality. It implies that heterosexuality is the only way of being "normal".

[1] See http://www.ilga-europe.org/resources/glossary. ILGA stands for the International Lesbian, Gay, Bisexual, Trans and Intersex Association.

**Heterosexual**: A person who is sexually and/or emotionally attracted to people of the opposite sex.

**Homophobia** (IGLYO (2013)): Fear of, discrimination against, or hatred of lesbian and gay people (also used to include bisexual people[2]).

**Homosexual**: A person who is sexually and/or emotionally attracted to people of the same sex.

**Intersex** (UNESCO(2016)): People who are born with sex characteristics (including genitals, gonads, hormonal patterns and/or chromosomal patterns) that do not fit typical binary notions of male or female bodies. Intersex is an umbrella term used to describe a wide range of natural bodily variations. In some cases, intersex traits are visible at birth, while, in others, they are not apparent until puberty. Some hormonal/ chromosomal intersex variations may not be physically apparent at all. Being intersex relates to biological sex characteristics and is distinct from a person's sexual orientation or gender identity. An intersex person may be straight, gay, lesbian, bisexual or asexual, and may identify as female, male, both or neither.

**Intersexphobia (or interphobia):** Fear of, discrimination against, or hatred of intersex people. The word "intersexphobia" was coined by the Organisation Intersex International (OII), while the term "interphobia" was introduced by Cary Gabriel Costello, an intersex trans male professor of sociology at the University of Wisconsin, Milwaukee.

**Lesbian** (ILGA Europe's online glossary): A woman who is sexually and/or emotionally attracted to women.

**LGB:** Acronym for lesbian, gay, and bisexual people.

**LGBT:** Acronym for lesbian, gay, bisexual and trans people. This group is also referred to as "queer".[3]

**LGBTI:** Acronym for lesbian, gay, bisexual, trans and intersex people. Since one of the tenets of LGBT activism is to challenge heteronormative social norms concerning sex, gender and sexuality, it has become popular to add the letter "I" to the LGBT initialism, i.e. to include intersex people.

**Registered partnership** (ILGA Europe's online glossary): A legal recognition of relationships, but not always with the same rights and/or benefits as marriage (synonymous with a civil union or civil partnership).

**Sexual minority:** An umbrella term to describe people whose sex characteristics do not fit typical binary notions of male or female bodies, or whose sexual orientation differs from that of the majority. This term is primarily used to refer to intersex people, as well as lesbians, gay men and bisexuals. But it can also characterize asexual individuals who experience no particular sexual orientation.

**Sexual orientation** (UNESCO(2016)): A person's capacity for profound emotional and sexual attraction to, and intimate and sexual relations with opposite-sex individuals, same-sex individuals, or both opposite- and same-sex individuals.[4]

[2] To refer to the specific fear of, discrimination againt, or hatred of bisexual people, one usually relies on the term "biphobia".

[3] The term "queer" may also be used to designate those who challenge heteronormative social norms concerning gender and sexuality.

**Straight**: See "Heterosexual".

**Transgender** (UNESCO(2016)): A person whose gender identity differs from his/her sex at birth. Transgender people may be male-to-female (female identity and appearance – see "Transgender woman") or female-to-male (male identity and appearance – see "Transgender man"). Transgender people may be heterosexual, homosexual or bisexual.

**Transgender man/Trans man**: A transgender person who was assigned female at birth but whose gender identity is that of a man.

**Transgender woman/Trans woman**: A transgender person who was assigned male at birth but whose gender identity is that of a woman.

**Transphobia** (IGLYO (2013) and UNESCO(2016)): Fear of, discrimination against, or hatred of transgender people, including transsexuals and transvestites.

**Transsexual** (UNESCO(2016)): A transgender person who is in the process of, or has undertaken, treatment (which may include surgery and hormonal treatment) to make his/her body congruent with his/her preferred gender.

**Transvestite** (UNESCO(2016)): A person who regularly, although not all the time, wears clothes that are mostly associated with another gender than the one associated to his/her sex at birth.

[4] In this review, sexual orientation is therefore defined with regard to sex, not age. In other words, sexual orientation never refers to paedophilia (in which an adult or older adolescent experiences a primary or exclusive sexual attraction to prepubescent children), although there is debate among researchers and medical practitioners on whether paedophilia should be viewed as a sexual orientation (Seto (2012)).

# *Executive summary*

This paper presents an overview of the socio-economic situation of lesbians, gay men, bisexuals, transgender and intersex people (LGBTI), primarily in OECD countries. It addresses whether LGBTI fare worse than non-LGBTI and reveals that sexual and gender minorities indeed show poorer outcomes in their family life, education, labour market and health, in particular due to discrimination.

This review sets off by investigating the size of the LGBTI population (Section 2). Only few population-based surveys include direct questions on sexual orientation, and even fewer ask respondents about their gender identity. For intersex people, estimates stem from research articles published in medical journals since no population-based survey allows identification of this group. Tentative but conservative measures suggest that LGBTI stand for a sizeable minority. They represent approximately 4.5% of the total population in the US, a proportion that can be broken down as follows among LGBTI subgroups (bearing in mind that these subgroups partly overlap): 3.5% for lesbians, gay men and bisexuals if one relies on sexual self-identification known to yield lower estimates than sexual behaviour or attraction (Sections 2.1 and 2.3), 0.6% for transgender people (Sections 2.2 and 2.3) and 1.1% for intersex people (Section 2.4).

Section 3 summarises attitudes toward LGBTI: To what extent are LGBTI accepted by the general public? Do sexual and gender minorities benefit from LGBTI-inclusive laws? Do LGBTI feel discriminated against?

- Despite a shift toward greater acceptance of homosexuality in most OECD countries, Section 3.1 reveals that homophobia remains widespread, with an average score of only 5 on a scale from 1 to 10 (where 1 means that homosexuality is never justifiable and 10 means that it is always justifiable). Similarly, although they are becoming more positive, attitudes toward transgender people remain negative, with only a minority of respondents showing support to a trans child. Acceptance of intersex people is greater, with 70% of interviewees who report opposing genital surgery on intersex children.
- Section 3.2 explores whether, indeed, homosexual, transgender and intersex people benefit from legal recognition. OECD countries fare relatively well in terms of an augmented "Global Index on Legal Recognition of Homosexual Orientation", with an average score of 7 on a 0 to 10 scale. But their performance on a "Transgender Rights Index" is only halfway of what it could be, with a score of 2.5 on a 0 to 5 scale. Moreover, OECD countries fall short in terms of achieving basic legal requirements for the recognition of intersex people. None of them prohibit medically unnecessary sex assignment surgery on the sex characteristics of a minor (until the person can provide informed consent), despite the fact that a majority of their population appear ready for this step. And only three OECD countries allow for reporting one's gender or sex as "indeterminate" on birth certificates or ID documents and/or have enacted antidiscrimination laws that explicitly protect intersex people.
- Overall, it is a long way before LGBTI meet full-fledged social and legal acceptance. It therefore comes as no surprise that a large majority report widespread discrimination, based on their sexual orientation, gender identity or intersex status (Section 3.3).

In this context, LGBTI may suffer from a substantial well-being deficit. Section 4 first clarifies how anti-LGBTI discrimination can negatively affect dimensions critical for their welfare: family life, education, economic outcomes and health (Section 4.1). It then discusses the empirical strategies that researchers have been implementing to identify a potential "LGBTI penalty" (i.e. whether LGBTI fare worse than non-LGBTI) and its causes. Sections 4.2 explores the advantages and limits of survey-based data, while Section 4.3 examines the pros and cons of experimental data.

- Section 4.2 demonstrates that the standard limitations of relying on survey-based data are compounded when they are used to estimate a socio-economic gap between LGBTI and non-LGBTI. First, disclosure of sexual orientation, gender identity or intersex status by LGBTI to their social environment is not a given, meaning that these characteristics might be observed by researchers but not necessarily by others. Moreover, only few population-based surveys collect direct information on sexual and gender minority status. The other surveys measure LGBTI status in an indirect manner, namely based on the sex of the respondent's partner. Put differently, most population-based surveys only allow for comparing how partnered homosexuals fare compared to their heterosexual counterparts, which generates a wide range of additional biases.
- Direct measures of sexual and gender minority status alleviate some but not all of these shortcomings. In this setting, experimental data constitute a better solution for anyone willing to rigorously identify a potential LGBTI penalty and its causes (Section 4.3). However, they are no magic bullet either. Survey-based data offer the significant advantage of investigating how LGBTI fare relative to non-LGBTI for a wide range of outcomes. By contrast, only outcomes compatible with relying on fictitious subjects (e.g. fictitious applicants for a job, an apartment for rent, a service, a piece of information, etc.) can be investigated with experimental data.

Based on a systematic review of survey-based and experimental evidence, Section 5 investigates whether LGBTI are penalized in their socio-economic lives and why.

- Section 5.1 deals with LGBTI family life. It reveals that barriers to the legal recognition of same-sex couples negatively affect their stability and children's well-being. The well-being of children living with same-sex couples is further undermined because they also face discrimination for having same-sex parents in the first place. These effects are partially compensated by same-sex parents' greater involvement in their children's education, in a context where they are more likely to choose to be parents compared to their heterosexual counterparts. Discrimination against transgender and intersex people also has the potential to seriously hamper their capacity to thrive in their family life. Access of transgender people to fertility preservation options before they transition is critical if they want to have children. Yet, this access is very dependent on the level of social acceptance of sexual and gender minorities: if clinicians believe that transpeople are unfit for parenting, they won't offer fertility preservation options to transpatients. Moreover, genital surgeries on intersex people can have deleterious effects on their fertility and ability to engage in stable relationships, thereby making reliance on non-consensual and medically unnecessary sex assignment surgery even more problematic.
- Section 5.2 analyzes LGBTI educational outcomes. It suggests that pervasive stigmatization of sexual and gender minorities at school constitutes an important barrier to their educational attainment. Experiencing same-sex attraction or

sexuality in adolescence and/or early adulthood is associated with lower educational achievement. Moreover, the probability for transgender people to hold a college degree or more is only half that of their cisgender counterparts in the US. And many intersex students drop out during years of pubertal development when their intersex status might become more visible.

- LGBTI economic outcomes are explored in Section 5.3. Survey-based data provide biased evidence on the performance of gay men and lesbians in the labour market: they reveal that gay men are less likely to be employed, work fewer hours and earn less than heterosexual men, while the reverse occurs when lesbians are compared with heterosexual women. These findings reflect a still prevalent "household specialization bias" among heterosexual households that hardly exists among homosexual households. In this setting, the average partnered heterosexual man is more involved in the labour market than the average partnered gay man, while the average partnered heterosexual woman is less involved in this market than the average partnered lesbian. To avoid this bias, one should rely on survey data that include direct information on sexual orientation in order to compare the labour market outcomes of *single* homosexuals and heterosexuals. Although this strategy has only rarely been implemented to date due to data limitations, it points to a penalty in employment and labour earnings for both gay men and lesbians. These results are confirmed by field experiments. On average, homosexual applicants are only half as likely to be invited to a job interview by the recruiter as their heterosexual counterparts. And they are offered wages that are up to 10% lower. Thus far, no field experiment has tested for discrimination against bisexual and intersex applicants, and only one for discrimination against (male-to-female) transgender people. But survey-based results for these subgroups are more clear-cut. They point to a substantial employment and earnings penalty for bisexual, transgender and intersex people. Consequently, LGBTI display significantly higher poverty rates than non-LGBTI, a result that may also partly derive from proven anti-LGBTI discrimination in the housing market.
- Section 5.4 explores LGBTI health outcomes. It points to higher rates of physical and mental health problems among sexual and gender minorities, with bisexual, transgender and intersex people showing the strongest health penalty. This health penalty at least partly flows from a "minority stress" effect whereby LGBTI perception of being socially rejected works as a stressor. As an illustration, LGBTI are more likely to have considered/attempted suicide than non-LGBTI. But this gap has decreased at a greater rate in US states that adopted same-sex marriage than in others (a trend that was not apparent before the implementation of LGBTI-inclusive policies). Survey-based data support additional channels that likely contribute to the LGBTI health penalty. In particular, private employers typically do not treat employees in committed same-sex relationships similarly to employees in opposite-sex marriages regarding employer-sponsored health insurance, thereby leading gay men and lesbians to be at significantly greater risk of being uninsured than their heterosexual counterparts. Additionally, LGBTI higher HIV prevalence rate might partly stem from their discrimination in the labour market: past experiences of discrimination in this area are positively correlated with the decision to become sex workers among transgender people (who are indeed overrepresented in this population).
- All in all, evidence confirms that anti-LGBTI discrimination is detrimental to dimensions critical for LGBTI well-being: their family life, education, economic outcomes and health. In this setting, it comes as no surprise that LGBTI report



For Official Use

lower levels of happiness and life satisfaction (Section 5.5). As an illustration, just 18% of LGBT adults in the US describe themselves as "very happy", compared with 30% of adults in the general public.

Section 6 reviews the anti-discrimination policies that may mitigate the LGBTI penalty.

- Section 6.1 investigates the efficiency of laws that ban discrimination against sexual and gender minorities. Although these laws seem effective at protecting LGBTI once they have entered the market (e.g. the labour market, the housing market, etc.), evidence is more mixed on their capacity to help LGBTI enter those markets in the first place. Confirming discrimination at the entry stage indeed constitutes a challenge unless discrimination is blatant. Moreover, anti-discrimination laws can happen to undermine LGBTI chances of being hired or chosen as tenants due to employers' or landlords' fear of litigation if they terminate their contract. Anti-discrimination laws should thus be complemented by other approaches. Given that anti-LGBTI discrimination seems to be largely driven by preconceived unfavourable judgments (see Section 5.3), prejudice-reducing interventions are a necessary supplemental policy.
- Section 6.2 discusses the two main approaches that could theoretically help undermine homo-, trans- and intersexphobia: (i) the enactment of LGBTI-inclusive laws (beyond banning discrimination against sexual and gender minorities) and (ii) "diversity training", either among the general public through mass media and/or among a subgroup (e.g. students at junior and senior high schools, employers or workers). Although evidence is still scarce, it suggests a powerful impact of such policies.

Section 7 concludes and defines the following critical avenues for future research:

- better identifying LGBTI in *nationwide* surveys, through *direct* questions on sexual orientation, gender identity and intersex status, as well as survey tools offering enough privacy and anonymity to avoid the underreporting of sexual and gender minority status
- improving the measurement of anti-LGBTI discrimination in different markets and the identification of its cause(s), ideally through *a standardized cross-country correspondence study*
- pinpointing the *legal provisions conducive to direct and indirect anti-LGBTI discrimination* (such as legal barriers to same-sex marriage) and quantifying their economic cost for LGBTI
- testing for *anti-LGBTI discrimination in access to healthcare, including long-term care for the elderly*
- evaluating the impact of policies aiming to reduce anti-LGBTI prejudice.

# *Résumé*

Ce document présente un état des lieux de la situation socioéconomique des personnes lesbiennes, gays, bisexuelles, transgenres et intersexuées (LGBTI), principalement dans les pays de l'OCDE. Il cherche à déterminer si les personnes LGBTI sont pénalisées par rapport au reste de la population et révèle que cette minorité rencontre effectivement plus de difficultés sur le plan de la vie familiale, de l'éducation, du travail et de la santé, notamment à cause de la discrimination dont elle est victime.

Cette étude commence par évaluer la taille de la population LGBTI (section 2). Rares sont les enquêtes représentatives qui posent des questions directes sur l'orientation sexuelle, et plus rares encore celles qui interrogent les sondés sur leur identité de genre. S'agissant des personnes intersexuées, les estimations proviennent d'articles scientifiques publiés dans des revues médicales, car aucune enquête de population n'autorise l'identification de ce groupe. Selon des estimations provisoires mais prudentes, les personnes LGBTI constituent une minorité non négligeable de la population. Ainsi, elles représentent environ 4.5 % de la population totale des États-Unis, un pourcentage qui se décompose de la manière suivante en sous-groupes (certains sous-groupes se chevauchant en partie) : 3.5 % pour les personnes lesbiennes, gays et bisexuelles si l'on s'appuie sur l'auto-identification sexuelle connue pour fournir des estimations plus faibles que l'attirance ou le comportement sexuel (sections 2.1 et 2.3), 0.6 % pour les personnes transgenres (sections 2.2 et 2.3) et 1.1 % pour les personnes intersexuées (section 2.4).

La section 3 propose une synthèse des attitudes à l'égard des personnes LGBTI : dans quelle mesure ces personnes sont-elles acceptées par le reste de la population ? Les minorités sexuelles et de genre bénéficient-elles de lois inclusives? Les personnes LGBTI se sentent-elles victimes de discrimination ?

- Malgré une tendance à une meilleure acceptation des homosexuels dans la plupart des pays de l'OCDE, la section 3.1 révèle que l'homophobie reste répandue, avec un score moyen de seulement 5 sur une échelle de 1 à 10 (où 1 signifie que l'homosexualité n'est jamais justifiable et 10 signifie qu'elle est toujours justifiable). De même, en dépit de progrès, les attitudes envers les personnes transgenres restent négatives : une minorité seulement des personnes interrogées apporteraient leur soutien à un enfant transgenre. Les personnes intersexuées sont mieux acceptées : 70 % des personnes interrogées déclarent être opposées à une intervention chirurgicale sur les organes génitaux des enfants intersexués.
- La section 3.2 analyse si les personnes homosexuelles, transgenres et intersexuées bénéficient d'une reconnaissance juridique. Les pays de l'OCDE affichent des résultats relativement bons concernant l'« Indice global de reconnaissance juridique de l'orientation homosexuelle », avec un score moyen de 7 sur une échelle de 0 à 10. Néanmoins, leur performance concernant un « Indice des droits des personnes transgenres » les place à mi-chemin seulement du niveau maximal, avec un score de 2.5 sur une échelle de 0 à 5. En outre, les pays de l'OCDE ne remplissent pas les conditions juridiques préalables requises pour la reconnaissance des personnes intersexuées. Aucun n'interdit les interventions chirurgicales sur les organes génitaux des mineurs intersexués lorsqu'elles ne sont

pas médicalement nécessaires, alors même que la majorité de leur population semble être favorable à une telle interdiction. Par ailleurs, seulement trois pays de l'OCDE autorisent l'apposition de la mention « indéterminé » pour le genre ou le sexe sur les certificats de naissance ou les pièces d'identité et/ou ont voté des lois anti-discrimination qui protègent explicitement les personnes intersexuées.

- Dans l'ensemble, il reste un long chemin à parcourir avant que les personnes LGBTI soient pleinement acceptées socialement et juridiquement parlant. Il n'est donc pas surprenant qu'une grande majorité d'entre elles se déclarent victimes d'une discrimination à grande échelle à l'encontre de leur orientation sexuelle, de leur identité de genre ou de leur statut intersexué (section 3.3).

Dans ce contexte, les personnes LGBTI peuvent souffrir d'un important déficit de bien-être. La section 4 explique comment la discrimination anti-LGBTI peut nuire à des déterminants essentiels de la qualité de vie de ces personnes : vie familiale, éducation, performances économiques et santé (section 4.1). Elle s'intéresse ensuite aux stratégies empiriques mises en œuvre par les chercheurs pour identifier l'existence d'une éventuelle pénalité pour les LGBTI (i.e. déterminer si les personnes LGBTI s'en sortent moins bien que le reste de la population) et ses causes. La section 4.2 analyse les atouts et les limites des données résultant d'enquêtes, tandis que la section 4.3 examine les avantages et les inconvénients des données expérimentales.

- La section 4.2 montre que les limites inhérentes au recours à des données d'enquête sont exacerbées lorsque ces données servent à mesurer l'écart socio-économique entre les personnes LGBTI et les autres. Premièrement, la révélation de l'orientation sexuelle, de l'identité de genre ou du statut intersexué par les personnes LGBTI à leur entourage ne va pas de soi, de sorte que ces caractéristiques peuvent être observées par les chercheurs mais pas forcément par les autres. En outre, seules quelques enquêtes représentatives recueillent des informations directes sur le statut de minorité sexuelle ou de genre. Les autres enquêtes appréhendent le statut LGBTI de façon indirecte, via le sexe du (ou de la) partenaire de la personne interrogée. Autrement dit, la plupart des enquêtes représentatives permettent uniquement de comparer la situation des personnes homosexuelles en couple avec celle des personnes hétérosexuelles en couple, ce qui génère de nombreux biais supplémentaires.
- Les mesures directes du statut de minorité sexuelle ou de genre comblent une partie de ces lacunes, mais pas toutes. Dans ce contexte, les données expérimentales constituent une meilleure approche pour quiconque souhaite mesurer de façon rigoureuse une éventuelle pénalité pour les LGBTI et ses causes (section 4.3). Néanmoins, elles ne constituent pas non plus une solution miracle. Les données d'enquête offrent l'avantage majeur d'appréhender la situation des personnes LGBTI par rapport au reste de la population dans de multiples aspects de leur vie. Au contraire, seules les dimensions qui se prêtent à un scénario fictif (e.g. candidats fictifs à un emploi, à un appartement à louer, à un service, à un élément d'information, etc.) peuvent être analysées au moyen de données expérimentales.

À partir d'une revue exhaustive des études fondées sur des données d'enquête et expérimentales, la section 5 cherche à déterminer si les personnes LGBTI sont pénalisées dans leur vie socioéconomique et pourquoi.

- La section 5.1 concerne la vie familiale des personnes LGBTI. Elle révèle que les obstacles à la reconnaissance juridique des couples de même sexe nuit à leur

stabilité et au bien-être de leurs enfants. Ce bien-être est également affecté par les discriminations que vaut à ces enfants le fait d'avoir des parents de même sexe. Ces effets sont compensés en partie par la plus grande implication des parents de même sexe dans l'éducation de leurs enfants : la décision de devenir parent résulte plus souvent d'un choix chez les couples homosexuels que chez les couples hétérosexuels. La discrimination à l'égard des personnes transgenres et intersexuées peut aussi gravement entraver leur capacité à s'épanouir dans leur vie familiale. L'accès des personnes transgenres aux techniques de préservation de la fécondité avant qu'elles ne changent de sexe est essentiel si elles veulent avoir des enfants. Or, cet accès est fortement tributaire du niveau d'acceptation sociale des minorités sexuelles et de genre : si les médecins estiment que les personnes transgenres ne sont pas aptes à être parents, ils ne leur proposeront pas ces techniques. En outre, la chirurgie sur les organes génitaux des personnes intersexuées peut nuire à leur fécondité et à leur capacité à nouer des relations stables, ce qui rend ce type d'opération sur les mineurs intersexués encore plus problématique dès lors qu'elle n'est pas médicalement justifiée.

- La section 5.2 analyse les performances scolaires des personnes LGBTI. Elle tend à montrer que la stigmatisation généralisée des minorités sexuelles et de genre à l'école constitue un obstacle substantiel à leur réussite scolaire. Éprouver une attirance pour des personnes du même sexe ou avoir une sexualité homosexuelle à l'adolescence et/ou au début de l'âge adulte est associé à de moins bonnes performances académiques. En outre, les personnes transgenres ont moitié moins de chances d'obtenir un diplôme universitaire que les personnes cisgenres aux États-Unis. Enfin, de nombreux étudiants intersexués abandonnent l'école au cours de leur puberté, lorsque le risque que leur statut intersexué devienne visible augmente.
- La section 5.3 analyse les performances économiques des personnes LGBTI. Les données d'enquête fournissent des résultats biaisés quant à la trajectoire des homosexuels et des lesbiennes sur le marché du travail : elles montrent que les hommes homosexuels ont moins de chances d'être recrutés, travaillent moins et gagnent moins que les hommes hétérosexuels, alors que c'est l'inverse pour les lesbiennes relativement aux femmes hétérosexuelles. Ces estimations reflètent un « biais de spécialisation au sein du ménage » qui est encore persistant au sein des couples hétérosexuels mais n'existe guère au sein des couples homosexuels. Dans ce contexte, l'homme hétérosexuel en couple est en moyenne plus impliqué sur le marché du travail que l'homme homosexuel en couple, tandis que la femme hétérosexuelle en couple est en moyenne moins impliquée que la lesbienne en couple. Pour éviter ce biais, il faudrait utiliser des données d'enquête qui contiennent des informations directes sur l'orientation sexuelle des sondés afin de comparer la situation sur le marché du travail des homosexuels et des hétérosexuels *célibataires*. Bien que cette stratégie ait jusque là rarement été appliquée faute de données, elle révèle que les hommes homosexuels et les lesbiennes sont pénalisés en termes d'emploi et de revenu du travail. Ces résultats sont confirmés par des expériences de terrain. En moyenne, les candidats homosexuels ont deux fois moins de chances d'être convoqués à un entretien d'embauche par le recruteur que les candidats hétérosexuels. En outre, on leur propose des salaires jusqu'à 10 % inférieurs. À ce jour, aucune expérience de terrain n'a mesuré la discrimination envers les candidats bisexuels et intersexués, et seulement une s'est concentrée sur la discrimination à l'embauche à l'encontre des personnes transgenres. Mais les résultats d'enquête sont plus tranchés pour



For Official Use

ces sous-groupes. Ils révèlent que les personnes bisexuelles, transgenres et intersexuées sont fortement pénalisées en termes d'emploi et de rémunération. Par conséquent, les personnes LGBTI affichent des taux de pauvreté beaucoup plus élevés que le reste de la population, une situation qui peut aussi résulter en partie de la discrimination avérée que ces personnes subissent sur le marché du logement.

- La section 5.4 se concentre sur la santé des personnes LGBTI. Elle révèle que ces dernières souffrent plus fréquemment de pathologies physiques et mentales. Parmi ce groupe, les personnes bisexuelles, transgenres et intersexuées sont les plus touchées. Cette pénalité semble en partie découler de la perception des personnes LGBTI d'être socialement rejetées. À titre d'exemple, elles sont plus susceptibles d'avoir pensé au suicide ou d'avoir fait une tentative de suicide que le reste de la population. Néanmoins, cet écart se réduit plus rapidement dans les États américains qui ont adopté le mariage entre personnes du même sexe que dans les autres (une tendance qui n'était pas à l'œuvre avant cette légalisation). Il ressort des données d'enquête que d'autres canaux contribuent vraisemblablement à expliquer le déficit des LGBTI en termes de santé. En particulier, les employeurs du secteur privé ne proposent généralement pas une assurance-maladie aussi couvrante à leurs salariés engagés dans une relation homosexuelle qu'à ceux mariés avec une personne de sexe opposé, ce qui expose les hommes et les femmes homosexuels à un risque beaucoup plus élevé d'être non assurés. En outre, le taux de prévalence du HIV plus élevé chez les personnes LGBTI peut résulter en partie de la discrimination qu'elles subissent sur le marché du travail : une expérience de discrimination dans ce domaine est positivement corrélée à la décision de devenir travailleur du sexe chez les personnes transgenres (qui sont de fait surreprésentées parmi les prostitué-e-s).
- Globalement, les études confirment que la discrimination envers les personnes LGBTI nuit à des dimensions essentielles à leur bien-être : leur vie familiale, leur éducation, leurs performances économiques et leur santé. Dans ces conditions, il n'est pas surprenant que les individus LGBTI se déclarent moins heureux et moins satisfaits de leur existence (section 5.5). Ainsi, seulement 18 % des adultes LGBTI aux États-Unis se déclarent « très heureux », contre 30 % de la population américaine.

La section 6 passe en revue les mesures anti-discrimination susceptibles d'atténuer la pénalité dont souffrent les individus LGBTI.

- La section 6.1 examine l'efficacité des lois qui interdisent la discrimination envers les minorités sexuelles et de genre. Bien que ces lois semblent efficaces pour protéger les personnes LGBTI une fois qu'elles sont entrées sur le marché (le marché du travail ou du logement par exemple), les études sont plus nuancées concernant leur capacité à aider ces personnes à y pénétrer. Prouver la discrimination à l'entrée d'un marché s'avère en effet difficile, sauf si cette discrimination est flagrante. En outre, les lois anti-discrimination peuvent réduire les chances des personnes LGBTI d'être recrutées ou choisies comme locataires, les employeurs ou les propriétaires redoutant une action en justice s'ils résilient leur contrat. Les lois anti-discrimination devraient donc être complétées par d'autres approches. Dans la mesure où la discrimination envers les personnes LGBTI semble résulter pour une large part de préjugés négatifs (voir la section 5.3), des interventions visant à lutter contre ces préjugés s'avèrent nécessaires.

- La section 6.2 étudie les deux principales approches qui, en théorie, pourraient contribuer à réduire l'hostilité à l'égard des personnes homosexuelles, transgenres et intersexuées : (i) l'adoption de lois inclusives pour les personnes LGBTI (qui ne se limitent pas à interdire la discrimination envers ces personnes) et (ii) les « formations à la diversité », auprès du grand public via des campagnes d'information et/ou auprès d'une sous-population donnée (élèves du premier et du deuxième cycle du secondaire, employeurs ou salariés, par exemple). Bien que les études qui ont évalué l'impact de ces approches soient encore peu nombreuses, elles suggèrent des effets prometteurs en termes de réduction des préjugés.

La section 7 conclut et définit les pistes de recherche suivantes :

- mieux identifier les personnes LGBTI dans les enquêtes *nationales*, en posant des questions *directes* sur leur orientation sexuelle, leur identité de genre ou leur statut intersexué, et en utilisant des techniques d'enquête qui garantissent une confidentialité et un anonymat suffisants pour éviter que les minorités sexuelles et de genre ne se sous-déclarent
- améliorer la mesure des discriminations envers les personnes LGBTI sur différents marchés et l'identification de leur(s) cause(s), si possible au moyen d'une *testing international standardisé*
- repérer les *dispositions juridiques qui favorisent les formes directes et indirectes de discrimination envers les personnes LGBTI* (obstacles juridiques au mariage entre personnes du même sexe, par exemple) et quantifier leur coût économique pour ces personnes
- mesurer la *discrimination envers les personnes LGBTI dans l'accès aux services de santé, dont les soins de longue durée pour les personnes âgées*
- évaluer l'impact des mesures visant à réduire les préjugés envers les personnes LGBTI.



For Official Use

# *Table of Contents*

**OECD SOCIAL, EMPLOYMENT AND MIGRATION WORKING PAPERS** ..... **2**

**Acknowledgements** ..... **3**

**Abstract** ..... **4**

**Glossary** ..... **5**

**Executive summary** ..... **8**

**Résumé** ..... **12**

**1. Introduction** ..... **20**

**2. LGBTI demographics** ..... **25**

2.1. Estimates for the size of the LGB population ..... 25
2.2. Estimates for the size of the transgender population ..... 31
2.3. Estimates for the size of the LGBT population ..... 32
2.4. Estimates for the size of the intersex population ..... 33

**3. Attitudes toward LGBTI, LGBTI rights and the perception of discrimination among LGBTI35**

3.1. Attitudes toward LGBTI ..... 35
3.2. LGBTI rights ..... 50
3.3. Perception of discrimination among LGBTI ..... 61

**4. Identifying an LGBTI penalty and its cause: A challenge** ..... **66**

4.1. Anti-LGBTI discrimination and LGBTI well-being ..... 66
4.2. The limits (and advantages) of observational data ..... 74
4.3. The advantages (and limits) of experimental data ..... 85

**5. Are LGBTI penalized, and why?** ..... **87**

5.1. Family life ..... 88
5.2. Education ..... 90
5.3. Economic outcomes ..... 93
5.4. Health ..... 112
5.5. Well-being ..... 116

**6. Combating anti-LGBTI discrimination** ..... **118**

6.1. Anti-discrimination laws ..... 118
6.2. Prejudice-reducing interventions ..... 119

**7. Conclusion and avenues for future research** ..... **123**

**Bibliography** ..... **126**

Annex ..... 153

## Tables

Table 3.1. Augmented Global Index on Legal Recognition of Homosexual Orientation in OECD countries, as of 2016 ... 52
Table 3.2. List of countries that have legalized same-sex marriage, as of 2016 ... 54
Table 3.3. Transgender Rights Index in OECD countries, as of 2016 ... 57
Table 4.1. Proportion of same-sex couples in OECD countries, based on the 2010 EWCS, the 2011-2012 EQLS, the 2014 EU-LFS and the 2014 EU-SILC ... 80
Table 5.1. Breakdown of studies that test for an employment and/or individual earnings gap between LGBTI and the rest of the population as of 2016, by country and category of sexual and gender minority ... 88
Table 5.2. Employment gap between LGBTI and non-LGBTI, relying on population-based survey data97
Table 5.3. Ratio of the callback rates between heterosexual and homosexual applicants, relying on the 13 correspondence studies that have tested for hiring discrimination based on sexual orientation . 100
Table 5.4. Breakdown of studies using couples-based data to test for an individual earnings gap between partnered homosexuals and partnered heterosexuals as of 2016, by country, time period and marital status of partnered heterosexuals ... 104
Table 5.5. General summary of studies using individuals-based data to test for an individual earnings gap between homosexuals and heterosexuals, as of 2016 ... 105

## Figures

Figure 1.1. Acceptance of homosexuality and support to gender equality, 2001-2014 ... 22
Figure 1.2. Acceptance of homosexuality and positive attitudes toward immigrants, 2001-2014 ... 23
Figure 2.1. Proportion of LGB adults, depending on whether sexual orientation is defined by reference to sexual self-identification, sexual behaviour or sexual attraction ... 26
Figure 2.2. Proportion of adults who self-identify as LGB in various population-based surveys ... 28
Figure 2.3. Proportion of adults who self-identify as LGB, by gender ... 30
Figure 2.4. Proportion of adults who self-identify as LGB, by age ... 31
Figure 3.1. Evolution of the acceptance of homosexuality in non-OECD and OECD countries between 1981-2000 and 2001-2014 ... 37
Figure 3.2. Evolution of the acceptance of homosexuality in OECD countries between 1981-2000 and 2001-2014 ... 38
Figure 3.3. Evolution of the acceptance of homosexuality in OECD countries, depending on whether they have legalized same-sex marriage as of 2014 ... 39
Figure 3.4. Acceptance of homosexuality in OECD countries (2001-2014), by gender ... 40
Figure 3.5. Acceptance of homosexuality in OECD countries (2001-2014), by age group ... 42
Figure 3.6. Acceptance of homosexuality in OECD countries (2001-2014), by education level ... 43
Figure 3.7. Acceptance of homosexuality in OECD countries (2001-2014), by location ... 43
Figure 3.8. Acceptance of transgender people in OECD countries, based on the 2015 Eurobarometer 44
Figure 3.9. Acceptance of transgender children in OECD countries (and non-OECD countries), based on the 2016 ILGA survey ... 45
Figure 3.10. Acceptance of homosexuality (2001-2014) and acceptance of transgender people based on the 2015 Eurobarometer, in OECD countries ... 46
Figure 3.11. Acceptance of homosexuality (2001-2014) and acceptance of transgender children based on the 2016 ILGA Survey, in OECD countries ... 47
Figure 3.12. Acceptance of intersex children in OECD countries (and non-OECD countries), based on the 2016 ILGA survey ... 49
Figure 3.13. Acceptance of homosexuality (2001-2014) and acceptance of intersex children based on the 2016 ILGA Survey, in OECD countries ... 49

Figure 3.14. Acceptance of homosexuality (2001-2014) and augmented GILRHO index as of 2016 in OECD countries ..... 55
Figure 3.15. Acceptance of transgender people in OECD countries based on the 2015 Eurobarometer and Transgender Rights Index as of 2016 ..... 58
Figure 3.16. Acceptance of homosexuality (2001-2014) and perception by LGBT of discrimination against lesbians, gay men and bisexuals respectively based on the 2012 FRA survey, in OECD countries ..... 62
Figure 3.17. Augmented GILRHO index as of 2016 and perception by LGBT of discrimination against lesbians, gay men and bisexuals respectively based on the 2012 FRA survey, in OECD countries63
Figure 3.18. Acceptance of transgender people based on the 2015 Eurobarometer and perception by LGBT of discrimination against transgender people based on the 2012 FRA survey, in OECD countries ..... 64
Figure 3.19. Transgender Rights Index as of 2016 and perception by LGBT of discrimination against transgender people based on the 2012 FRA survey, in OECD countries ..... 65
Figure 4.1. Acceptance of homosexuality (2001-2014) and proportion of same-sex couples based on various cross-country surveys, in OECD countries ..... 83
Figure 5.1. Average (standardized) life satisfaction by sexual identity ..... 117

# 1. Introduction

1. Cross-national studies on attitudes toward homosexuality indicate a general shift toward greater acceptance in a majority of countries (Smith, Son and Kim (2014)). Yet, homophobia remains widespread, as do transphobia and intersexphobia.[5] As an illustration, relying on a cross-continent survey conducted in 2016, the International Lesbian, Gay, Bisexual, Trans and Intersex Association (ILGA) reports that two-thirds of adults would be upset if one of their children were in love with someone of the same sex. Moreover, only a quarter would accept a trans child. And less than 60% would oppose rather than support genital surgery for children "whose genitals are unclear at birth" (ILGA (2016a)).

2. In this context, sexual and gender minorities are at risk of unfair treatment in dimensions critical for their well-being, including family life, education, economic outcomes and health (Layard et al. (2014)). However, although scholars have devoted increasing attention to the socio-economic outcomes of sexual and gender minorities since the late 1990s (when these groups became more easily identifiable in population-based surveys[6]), a synthesis of the results is missing. One objective of this paper is to fill the gap through a comprehensive review of survey-based and experimental evidence (stemming almost exclusively from OECD countries) on whether and why LGBTI are penalized in their socio-economic lives.[7]

3. LGBTI are defined with respect to three distinct characteristics: sexual orientation, gender identity and sex characteristics. Sexual orientation typically encompasses three dimensions: sexual self-identification, sexual behaviour, and sexual attraction (Sell (1997), Saewyc et al. (2004)).[8] Sexual orientation allows for differentiating between gay men, lesbians, bisexuals and heterosexuals. By contrast, gender identity refers to a person's internal sense of being masculine, feminine, or androgynous (Haas et al. (2010)). As such, it permits distinguishing between transgender and cisgender individuals, a transgender (resp. cisgender) person being one whose gender identity differs from (resp. matches) his/her biological sex at birth.[9] Sex characteristics comprise sexual anatomy, reproductive organs, hormonal and/or chromosomal patterns. An individual's sex characteristics can fit typical binary notions of male or female bodies, or not. In this latter case, this person is described as being "intersex".

4. Ensuring that LGBTI can openly express their sexual orientation, gender identity and intersex status without being discriminated against should constitute a priority, for at least three reasons:

---

5 See the glossary.

6 Population-based surveys refer to data collected using sampling procedures that allow for analyses and statistical inference that can be generalized to a population.

7 Addressing the extent to which discrimination targets non-LGBTI individuals who are perceived as LGBTI as well as LGBTI's straight relatives, friends or allies is beyond the scope of this review, although this issue constitutes an important and hardly explored question.

8 Pega, Gray and Veale (2010) specify the relationship between these dimensions: "sexual orientation is based upon sexual attraction and sexual attraction can result in various sexual behaviours and the adoption of sexual identities."

9 It is important to note that the terms "transgender" and "transsexual" are not synonymous: the term "transsexual" describes a subset of transgender individuals who undergo sex reassignment surgery and/or hormone treatment to align physical sex and gender identity.

5. The first and most important reason is obviously ethical. Sex characteristics, sexual orientation and gender identity are integral aspects of our selves. In modern societies, they should therefore not be subject to forced concealment or discrimination when revealed. This requirement is confirmed by international bodies such as the United Nations Human Rights Council (UNHRC). Although sexual orientation and gender identity are not explicitly stated in Article 2 of the Universal Declaration of Human Rights (while "sex" is mentioned)[10], the UNHRC considers the failure by state authorities to punish anti-LGBTI violence and discrimination to be a breach of their obligation to abide by this Declaration (see United Nations Human Rights (2012)). Additionally, the UNHRC has adopted three resolutions since 2011 that reflect its engagement in combating violence and discrimination against sexual and gender minorities.[11]

6. The second reason is social. Improving attitudes and behaviour toward LGBTI has the potential to dramatically boost social cohesion. Hostility toward LGBTI is closely related to endorsement of traditional gender roles whereby men, often physically stronger, handle the potentially harmful public sphere while women maintain the home and rear the children (see Weinberger and Millham (1979) and Herek (1988) in the US, Nierman et al. (2007) in Chile and the US, Costa and Davies (2012) in Portugal, Steffens Jonas and Denger (2015) in Germany and Mexico). Figure 1.1 confirms the positive correlation between acceptance of homosexuality and support to gender equality among 101 countries.[12]

7. This relationship comes as no surprise. Both endorsement of traditional gender roles and hostility toward LGBTI indeed derive from the essentialist belief that (i) people fall into two distinct gender identities (male and female) that match biological sex at birth;[13] (ii) men and women feel sexual attraction to one another that leads them to form couples and have children;[14] (iii) within these couples, men and women are endowed with biologically-determined roles. Put differently, this belief system views men and women as having different activity spheres and LGBTI as abnormal people who should be "normalized". In this context, reducing homo-, trans- and intersexphobia should improve gender equality on top of LGBTI-inclusivity.

10 Article 2 of the Universal Declaration of Human Rights reads as follows: "Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth, or other status."

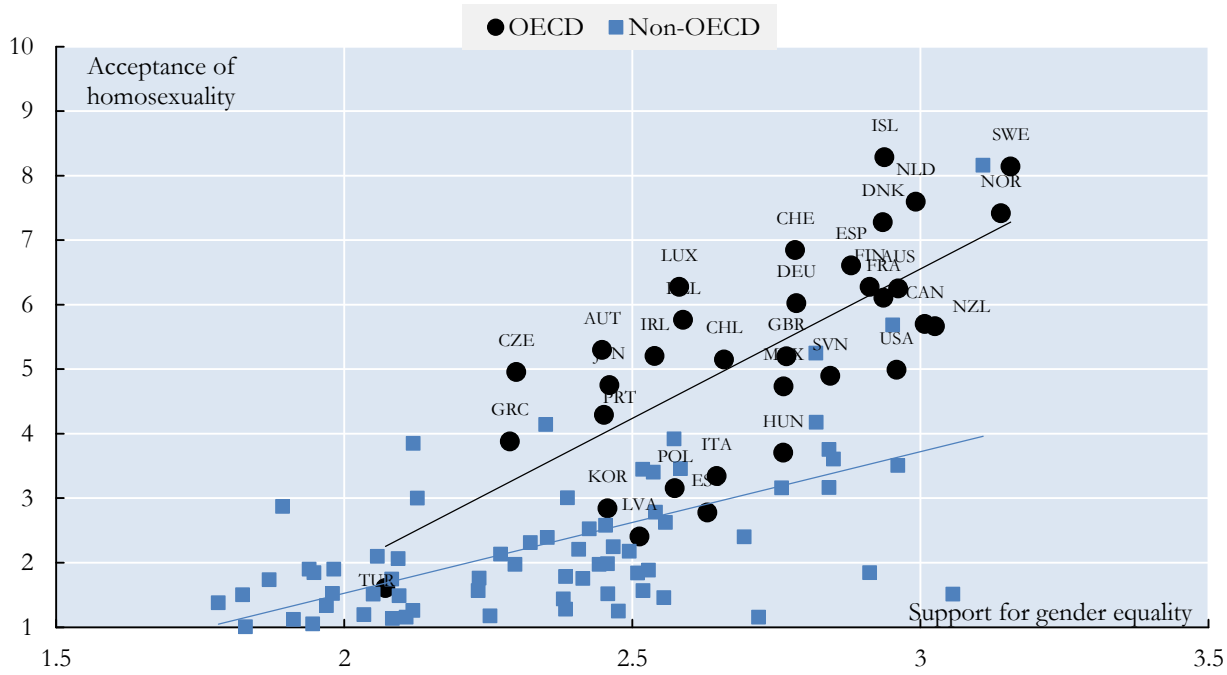
11 See http://www.ohchr.org/EN/Issues/Discrimination/Pages/LGBTUNResolutions.aspx (last accessed on March 6, 2017).

12 These attitudes are computed for the 2001-2014 period, based on the following international surveys: the AsiaBarometer, the European Values Survey (EVS), the Latinobarometro and the World Values Survey (WVS). More precisely, acceptance of homosexuality is measured based on the following question: "Please tell me whether you think homosexuality can always be justified, never be justified, or something in between, using this card" (the card being a scale from 1 to 10, where 1 means that homosexuality is never justifiable and 10 means that it is always justifiable). This question is part of a battery of several questions about controversial behaviours and issues (e.g. abortion, divorce, euthanasia, prostitution, etc.). Support for gender equality is an average of responses to the following three EVS/WVS questions: "When jobs are scarce, men should have more right to a job than women." (=1 if agree, =2 if neither agree nor disagree, =3 if disagree); "On the whole, men make better political leaders than women do." (=1 if strongly agree, =2 agree, =3 if disagree, =4 if strongly disagree), "A university education is more important for a boy than for a girl" (=1 if strongly agree, =2 agree, =3 if disagree, =4 if strongly disagree).

13 This view obviously induces the rejection of people who do not fit typical binary notions of male or female bodies. It also feeds "an emotional disgust toward individuals who do not conform to society's gender expectations" (Hill and Willoughby (2005), p 533).

14 In this setting, "heterosexuality is equated ideologically with 'normal' masculinity and 'normal' femininity, whereas homosexuality is equated with violating the norms of gender'' (Herek (1992), p 97).

**Figure 1.1. Acceptance of homosexuality and support to gender equality, 2001-2014**




*Note*: Among OECD countries, information is missing for Israel and Slovak Republic.
*Source*: AsiaBarometer, European Values Survey, Latinobarometro and World Values Survey.

8. But there is potentially more. Taking the side of a group who is discriminated against likely increases readiness to stand up for other groups who also suffer from unfair treatment. Nelson Mandela constitutes a famous example. He not only worked to dismantle apartheid, but also turned South Africa into a global leader on LGBTI rights.[15] As the first president of post-apartheid South Africa in 1996, he formed a constitution in 1996 which outlawed discrimination based on sexual orientation (as a comparison, only seven OECD countries to date constitutionally prohibit sexual orientation discrimination). Consequently, South Africa also became one of the first countries to legislate in favour of same-sex marriage (in 2006, following Netherlands (2001), Belgium (2003), Canada (2005) and Spain (2005)). Finally, South Africa was the first nation to enact antidiscrimination laws that explicitly protect intersex people (in 2005). In this setting, one can expect that greater acceptance of LGBTI also leads to greater acceptance of other minorities in general. Consistent with this surmise, Figure 1.2[16] reveals a positive relationship between acceptance of homosexuality and positive attitudes[17] toward immigrants.[18]

15 See http://www.huffingtonpost.com/2013/12/08/nelson-mandela-gay-rights_n_4406307.html (last accessed on March 10, 2017).

16 The correlations presented in Figures 1.1 and 1.2 remain unchanged if one relies on the alternative measure of acceptance of homosexuality presented in Section 3. (Results available upon request.)

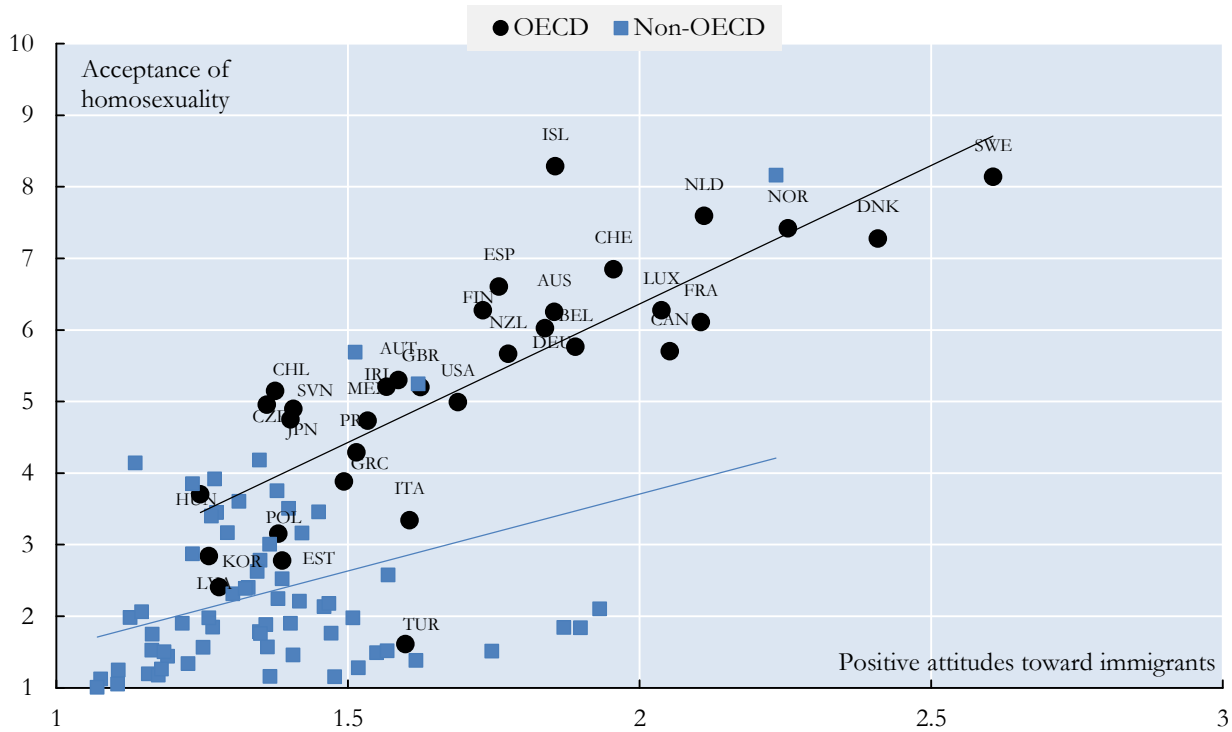
17 Positive attitudes toward immigrants rely on responses to the following EVS/WVS question: "When jobs are scarce, employers should give priority to people of this country over immigrants." (=1 if agree, =2 if neither agree nor disagree, =3 if disagree).

18 It is worthwhile stressing that the positive correlation between acceptance of homosexuality and positive attitudes toward immigrants might be weakening. Indeed, in an effort to make their anti-Muslim and anti-immigrant discourse more acceptable, many European far-right parties contend that (Muslim) immigrants pose a threat to Western progressive values, including LGBTI rights. This rethoric may induce a gradual disconnect between acceptance of homosexuality and positive attitudes toward immigrants among the general



For Official Use

**Figure 1.2. Acceptance of homosexuality and positive attitudes toward immigrants, 2001-2014**




*Note*: Among OECD countries, information is missing for Israel and Slovak Republic.
*Source*: AsiaBarometer, European Values Survey, Latinobarometro and World Values Survey.

9. The third reason behind combatting anti-LGBTI discrimination is economic. Not allowing LGBTI to thrive at school and in the labour market undoubtedly generates a considerable cost for the economy. Moreover, an economy that is unable to value diversity misses substantial benefits. Diversity enables the sharing of a richer array of competencies, experiences and viewpoints that often offsets the greater difficulty of communication or greater likelihood of conflict that may flow from a diverse population (see Hoogendoorn and van Praag (2012) and Alesina, Harnoss and Rapoport (2016) for evidence of the positive effect of birthplace diversity on economic performance). All in all, reducing anti-LGBTI discrimination might trigger important economic gains.

10. Section 2 investigates the size of the LGBTI population. It suggests that LGBTI constitute a substantial minority, approximately 4.5% in the US according to a conservative estimate. Section 3 summarises attitudes toward LGBTI. It shows that there is still a long way before LGBTI meet full-fledged social and legal acceptance. It therefore comes as no surprise that a large majority report widespread discrimination; based on their sexual orientation, gender identity or intersex status. Section 4 clarifies how anti-LGBTI discrimination can negatively affect dimensions critical for their welfare and discusses the empirical strategies that researchers have been implementing to identify an "LGBTI penalty" (i.e. whether LGBTI fare worse

public. See http://www.vox.com/2016/6/13/11924826/donald-trump-islamophobia-muslim-lgbtq-europe-wilders (last accessed on February 9, 2017).

than non-LGBTI) and its causes. Based on a systematic review of survey-based and experimental evidence, Section 5 investigates whether LGBTI are penalized in their socio-economic lives and why. It reveals that sexual and gender minorities show worse outcomes in their family life, education, labour market and health, in particular due to discrimination. Section 6 reviews the anti-discrimination policies that may mitigate the LGBTI penalty. Finally, Section 7 concludes and defines important avenues for future research.



For Official Use

# 2. LGBTI demographics

11. Few population-based surveys include direct questions on sexual orientation and gender identity.[19] The bulk of representative surveys measure sexual orientation in an indirect manner, namely based on the sex of the respondent's partner, which raises a number of identification issues that are summarized in Section 4.2.2. When population-based surveys do include direct questions, they provide estimates for the size of the LGBT population that are not necessarily comparable: the wording of the questions on sexual orientation and gender identity typically differs across surveys, as does the survey method (known to influence respondents' willingness to reveal their sexual and/or gender minority status).[20]

12. Moreover, no population-based survey allows for identifying intersex people, meaning that estimates for this group's size stem from research articles published in medical journals. Given these limitations, the proportions presented below should be considered as only tentative.

## 2.1. Estimates for the size of the LGB population

13. A minority of countries have included direct questions on the sexual orientation of the respondent in population-based surveys,[21] at least at some point. This is the case in English-speaking countries (Australia, Canada, Ireland, New-Zealand, UK, US) and Scandinavian countries (Denmark, Finland, Norway, Sweden), as well as in Chile, Estonia, France, the Netherlands, Spain and Switzerland.[22]

### *2.1.1. Sexual attraction, sexual behaviour or sexual self-identification?*

14. Estimates for the size of the LGB population vary considerably, depending on whether sexual orientation is defined by reference to sexual self-identification, sexual behaviour or sexual attraction[23] (Black et al. (2010)). For instance, one of the earliest population-based surveys that includes information on sexual orientation, the 1992 US National Health and Social Life Survey (NHSLS),[24] reported that 2.8% of men and

[19] In particular, no census has ever included such questions. But change is underway, especially in the UK. A sexual identity question is indeed to be included in the 2017 Census for England and Wales as a test to see whether it can be officially added by the 2021 Census. The United Kingdom Office for National Statistics is also currently carrying out work to consider options for collecting data on gender identity and hopes to add questions to identify gender minorities by 2021.

[20] Unfortunately, there is no consensus to date among national statistics offices on how best to measure the size of the LGBTI population in representative surveys. See The Williams Institute (2009) and the Austrian Institute for Advanced Studies for a preliminary set of guidelines. One objective of the OECD "LGBTI inclusiveness" project is to help develop such a consensus in a near future.

[21] Many of these surveys focus on health and sexual practices.

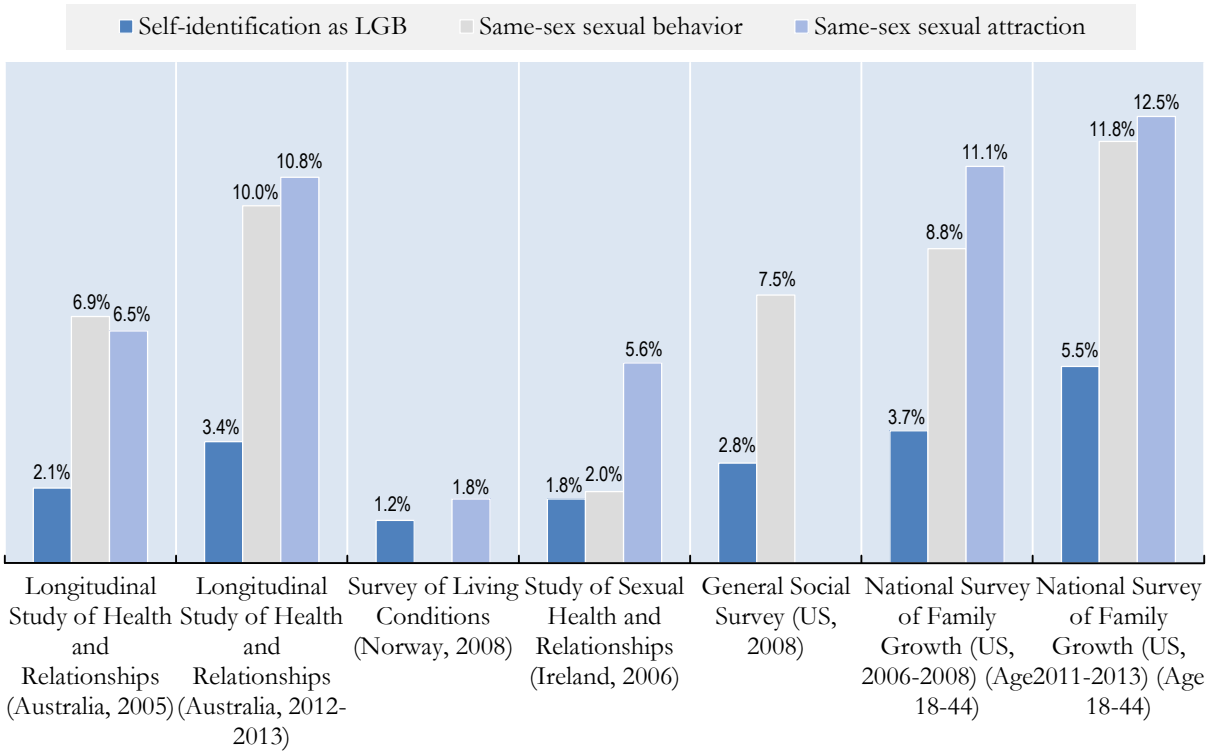
[22] Unfortunately, only few of these estimates are available, which explains why only a minority of these countries are covered in Figures 2.1 to 2.4.

[23] Sexual self-identification, sexual behaviour and sexual attraction are typically captured by the following questions respectively: 1. "Do you consider yourself to be: a) Heterosexual or straight, b) Gay or lesbian, c) Bisexual"; 2. "In the past *[time period e.g. year]* who have you had sex with? a) Men only, b) Women only, c) Both men and women, d) I have not had sex"; 3. "People are different in their sexual attraction to other people. Which best describes your feelings? Are you: a) Only attracted to females?, b) Mostly attracted to females?, c) Equally attracted to females and males?, d) Mostly attracted to males?, e) Only attracted to males?, f) Not sure?". See The Williams Institute (2009) for further information.

[24] The US General Social Survey (GSS) is the second population-based survey that has been collecting information on sexual orientation (sexual behavior initially) for many years (since 1989) (see Badgett (1995) for an analysis of the early rounds). However, contrary to the NHSLS (Couper and Stinson (1999)), the GSS does not rely on a self-administered questionnaire to identify sexual orientation, which likely leads to under-estimating the size of the LGB population (see the next paragraph for a discussion).

1.4% of women self-identified as homosexual. This is slightly lower than the 3.0% of men and 1.6% of women who reported current sexual behaviour exclusively with same-sex partners, and substantially less than the 7.7% of men and 7.5% of women who indicated same-sex sexual attraction (Laumann et al. (1994)). Similarly, the more recent US National Survey of Family Growth (NSFG) conducted between 2006 and 2008 revealed that 3.7% of adults consider themselves as gay, lesbians or bisexuals. But a much higher proportion reported any same-sex sexual behaviour (8.8%) or any same-sex sexual attraction (11.1%) (Gates (2011)). As shown in Figure 2.1, this feature is not specific to the US. It is also observed in other countries (such as Australia, Ireland and Norway) that have run surveys containing at least two different measures of sexual orientation.[25]

**Figure 2.1. Proportion of LGB adults, depending on whether sexual orientation is defined by reference to sexual self-identification, sexual behaviour or sexual attraction**




*Source*: Gates (2011) and author's calculation based on Layte et al. (2006), Gulloy and Norman (2010), Chandra et al. (2011), Richters et al. (2014) and Copen, Chandra and Febo-Vazquez (2016).Add the source here.

15. That the proportion of LGB reaches its maximum with measures of sexual attraction and its minimum with measures of sexual self-identification is not surprising. Sexual attraction is indeed a more inclusive concept than sexual behaviour, which is itself more inclusive than sexual self-identification. Or, to put it differently, not all people who feel attracted to same-sex people engage in same-sex sexual

[25] Figure 2.1 reveals another interesting pattern: in countries where multiple rounds of the same survey are specified (Australia and the US), self-reports of non-heterosexual sexual orientation increase from a round to another, holding the survey method constant. This result suggests an improvement of social acceptance of LGB over time, a surmise that is confirmed in Section 3.1.

behaviour, and not all people who engage in same-sex sexual behaviour view themselves as lesbian, gay or bisexual.

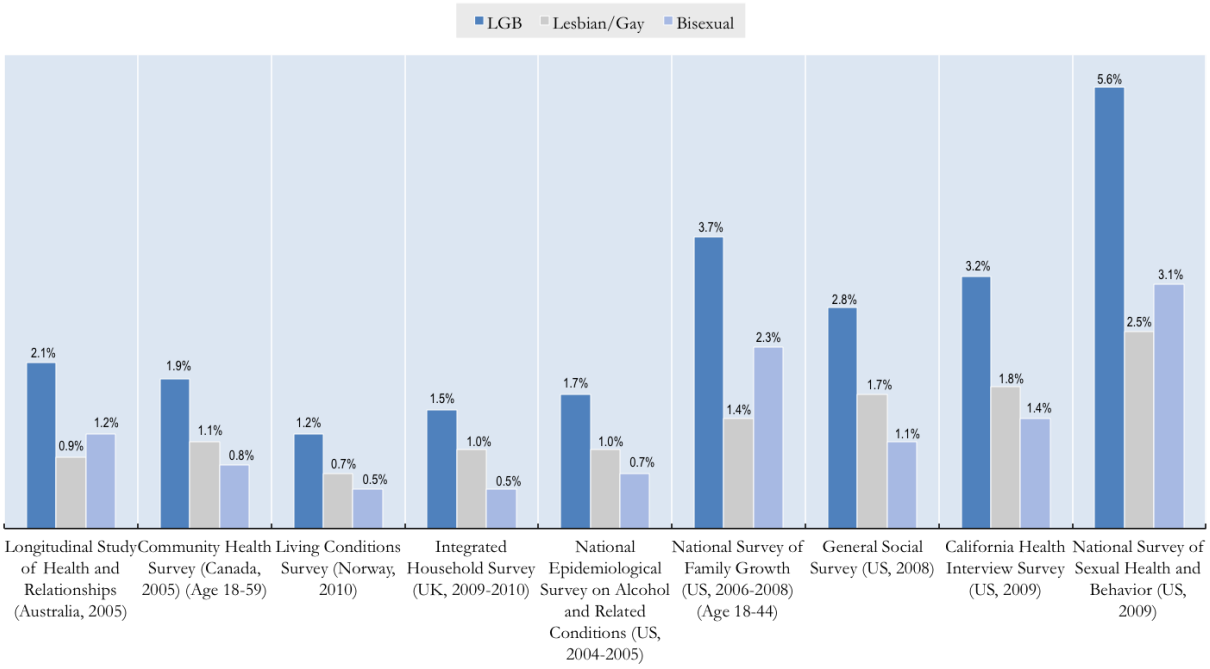
16. But Coffman, Coffman and Ericsson (2016) propose an additional reason behind the pattern of Figure 2.1: social desirability, or the tendency of survey respondents to answer questions in a way that will be viewed favourably by others. To reach this conclusion, these authors compare respondents' answers, depending on whether they are subjected to computer-assisted self-interviewing or to the item count technique (ICT), a veiled survey method that offers full concealment of respondents' answer.[26] They show that estimates from computer-assisted self-interviewing are biased by social desirability to the extent that the ICT yields higher self-reports of non-heterosexual identity, behaviour and attraction. This increase reaches 65% for questions that measure sexual self-identification. It is lower however for questions measuring sexual behaviour and even lower for those capturing sexual attraction, thereby suggesting that same-sex sexual attraction is more socially acceptable than same-sex sexual behaviour, which is itself more socially acceptable than a homosexual identity.

### *2.1.2. Focus on sexual self-identification*

17. Because they reveal how respondents view themselves and, hence, are potentially viewed by others, questions on sexual sef-identification are generally preferred over questions on sexual behaviour and attraction. One should bear in mind, however, that estimates based on sexual self-identification are conservative given their sensitivity to social desirability.

[26] The ICT is a between-subject method in which a randomly chosen control group of participants is asked to report how many of N items are true for themselves, where the items are neutral and non-sensitive in nature. The remaining respondents report how many of N+1 items are true, with N items being identical to the control group's items, and the N+1st item being a sensitive item, (e.g. "I am not heterosexual"or "I am transgender").

**Figure 2.2. Proportion of adults who self-identify as LGB in various population-based surveys**




*Source*: Gates (2011).

18. Gates (2011) is the first to exploit different population-based surveys to provide estimates on the proportion of LGB (see Figure 2.2). His analysis shows a fairly equal breakdown of the LGB population between homosexuals and bisexuals, with the proportion of homosexuals (resp. bisexuals) ranging from 40% (resp. 60%) to 60% (resp. 40%). However, the percentage of adults who self-identify as LGB varies considerably, from 1.2% in Norway (Living Conditions Survey, 2010) to 5.6% in the US (National Survey of Sexual Health and Behavior, 2009).

19. This heterogeneity may in part derive from variation in the survey method that is known to strongly influence respondents' tendency to provide socially desirable answers. Approaches that do not provide respondents with a sense of anonymity (not being able to link their responses to their identity) and privacy (not being able to observe them while they give their responses) have been shown to generate substantial underreporting (Office of National Statistics (2008), Ellison and Gunstone (2009), Das and Laumann (2010)). Estimates of the size of the LGB population indeed differ significantly depending on whether the questions eliciting sexual orientation are part of a questionnaire that is filled out by the interviewer[27] or directly completed by the respondent[28].

[27] Such survey methods include PAPI (paper and pencil interviewing), CATI (computer-assisted telephone interviewing) or CAPI (computer-assisted personal interviewing).

[28] Such survey methods mainly take the form of CASI (computer-assisted self-interviewing).

20. As an illustration, it is striking that, of the nine surveys reviewed by Gates (2011), the two which produce the highest share of self-identified LGB are those that rely on self-administered questionnaires (see Figure 2.2): the US National Survey of Family Growth (2006-2008) (3.7% of LGB) and the US National Survey of Sexual Health and Behavior (2009) (5.6% of LGB). Unfortunately, very few surveys outside the US include self-completion instruments to identify respondents' sexual orientation. Wave 3 of the UK Household Longitudinal Study (UKHLS) and wave 12 of the Household, Income and Labour Dynamics in Australia (HILDA) Survey[29] are two exceptions. Their estimates are slightly lower than those collected in the US but remain substantial: 2.5% of the UK sample identify as gay, lesbian or bisexual and 3.1% of the Australian sample (Powdthavee and Wooden (2015)).

21. Does the probability to identify as LGB vary across gender and age? Figures 2.3 and 2.4 report estimates consistent with those reported in previous studies (e.g. Gates (2011, 2014)). With the exception of Chile,[30] Figure 2.3 shows that women are less likely[31] to self-identify as homosexual, but they are more likely to self-identify as bisexual as compared to men. Overall, women are more likely to report a LGB identity than their male counterparts. Figure 2.4 reveals that self-identification as LGB declines with age.[32] Results by gender and age may reflect a greater plasticity of sexuality among women and younger cohorts and/or their lower tendency to provide socially desirable answers, in particular due to lower social pressure to conform to heteronormativity.

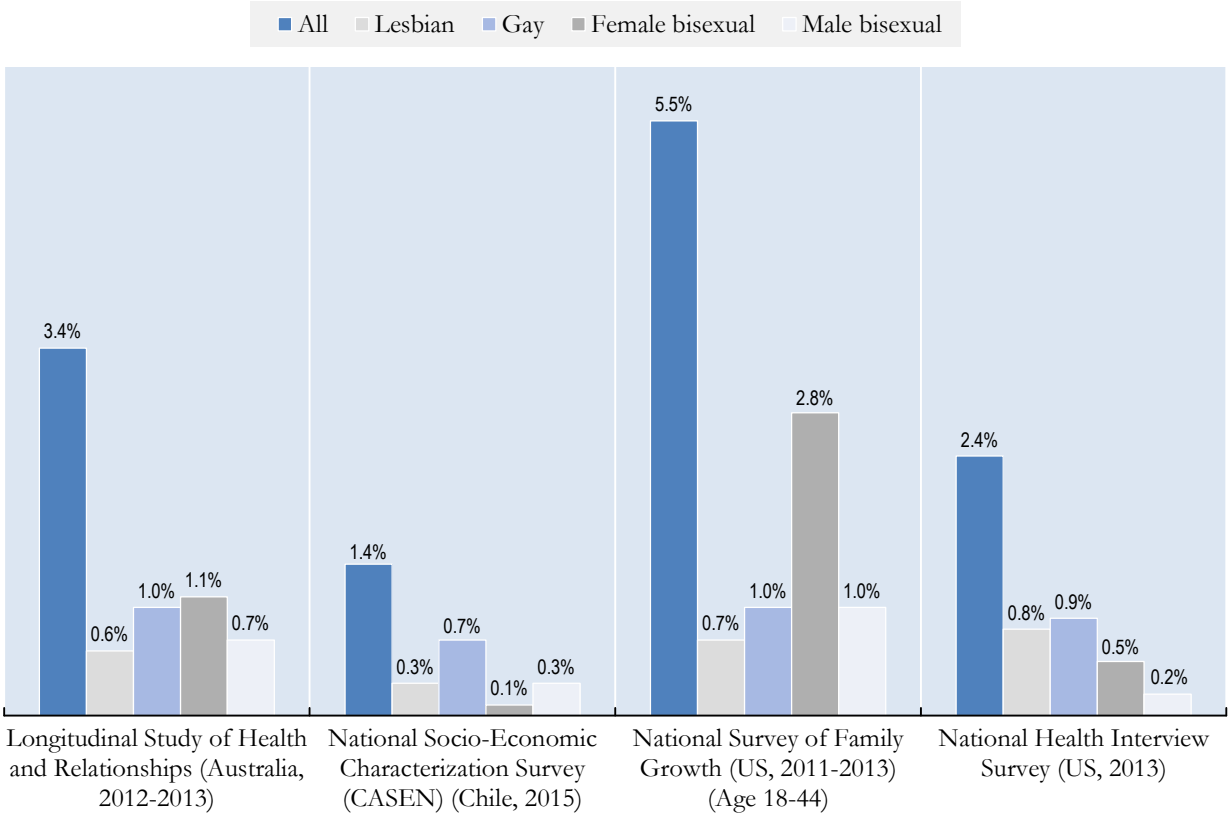
29 It is only starting from waves 3 and 12 that a measure of sexual orientation is available in the UKHLS and HILDA survey respectively. Wave 3 of the UKHLS was collected over the two-year period 2011–2012 and wave 12 of the HILDA survey was mostly conducted during the second half of 2012.

30 In Chile, women are less likely to self-identify as both homosexual and bisexual.

31 Women stand for half of the sample in each population-based survey reported in Figure 2.3. In other words, the proportion of homosexuals and bisexuals should be equal among men and women, were gender orthogonal to the probability of self-identifying as LGB.

32 Age categories are created so that they encompass half of the sample in each population-based survey reported in Figure 2.4 : 16-39 and 40-69 in the Longitudinal Study of Health and Relationships (Australia, 2012-2013), 18-44 and above 45 in the National Socio-Economic Characterization Survey (CASEN) (Chile, 2015) as well as in the National Health Interview Survey (US, 2013). In other words, the proportion of homosexuals and bisexuals should be equal among the different age categories, were age orthogonal to the probability of self-identifying as LGB. The National Survey of Family Growth (US, 2011-2013) is not included in Figure 2.4 since it focuses on a narrow age range (18-44).

**Figure 2.3. Proportion of adults who self-identify as LGB, by gender**

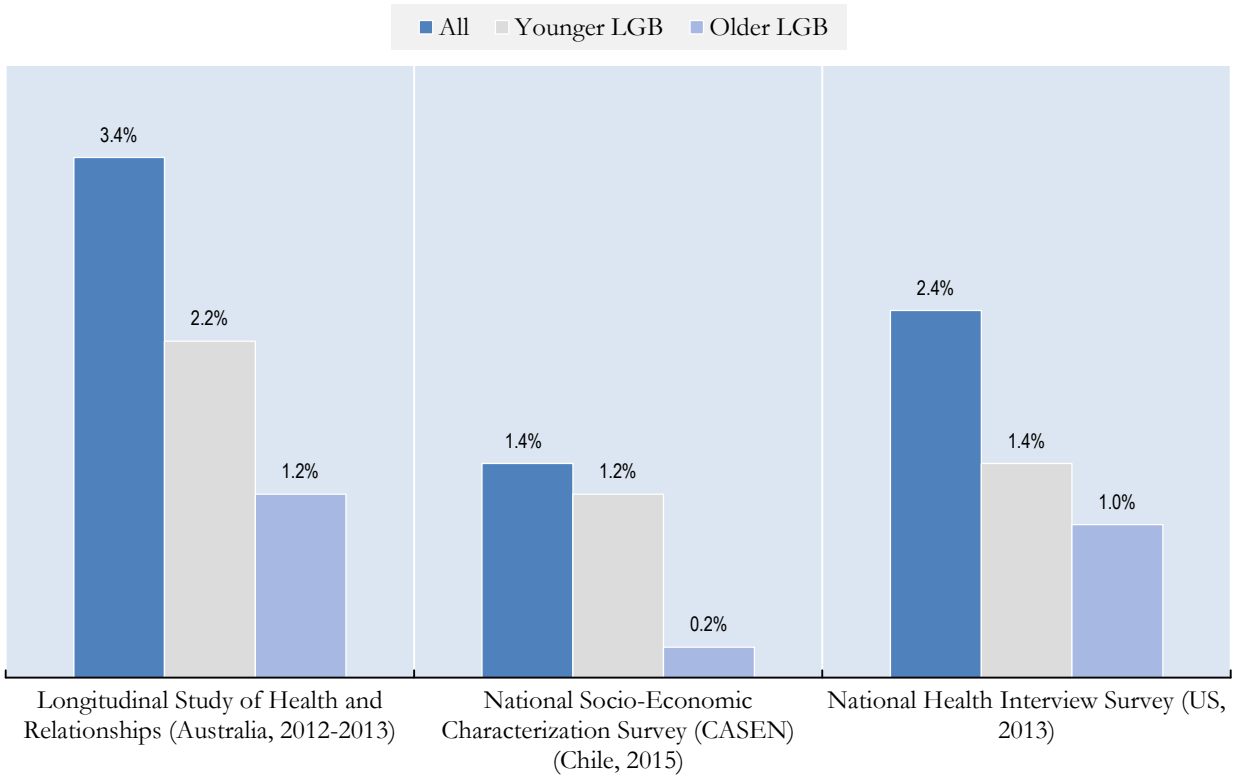



*Source*: Author's calculation based on Richters et al. (2014), Ward et al. (2014), the 2015 CASEN dataset and Copen, Chandra and Febo-Vazquez (2016).



For Official Use

**Figure 2.4. Proportion of adults who self-identify as LGB, by age**




*Source*: Author's calculation based on Richters et al. (2014), Ward et al. (2014) and the 2015 CASEN dataset.

## 2.2. Estimates for the size of the transgender population

22. Estimates for the size of the transgender population are even scarcer than estimates for the size of the LGB population. The Behavioral Risk Factor Surveillance System (BRFSS) in the US is the first large population-based survey to collect information on gender identity (since 2014). More precisely, the BRFSS contains optional module questionnaires in addition to its standard questionnaire. One of the modules includes a question on gender identity: "Do you consider yourself to be transgender?" Yes/No. [If Yes] "Do you consider yourself to be male-to-female, female-to-male, or gender non-conforming?" [33] This module was conducted in 19 and 22 of the 50 US states in 2014 and 2015 respectively. Relying on this survey, Flores et al. (2016) estimate that 0.6% of US adults identify as transgender, a potentially lower bound of the true proportion of transgender people for two reasons. First, the question on gender identity was not self-completed by the respondents, but asked on the phone. Second, this question refers to the word "transgender", a terminology that may not be easily understood by the respondents, and mixed up with the word "transsexual".[34]

[33] See The Williams Institute (2014) for best practices for asking questions to identify trangender and other gender minority respondents.

[34] *If asked for a definition of transgender*, the interviewer had to provide the following answer: "Some people describe themselves as transgender when they experience a different gender identity from their sex at birth. For example, a person born into a male body, but who feels female or lives as a woman would be transgender. Some transgender people change their physical appearance so that it

23. The 2015 National Socio-Economic Characterization Survey (CASEN) in Chile is the second (and last) population-based survey to date to include a question on gender identity. This question does not refer to the word "transgender". Rather, it asks the gender ("feminine", "masculine", or "other *[i.e. gender non-conforming]*") with which the interviewee identifies. Comparing responses to the "assigned sex at birth" question with responses to the "gender identity" question yields a proportion of transgender people greater than the one found in the US: 2.7% of the Chilean population.[35]

24. It is interesting to note, based on CASEN 2015, that individuals who were born male are more likely to report a gender identity that differs from their biological sex at birth than are those who were born female. Consequently, the proportion of male-to-female transgender people (1.5%) is greater than the proportion of female-to-male transgender people (1.2%).[36] Based on the 2014 and 2015 BRFSS, Carpenter, Eppink and Gonzales (2016) report a similar pattern: transwomen stand for a greater share of transgender people (51%) than transmen (31%), with the remaining 18% standing for gender non-conforming transgender people.

25. Finally, consistent with Section 2.1, the probability to report a transgender identity decreases with age. In Chile, it falls from almost 3% among people between 18 and 24, to 2.7% among people between 25 and 64 and 2.5% among people above 65. Herman et al. (2017) provide consistent results based on the 2014 and 2015 BRFSS.

## 2.3. Estimates for the size of the LGBT population

26. This section provides estimates for the size of the LGBT population based on US data. The United States indeed collect direct information on sexual orientation with one of the highest frequencies among OECD countries. Consequently, US data allow computing estimates that are both recent and unlikely to constitute outliers since they flow from averaging various measures of the LGB population. Moreover, as already stressed, the United States is the only country with Chile that conducts population-based surveys including questions on gender identity.

27. Averaging the proportion of LGB across the seven population-based surveys recently conducted in the US (see Figures 2.2 and 2.3) yields a mean estimate equal to 3.5%. This figure is conservative since it relies on sexual self-identification known to yield lower proportions than sexual behaviour or attraction.

28. According to Carpenter, Eppink and Gonzales (2016), a large majority (77%) of transgender individuals in the US self-identify as heterosexual, which implies that roughly 0.5% (=77%*0.6%) of US adults are heterosexual transgender individuals. Combining this figure (to avoid double counting transgender people who self-identify

matches their internal gender identity. Some transgender people take hormones and some have surgery. A transgender person may be of any sexual orientation – straight, gay, lesbian, or bisexual."

[35] CASEN relies on face-to-face interviewing. As compared to telephone interviewing, this survey method may induce both a downward and upward bias when estimating the size of the transgender population. The bias may be downward (thereby leading to an underestimate of the transgender population) if face-to-face interviewing increases respondents' tendency to social desirability. But the bias can be upward (thereby leading to an overestimate of the transgender population) if transgender people are more likely to be unemployed and, hence, at home during the visit of the interviewer. Indeed, the "gender identity" question in CASEN is asked only to those members of the household who are present.

[36] Based on CASEN, the proportion of respondents who self-identify as gender non-conforming transgender individuals is minuscule in Chile.

as LGB) with the mean percentage of LGB leads to a proportion of LGBT equal to 4.0% of the US population.

29. This estimate almost coincides[37] with Gallup's most recent measurement of the LGBT population in the US (4.1%), based on telephone interviews conducted in 2016. It suggests that lesbians, gay men, bisexuals and transgender people constitute a sizeable minority. As a comparison, Muslims, another minority at high risk of discrimination (see Adida, Laitin and Valfort (2016)) stood for 0.8% of the US population in 2010 (Pew Research Center (2010)).[38]

## 2.4. Estimates for the size of the intersex population

30. The word "intersex" relates to sex characteristics that do not fit typical binary notions of male or female bodies. Intersex people are born with physical, hormonal or genetic features that are neither wholly female nor wholly male; or a combination of female and male; or neither female nor male.

31. Due to the *complete* absence of questions on individuals' intersex status in population-based surveys, there is no compelling evidence to date on whether intersex people stand out in terms of socioeconomic characteristics. For this reason, and regrettably, the group of intersex people cannot be analyzed with the same detail as other sexual and gender minorities in this review.

32. This lack of evidence does not mean, however, that intersex inclusivity is a minor issue. First, contrary to conventional wisdom, intersex people constitute, like LGBT, a sizeable minority. As recalled in the definition provided in Section 1, this group does not only include individuals born with atypical genitalia. It also comprises individuals born with subtler forms of physical, hormonal or genetic features that make them intersex, and will be "discovered", if at any time, only until later in life (e.g. during puberty). To date, two studies have tried to provide a comprehensive estimate of the intersex population, based on a meta-analysis of medical research articles. Their measure varies from 0.5% (van Lisdonk (2014)) to 1.7% (Blackless et al. (2000)), leading to an average proportion of 1.1%.[39] Second, intersex people face a wide range of specific challenges. These challenges are summarized in Sections 3.1. and 3.2.

33. Based on a convenience sample[40] in Australia, Jones et al. (2016) show that 52% of intersex respondents self-identify as LGB and that 8% self-identify as transgender.

37 See http://www.gallup.com/poll/201731/lgbt-identification-rises.aspx?g_source=Social%20Issues&g_medium=newsfeed&g_campaign=tiles (last accessed on January 25, 2017).

38 It is important to stress that Dalia, a Berlin-based survey company conducting polls through self-administered questionnaires on mobile phones, has recently provided a much larger estimate than Gallup of the LGBT population in the US: 12.1% as of December 2016. This is more than double the highest estimates from US population-based surveys (e.g. the 2009 National Survey of Sexual Health and Behaviour reported in Figure 2.2). Dalia also reports high estimates (5.9%) for the proportion of LGBT in the EU in 2016. This is much larger than the 2.5% of LGB found by the 2011-2012 UKHLS, despite the fact that this survey was also based on a self-administered questionnaire. See https://medium.com/@DaliaResearch/americans-are-twice-as-likely-as-europeans-to-identify-as-lgbtq-44153d4b46c6#.htv53ar9x (last accessed on March 2, 2017).

39 According to Rich et al. (2016), an increasing number of children are born with intersex features. This evolution is explained by increasing exposure of fetuses to endocrine-disruptive chemicals.

40 Convenience samples are the opposite of population-based samples. Indeed, as stressed by Wikipedia, "convenience sampling is a type of non-probability sampling that involves the sample being drawn from that part of the population that is close to hand. That is, a sample population selected because it is readily available and convenient, as researchers are drawing on relationships or networks to which they have easy access. The researcher using such a sample cannot scientifically make generalizations about the total population from this sample because it would not be representative enough."

The proportion of intersex people who self-identify as LGB or transgender therefore amounts to 60%, assuming no overlap across LGB and transgender intersex people.

34. Relying on this conservative assumption, heterosexual cisgender intersex individuals would stand for 0.4% (=40%*1.1%) of the population. Combining this figure with the mean percentage of LGBT in the US population leads to a proportion of LGBTI equal to 4.4%.

# 3. Attitudes toward LGBTI, LGBTI rights and the perception of discrimination among LGBTI

35. To what extent are LGBTI accepted by the general public? Do sexual and gender minorities benefit from LGBTI-inclusive laws? Do LGBTI feel discriminated against? Addressing these questions is an important step toward investigating the possibility of an LGBTI penalty.[41]

## 3.1. Attitudes toward LGBTI

36. Cross-country surveys on attitudes toward homosexuals have been conducted since 1981. But international measures of attitudes toward transgender and intersex people are more recent, with data first collected in 2012 and 2016 respectively.

### *3.1.1. Acceptance of homosexuality*

37. Currently available cross-continent survey data include two questions that can be used for an analysis of the acceptance of homosexuality. The first question, already presented in Section 1, captures the degree to which homosexuality is considered as "justifiable", on any ground, by the respondent: "Please tell me whether you think homosexuality can always be justified, never be justified, or something in between, using this card". It stems from four data sources (the AsiaBarometer, the European Values Survey (EVS), the Latinobarometro and the World Values Survey (WVS)) and is part of a battery of several questions about controversial behaviours and issues (e.g. abortion, divorce, euthanasia, prostitution, etc.). The second question, which is included in the AmericasBarometer, the EVS, the Latinobarometro and the WVS (see below), reflects whether the respondent would be comfortable with homosexuals as neighbours.[42]

38. The first question is preferred over the second for two reasons:

39. First, the wording for the "comfortable with homosexuals as neighbours" question slightly differs from a survey to the other, while it does not for the "homosexuality justifiable" question. More precisely, the AmericasBarometer is the only survey where the question explicitly refers to "homosexuals": "Are you comfortable with homosexuals as neighbours?"[43]. In the other surveys, respondents have to choose the group(s) of people they would *not* like to have as neighbours, among a list that includes "homosexuals" or "gays": "Could you please sort out any that you would not like to have as neighbours?" ("Homosexuals" included in the list) in the EVS/WVS

[41] Roeland et al. (2016) aggregate comprehensive information from European countries on the legal, political and social acceptance of LGBT to get the "SOGIE (Sexual Orientation Gender Identity and Expression) minorities' societal positioning index."

[42] A third question would be the one included by Gallup in their yearly cross-country survey: "Is the city or area where you live a good place or not a good place to live for gay or lesbian people?". However, this question provides less a measure of respondents' own attitude toward homosexuality than of their perception of local social acceptance of gay men and lesbians. Moreover, this question has been asked only starting from the late 2000s, which limits the possibility to study the evolution of attitudes toward homosexuality over time. Nevertheless, results obtained with the "good place to live for gay an lesbian people" question are consistent with those derived from the "homosexuality justifiable" question.

[43] With the following answer options: "Do not have a problem with having them as neighbors" or "Do not want them as neighbors", on top of the standard "Don't know" and "No response"

and "In this list you have several groups of people. Can you select if there are any of them you would not like to have as neighbours?" ("Gays" included in the list) in the Latinobarometro.[44]

40. Second, in surveys where a list is proposed, no selection of the "homosexuals" or "gays" items by the respondents is considered as equivalent to them stressing their comfort with homosexuals as neighbours. Yet, this procedure can lead to overestimate acceptance of homosexuality. Individuals who do not select "homosexuals" or "gays" might indeed not express their acceptance of homosexuality but, rather, their indifference. Such behaviour may also reflect that the respondent lives in a country where homosexuality is so socially unacceptable that it is a taboo.

41. For these reasons, Section 3 relies on the "homosexuality justifiable" question. It is important to stress, however, that the results presented below are robust when the "comfortable with homosexuals as neighbours" question is used instead.

### *3.1.2. Evolution of acceptance of homosexuality*

42. OECD countries show higher levels of acceptance of homosexuality than other countries. This pattern was already apparent in Figures 1.1 and 1.2 and is confirmed in Figure 3.1, which provides the average[45] answer to the "homosexuality justifiable" question during the periods from 1981 to 2000 and from 2001 to 2014, in both non-OECD and OECD countries.[46] Figure 3.1 also corroborates the general shift toward greater acceptance documented by previous studies (Inglehart and Welzel (2005), Anderson and Fetner (2008a, 2008b), Smith (2011) and Smith, Son and Kim (2014)[47]).

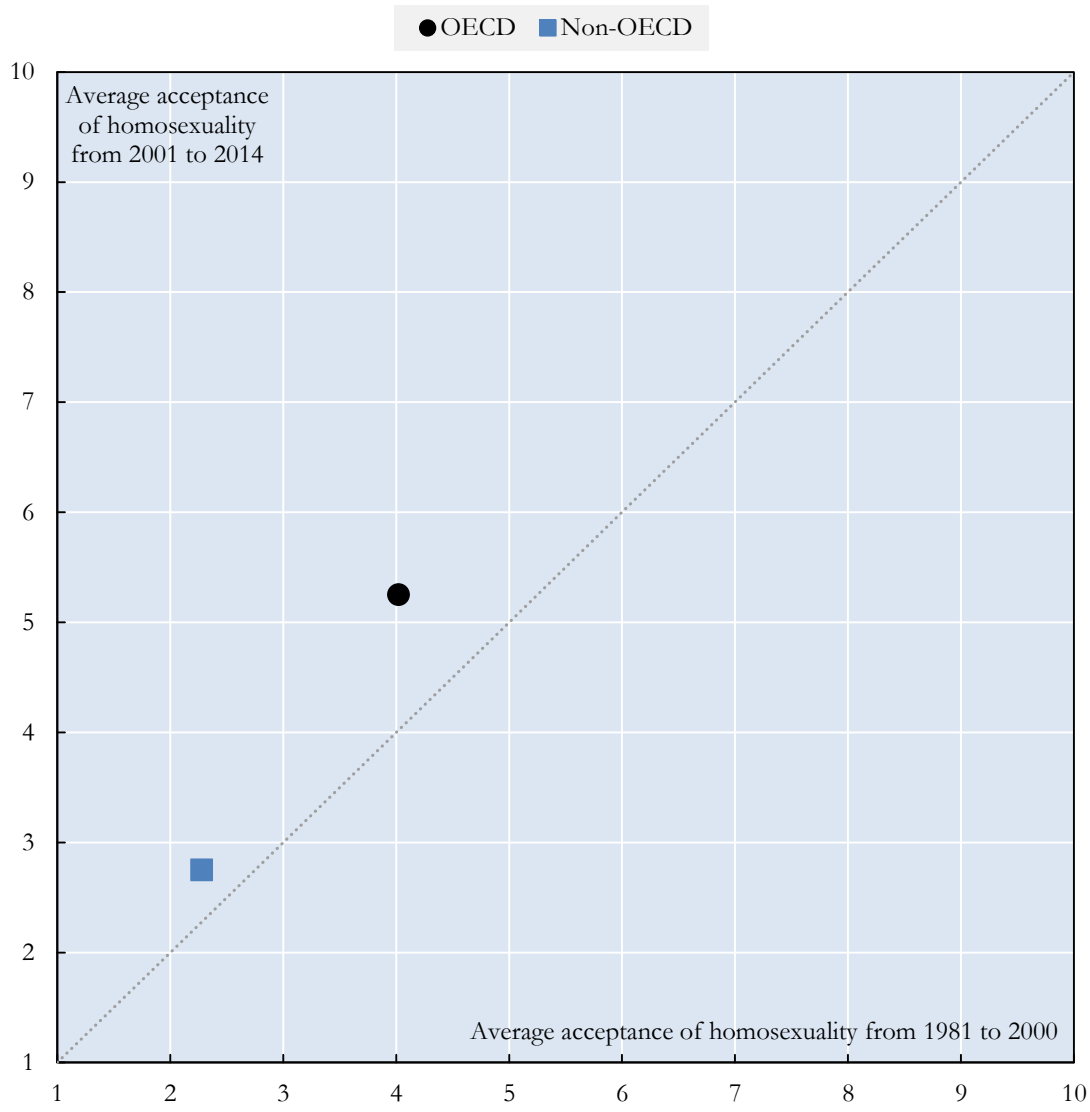
44 Other cross-country surveys that include questions on the acceptability of homosexual neighbors could theoretically be added to the analysis. However, this would further increase the cross-survey heterogeneity in the wording of the "comfortable with homosexuals as neighbors" question. As an illustration, respondents to the last round of the Afrobarometer (2014-2015) could stress whether they would (i) "strongly dislike," (ii) "somewhat dislike," (iii) "not care," (iv) "somewhat like" and (v) "strongly like" a homosexual neighbor.

45 This average is computed as follows: First, for each survey, a weighted average of the answer to the "homosexuality justifiable" question by country and year is produced. Second, for each country and year, averages are calculated over several surveys (averaging across surveys allows for smoothing survey-specific effects). Third, averages over the 1980-2000 and 2001-2016 periods are computed for each country. Finally, the average for each region (non-OECD and OECD countries) and period is calculated.

46 In Figure 3.1, for the sake of comparability of the regional averages over time, only countries surveyed in both periods are included. There is no such restriction in Figure 3.2 that focuses on country, not regional averages.

47 The first three of these five studies focus on the World Values Survey, the fourth on the International Social Survey Programme and the fifth on a mix of cross-country surveys. The analysis presented here has the advantage over these previous studies to cover a longer time-period and to pool answers from a wider range of different surveys, thereby smoothing survey-specific effects on top of improving geographic coverage.

**Figure 3.1. Evolution of the acceptance of homosexuality in non-OECD and OECD countries between 1981-2000 and 2001-2014**

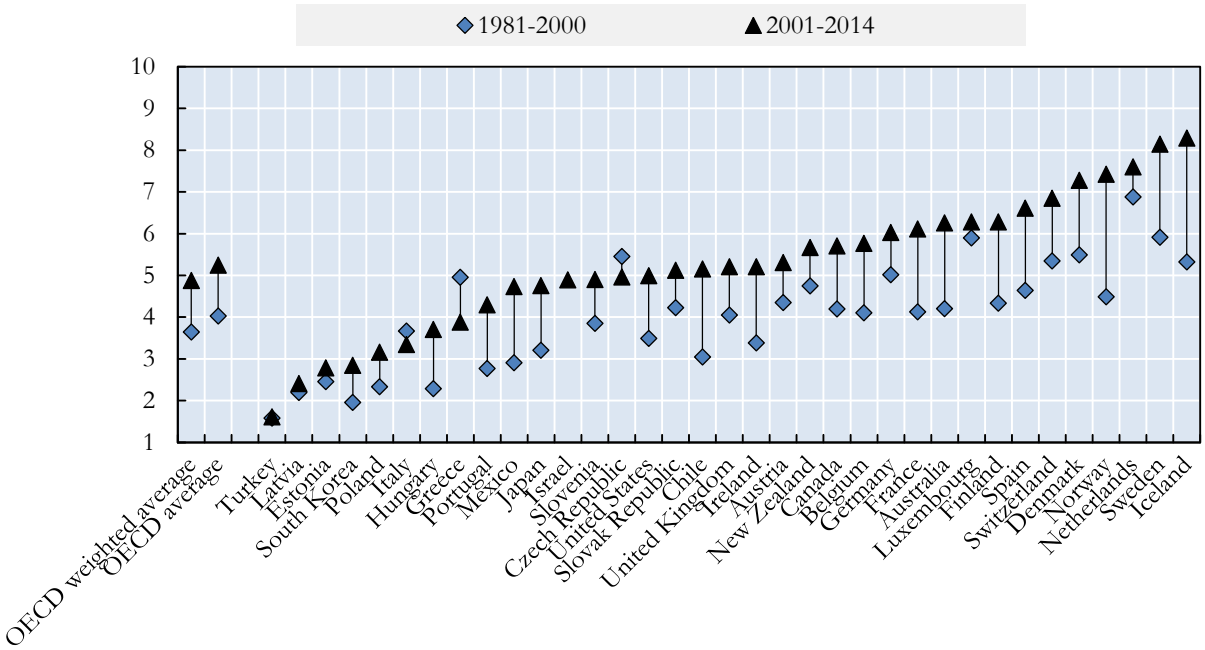



*Source*: AsiaBarometer, European Values Survey, Latinobarometro and World Values Survey.

43. Despite this shift, however, homophobia remains widespread. As shown in Figure 3.2, even across OECD countries, which rank among the most tolerant countries worldwide, the population-weighted average score is lower than 5 on the "justifiability of homosexuality" scale, while the non-weighted average lies just above 5. Yet, this average masks important cross-country disparities. Although attitudes toward homosexuality improve across the board,[48] the score of Iceland (8.3) is more than five times as high as that of Turkey (1.6).

[48] The Czech Republic, Greece and Italy are the only three OECD countries characterized by a decrease in acceptance of homosexuality. However, this pattern is likely a statistical artefact. Indeed, these three countries have hosted only one survey during the 2001-2014 period, while more than two have been conducted on average in the other OECD countries. Consequently, estimates

**Figure 3.2. Evolution of the acceptance of homosexuality in OECD countries between 1981-2000 and 2001-2014**




*Source*: AsiaBarometer, European Values Survey, Latinobarometro and World Values Survey.

44. Improvements in attitudes toward homosexuality are greater in countries that have actually engaged in LGBT-inclusive laws over the same period (see Figure 3.3). OECD countries that have legalized same-sex marriage by 2014 show greater acceptance of homosexuality during the entire 1981-2014 period. But the gap that separates these countries from OECD countries where same-sex marriage is still illegal widens starting from the early 2000s, when the first same-sex marriage laws were passed (see Table 3.2 in Section 3.2 for the list of countries that have legalized same-sex marriage and the year of this legalization). Consistent with this finding, Flores and Barclay (2016) show that residents of US states that adopted same-sex marriage report the greatest reduction of anti-gay attitudes after adoption (see also Kreitzer, Hamilton and Tolbert (2014)). Similarly, Hooghe and Meeusen (2013) demonstrate a strong positive correlation between acceptance of homosexuality and same-sex marriage legislation in Europe (see also Takacs, Szalma and Bartus (2016) for the positive relationship between support to adoption by same-sex couples and the existence of legislation permitting same-sex adoption practices in 28 European countries).

45. However, little is known on whether these relationships reflect LGBT-inclusive laws leading to greater acceptance of sexual and gender minorities or the reverse (since greater acceptance of LGBT could already be at work prior to the enactment of such laws), or even the existence of a confounding third factor (e.g. changes in

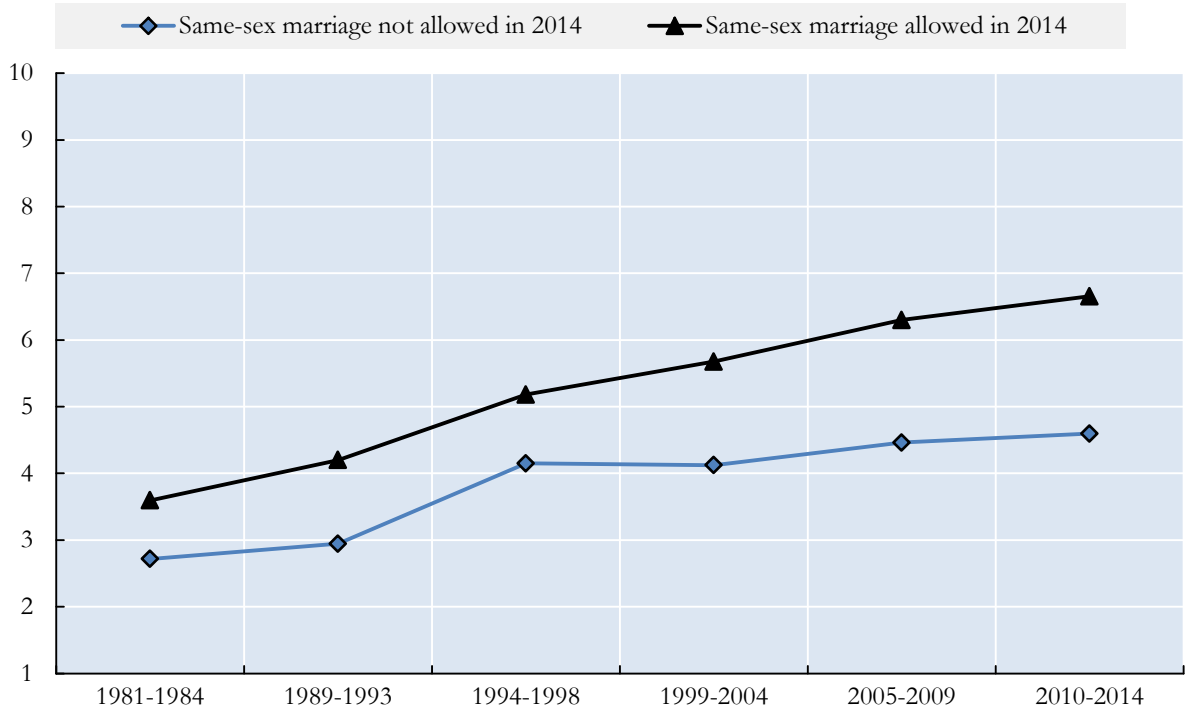
for the 2001-2014 period are based on a much lower average number of observations (N=1,444 for the Czech Republic, Greece and Italy as opposed to N=3,044 in the other OECD countries).



For Official Use

income or education levels) which co-determines both legal and social acceptance of LGBT (see Section 6 for a discussion[49]).

**Figure 3.3. Evolution of the acceptance of homosexuality in OECD countries, depending on whether they have legalized same-sex marriage as of 2014**




*Note:* The 22 OECD countries where same-sex marriage is not allowed in 2014 are Australia, Austria, Chile, Czech Republic, Estonia, Finland, Germany, Greece, Hungary, Ireland, Israel, Italy, Japan, Latvia, Luxembourg, Poland, Slovak Republic, Slovenia, South Korea, Switzerland, Turkey and the United States. The 13 countries where same-sex marriage is allowed (or partly allowed) in 2014 are Belgium, Canada, Denmark, France, Iceland, Mexico, New Zealand, Netherlands, Norway, Portugal, Spain, Sweden and the United Kingdom.
*Source*: European Values Survey and World Values Survey.

46. The same type of social desirably bias that leads LGBT to underreport in surveys (see Section 1) may also affect responses on attitudes toward LGBT. Some scholars wonder whether improvements in attitudes toward homosexuality could result from respondents' greater tendency to make a positive impression when surveyed (Coffman, Coffman and Ericsson (2016)). Although there is no evidence to date on this issue, few studies have tested for the existence of social desirability nowadays, when people are asked about their attitudes toward LGBT-related topics. Relying on the item count technique (ICT) presented in Section 2.1, these studies provide mixed results. Coffman, Coffman and Ericsson (2016) reveal that the ICT increases the rate of anti-gay sentiment in the US (as compared to self-administered questionnaires):

[49] Obviously, identifying a causal link is particularly critical when one seeks to inform policy makers. For instance, Stotzer (2010) reports that US schools with state-level and school-level policies that are more inclusive of LGB people declare higher rates of hate crime against these minorities. Yet, this difference is only correlational. As the author shows, it indeed stems from campuses with more supportive school and state policies being less prone to underreport sexual orientation-based hate crimes, as compared to campuses not subjected to these policies.

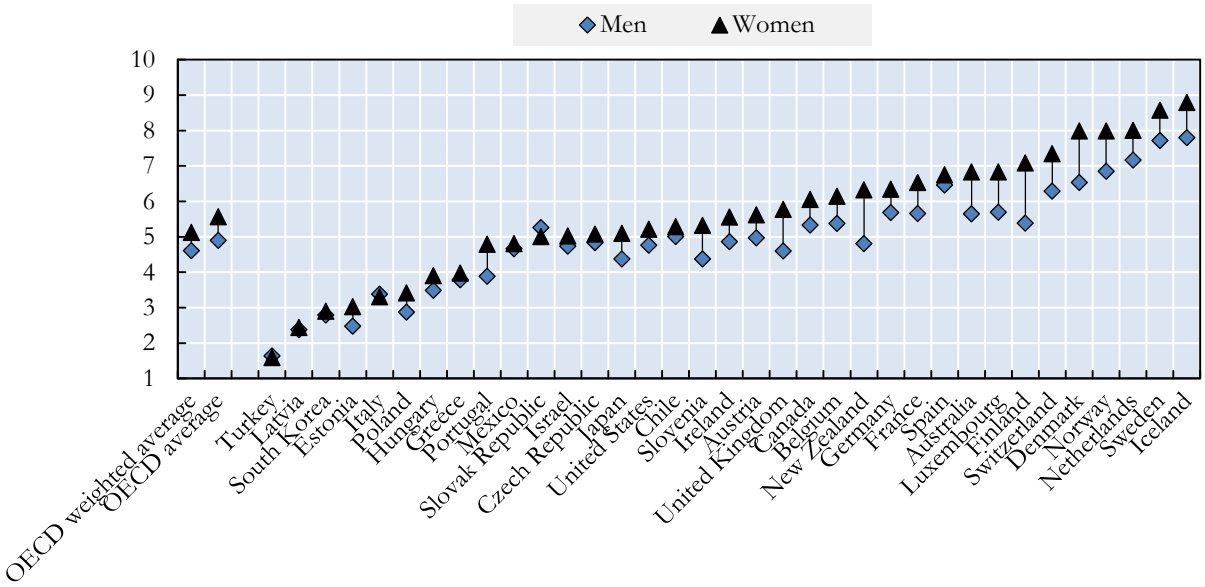
respondents are 67% more likely to express disapproval of an openly gay manager at work and 71% more likely to say it is okay to discriminate against lesbian, gay, or bisexual individuals.[50] By contrast, Lax, Phillips and Stollwerk (2016) find no evidence that social desirability drives respondents' support for same-sex marriage in the US.

47. These mixed results suggest that improvements in attitudes toward homosexuality at least partly reflect actual behavioural shifts. As a confirmation, the fraction of adults who identify as lesbian, gay, bisexual or transgender has been steadily increasing in the US, from 3.5% in 2012 to 4.1% in 2016 (a pattern already apparent in Figure 2.1).[51] These results indicate that disclosing one's sexual and gender minority status is considered less subject to social sanction over time and, hence, that behaviours (not just self-reported attitudes) toward LGBT are likely becoming more friendly.[52]

### *3.1.3. Attitudes toward homosexuality among different socio-economic groups*

48. Consistent with previous studies (Smith, Son and Kim (2014)), Figures 3.4 to 3.7 reveal that, during the period from 2001 to 2014, positive attitudes toward homosexuality are greater among (i) women, (ii) younger adults, (iii) the better educated and (iv) people living in urban areas.

**Figure 3.4. Acceptance of homosexuality in OECD countries (2001-2014), by gender**




*Source*: Barometer, European Values Survey, Latinobarometro and World Values Survey.

50 Consistent with social desirability, Powell (2013) finds that opposition to same-sex marriage is about 5% to 7% greater on election days than in preelection polls.

51 See http://www.gallup.com/poll/201731/lgbt-identification-rises.aspx?g_source=Social%20Issues&g_medium=newsfeed&g_campaign=tiles (last accessed on January 25, 2017). See also Jans et al. (2015) for further evidence that sexual orientation nonresponse has been strongly declining since the early 2000s in the US.

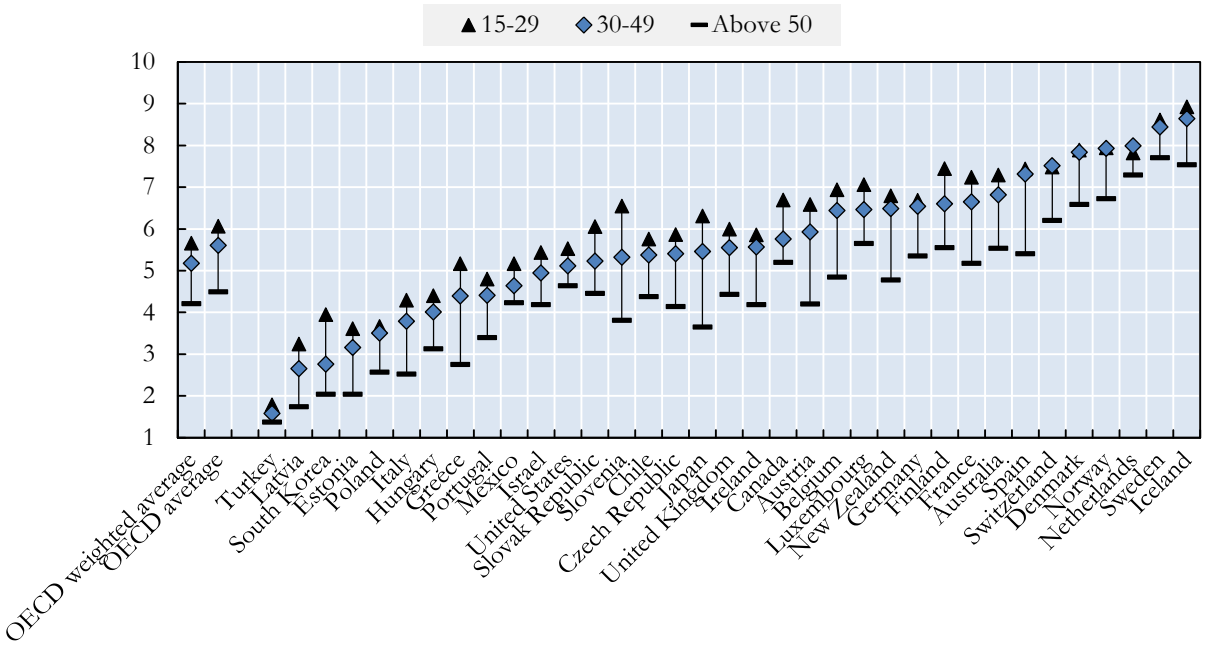
52 As a further confirmation, the Pew Research Centre (2013) shows that 92% of a sample of LGBT in the US consider that "society is more accepting of people who are LGBT today compared with 10 years ago."

49. Relying on a meta-analysis of 112 studies, Kite and Whitley (1996) show that men have less positive attitudes toward homosexuality than women – and that this result is driven by negative attitudes of men toward gay men. More precisely, the acceptance rates of lesbians and gay men by female respondents and that of lesbians by male respondents are similar. However, male respondents display more negative attitudes toward gay men than toward lesbians (and, consequently, than do female respondents). Gender norm violations might be particularly threatening for men who, even in the most inclusive societies, are still benefiting from a dominant position compared to women. Moreover, a contestation of power being more challenging when it comes from within, this threat may be perceived as especially serious when it is initiated by male peers. This situation could explain men's well-known greater adherence to traditional gender roles (Herek (1986)) and, hence, lower acceptance of homosexuality (Figure 3.4), particularly when it involves men.

50. Young people are more likely to show positive views on homosexuality (Figure 3.5). While the score on the "justifiability of homosexuality" scale reaches 5.7 for people aged between 15 and 29 (relying on the population-weighted average), this score drops to 4.2 for people above 50. As stressed by Smith, Son and Kim (2014), these age differences can have two different causes: (i) an ageing effect with individuals becoming less accepting as they grow older and (ii) a cohort effect stemming from different generations being raised at different points in time, with the youngest being submitted to social forces conducive to greater acceptance of sexual minorities. Evidence to date suggests that the cohort effect plays the greatest role in accounting for age differences, although the ageing effect has also been found to be at work in some countries.[53]

[53] Smith, Son and Kim (2014) perform a within-cohort analysis that reveals no substantial change in attitudes toward homosexuality over time and across countries, thereby suggesting that the age differences reported in Figure 3.5 are mainly driven by a cohort effect. However, focusing on Canada and the US, Andersen and Fetner (2008a) also find a remarkable degree of change over time within cohorts, especially in Canada, which questions the conventional wisdom according to which opinions on controversial social issues are formed by early adulthood and change little with age.

**Figure 3.5. Acceptance of homosexuality in OECD countries (2001-2014), by age group**



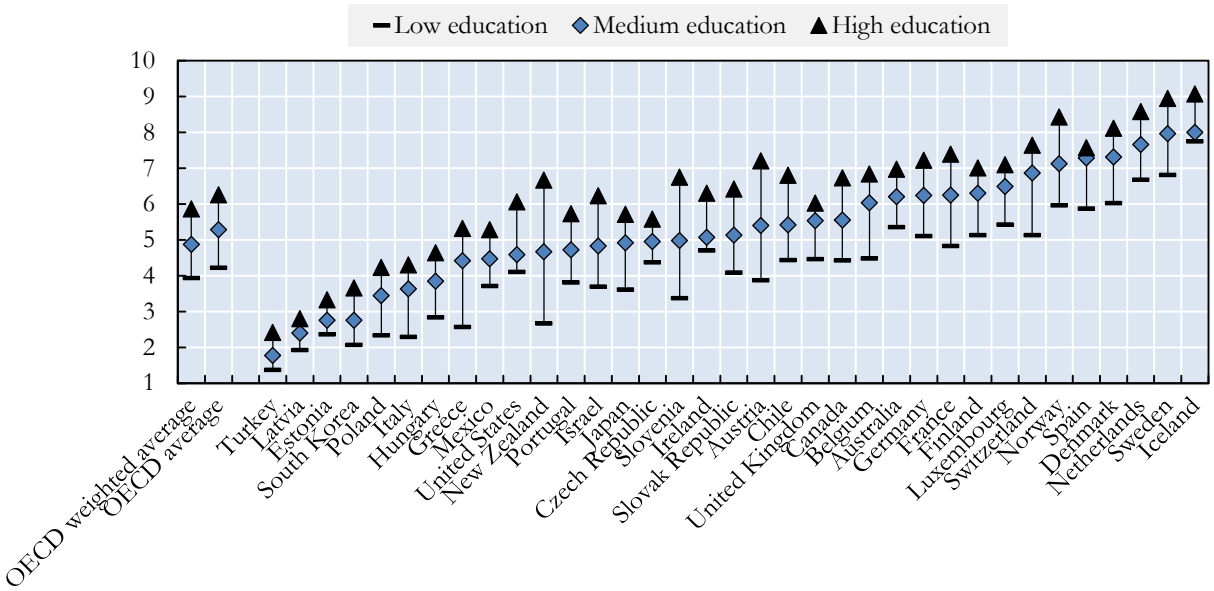

*Source*: AsiaBarometer, European Values Survey, Latinobarometro and World Values Survey.

51. Education seems to play a major role in explaining differences in attitudes toward homosexuality, as shown by Figure 3.6: relying on the population-weighted average, the score of individuals with a college education (5.9) is 2 points higher than that of individuals who have, at most, a lower-secondary education (3.9). Ohlander, Batalova and Treas (2005) suggest that this result is in part due to education's correlation with complex reasoning that enable individuals to show greater acceptance of nonconformity.



For Official Use

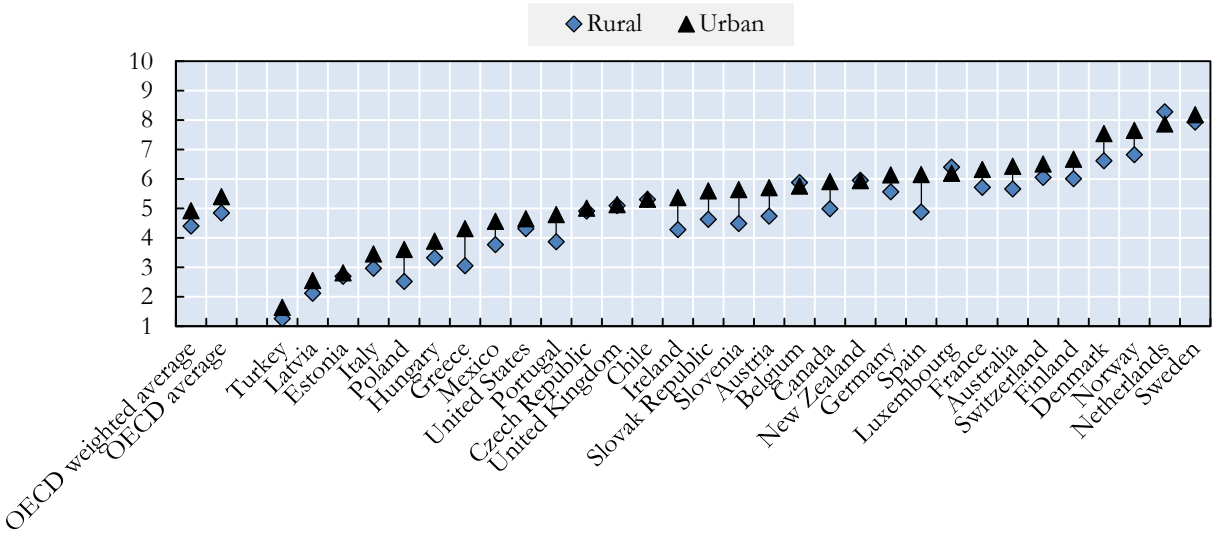
**Figure 3.6. Acceptance of homosexuality in OECD countries (2001-2014), by education level**




*Note*: Low education refers to lower secondary education or less. Medium education refers to upper secondary education or post-secondary non-tertiary education. High education refers to tertiary education.
*Source*: AsiaBarometer, European Values Survey, Latinobarometro and World Values Survey.

52. Finally, Figure 3.7 reveals slightly greater acceptance of homosexuality in urban than in rural settings. Consistent with this finding, Rosenfeld and Kim (2005) and Black et al. (2007) show that same-sex couples are significantly more likely to locate in urban areas than do opposite-sex couples.

**Figure 3.7. Acceptance of homosexuality in OECD countries (2001-2014), by location**




*Source*: AsiaBarometer, European Values Survey, Latinobarometro and World Values Survey.Add the source here. If you do not need a source, please delete this line.

### *3.1.4. Acceptance of transgender people*

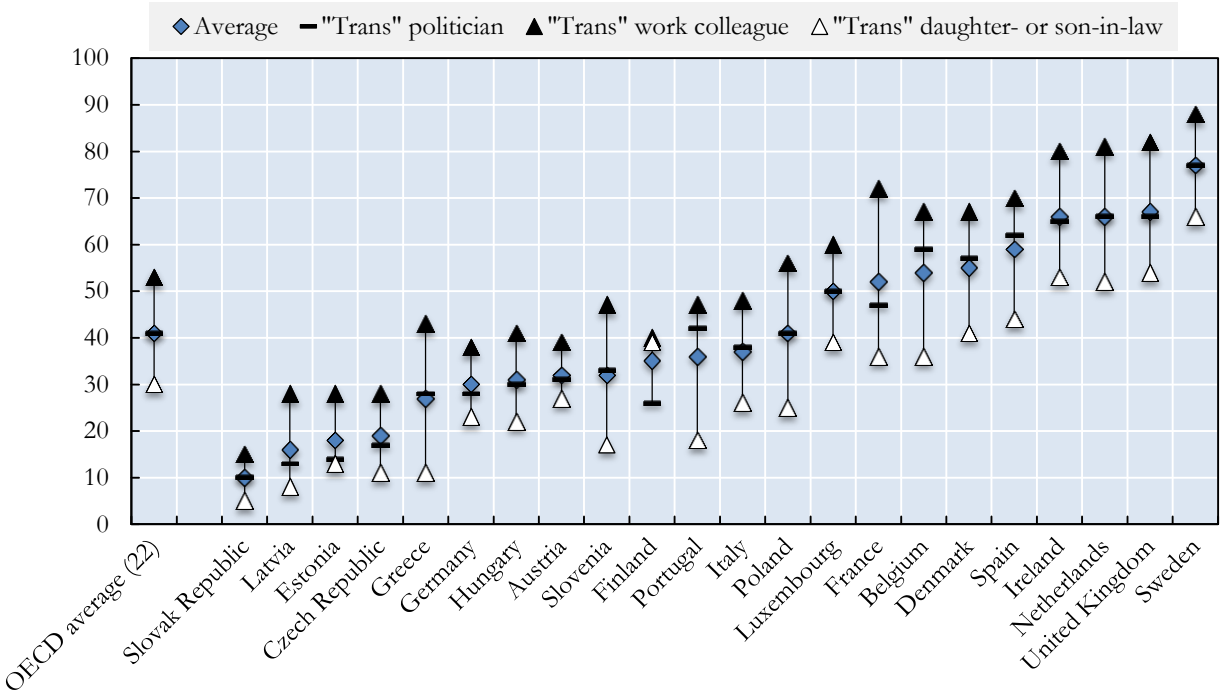
53. Cross-country surveys on attitudes toward transgender people are scarce and recent. The 2015 Eurobarometer on Discrimination includes three questions on attitudes toward transgender people (European Commission (2015)):

- "Using a scale from 1 to 10, please tell me how you would feel about having a transgender or transsexual person in the highest elected political position in [your country]. "1" means that you would feel "not at all comfortable" and "10" that you would feel "totally comfortable." (also asked in the 2012 Eurobarometer)
- "Regardless of whether you are actually working or not, please tell me, using a scale from 1 to 10, how comfortable you would feel if one of your colleagues at work was a transgender or transsexual person."
- "Regardless of whether you have children or not, please tell me, using a scale from 1 to 10, how comfortable you would feel if one of your children was in a love relationship with a transgender or transsexual person."

54. Moreover, the ILGA asks the following two questions in its 2016 cross-continent survey (see ILGA (2016b)):

- "If a male child always dressed and expressed himself as a girl, would you find that acceptable?"
- "If a female child always dressed and expressed herself as a boy, would you find that acceptable?"

**Figure 3.8. Acceptance of transgender people in OECD countries, based on the 2015 Eurobarometer**



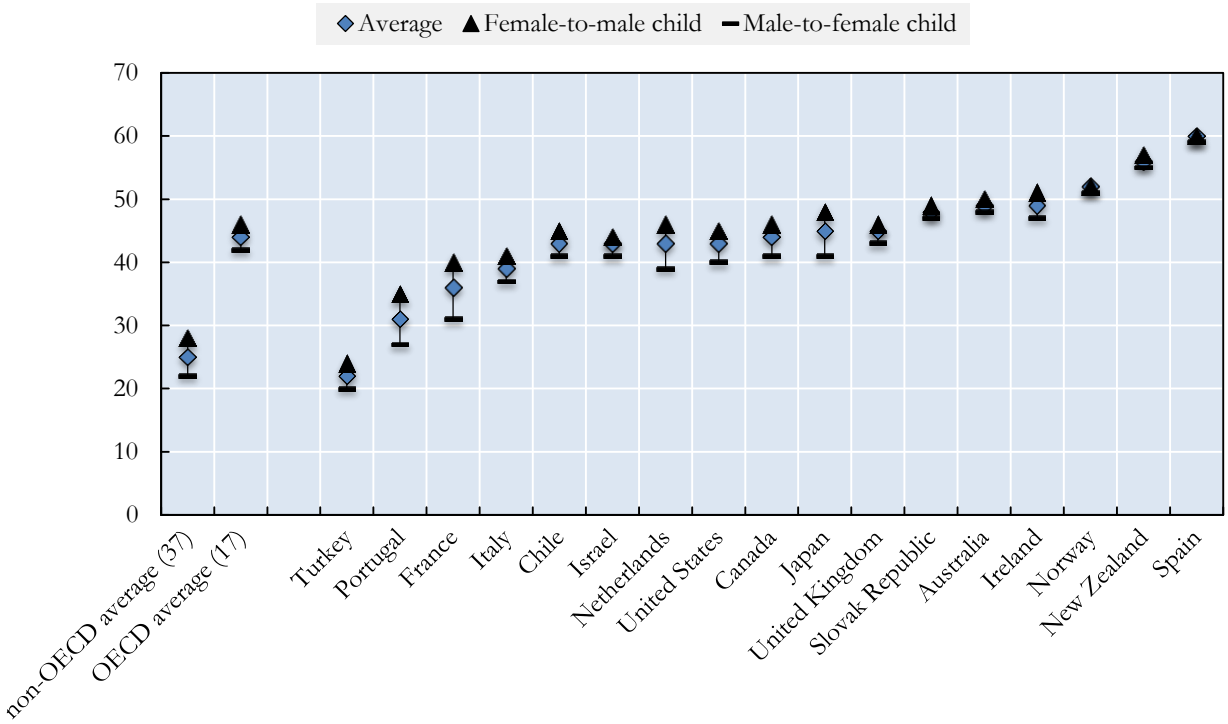

*Source*: 2015 Eurobarometer (European Commission (2015)).



For Official Use

55. Figures 3.8 and 3.9 provide the mean of responses to these various questions in OECD countries. They reveal widespread discomfort toward transgender people. In particular, less than half would accept a trans child. Yet, as shown in Figure 3.9, acceptance of transgender people remains higher in OECD countries than in non-OECD countries.[54]

**Figure 3.9. Acceptance of transgender children in OECD countries (and non-OECD countries), based on the 2016 ILGA survey**




*Source*: 2016 ILGA survey (ILGA (2016b)).

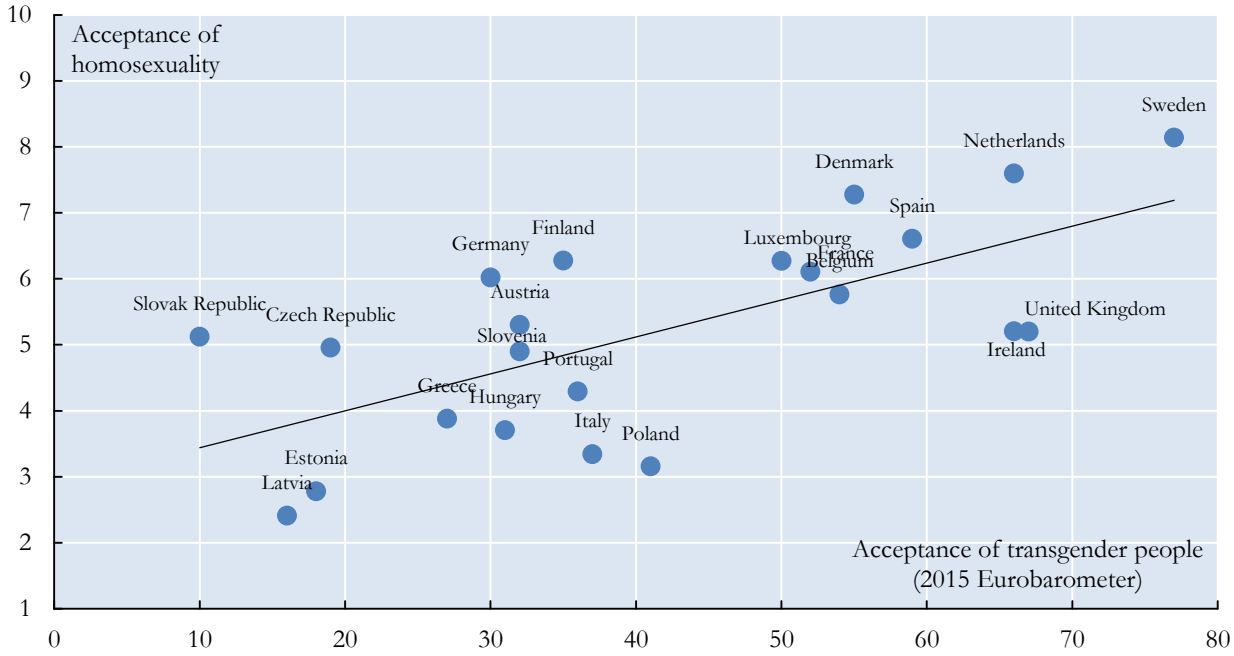
56. One expects a positive correlation between attitudes toward homosexuality and attitudes toward transgender people. Indeed, both attitudes are shaped by how strongly one endorses the essentialist view that people fall into two distinct gender identities (male and female) that match biological sex at birth and that feel sexual attraction to one another. Moreover, transgender people might be viewed as always displaying some form of homosexuality: even if they are sexually attracted only to people of the opposite sex at birth (and are, hence, "heterosexual" strictly speaking), their sexual orientation may still be perceived as same-sex to the extent that they are sexually

[54] The 2016 cross-continent ILGA survey covers 54 countries, among which 37 non-OECD countries. These non-OECD countries are Algeria, Argentina, Bolivia, Brazil, China, Colombia, Costa Rica, Croatia, Dominican Republic, Ecuador, Egypt, Ghana, India, Indonesia, Iraq, Jamaica, Jordan, Kazakhstan, Kenya, Malaysia, Morocco, Nicaragua, Nigeria, Pakistan, Peru, Philippines, Russia, Saudi Arabia, Serbia, South Africa, Trinidad and Tobago, United Arab Emirates, Uganda, Ukraine, Venezuela, Vietnam and Zimbabwe.

attracted to people with the same gender identity (a perception particularly likely if their gender identity matches their gender expression). [55]

57. Figures 3.10 and 3.11 confirm that acceptance of homosexuality constitutes a good proxy for acceptance of transgender people. They reveal a positive correlation between responses to the "justifiability of homosexuality" question and the average of questions on attitudes toward transgender people, as measured by the 2015 Eurobarometer (Figure 3.10) and by the 2016 ILGA survey (Figure 3.11).

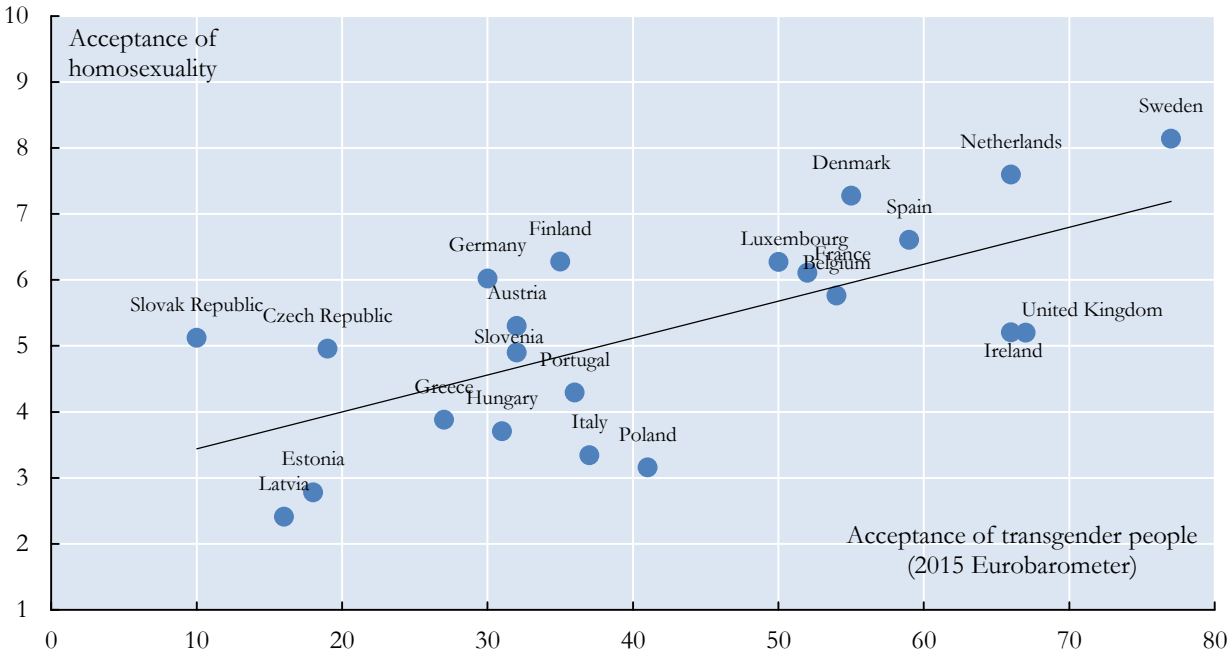
**Figure 3.10. Acceptance of homosexuality (2001-2014) and acceptance of transgender people based on the 2015 Eurobarometer, in OECD countries**




*Source*: 2015 Eurobarometer, AsiaBarometer, European Values Survey, Latinobarometro and World Values Survey.

55 As already mentioned, Carpenter, Eppink and Gonzales (2016) show that a large majority (77%) of transgender people self-identify as heterosexual in the US. However, it is unknown whether respondents define heterosexuality with respect to their sex a birth (meaning that heterosexual transgender people are attracted by people of the opposite sex and, hence, of the same gender), or with respect to their gender identity (meaning that heterosexual transgender people are attracted by people of the opposite gender and, hence, same sex at birth).

**Figure 3.11. Acceptance of homosexuality (2001-2014) and acceptance of transgender children based on the 2016 ILGA Survey, in OECD countries**




*Source*: 2016 ILGA survey, AsiaBarometer, European Values Survey, Latinobarometro and World Values Survey.

58. Consistent with the change in attitudes toward homosexuality, the 2015 Eurobarometer indicates a shift toward greater acceptance of transgender people, based on the evolution of answers to the "'trans' politician" question that was also asked in the 2012 Eurobarometer (European Commission (2012, 2015)). Moreover, socio-economic characteristics negatively correlated with homophobia also appear to be negatively linked to transphobia: women, younger and more educated people are more supportive of transgender people (see also Norton and Herek (2013) and Flores (2015) for similar findings based on attitudes toward transgender people in the US).

59. The 2015 Eurobarometer also reports more negative attitudes toward transgender than homosexual people, based on a comparison of answers to the "'trans' politician" question with answers to the "'homo' politician" question. This result is in line with Norton and Herek (2013) who find that attitudes toward transgender people are significantly less favourable than attitudes toward gay men, lesbians and bisexuals. Such difference might reflect that transgender people are considered "deviant" not only with respect to their gender identity but also with respect to their sexual orientation. Finally, a comparison of answers to the questions from the 2016 ILGA survey (see Figure 3.9) reveals more positive attitudes toward female-to-male than male-to-female transgender people.

### *3.1.5. Acceptance of intersex people*

60. Intersex people face extreme human rights violations directly from birth. Indeed, many intersex babies and children are subject to cosmetic genital surgery, mainly so that their bodies conform to the ideals of male or female. These medical interventions

are typically conducted at an age when the children are still much too young to give informed consent (while they can cause painful scarring, reduced sexual sensitivity, lower production of natural hormones with a risk of sterilization, etc.). In particular, intersex people cannot choose the sex they are assigned to, based on their gender identity.

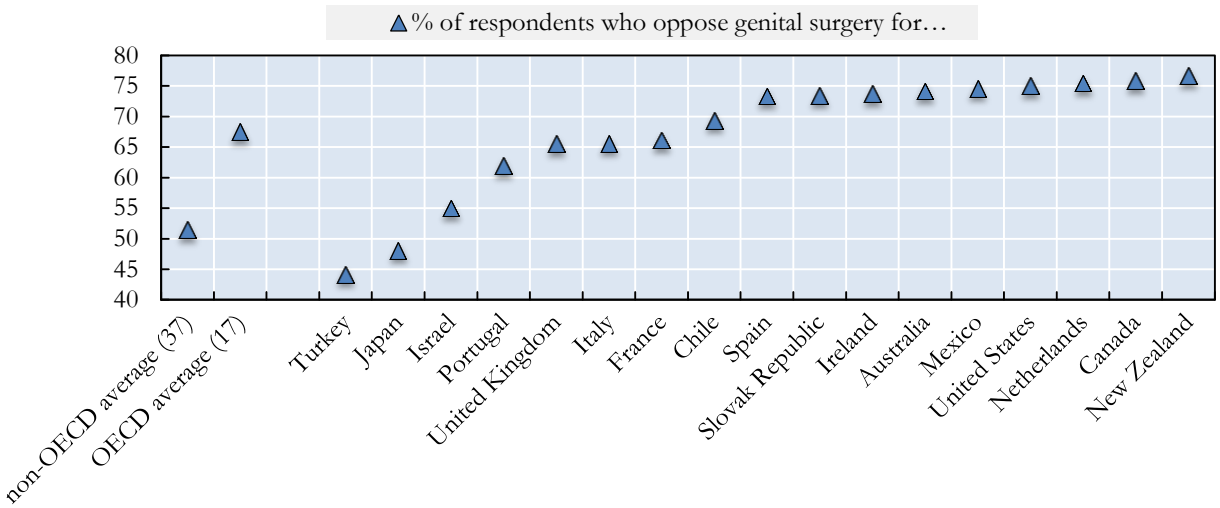
61. Acceptance of intersex people should therefore first and foremost involve opposing medically unnecessary sex assignment surgery on the sex characteristics of a minor, until the person can provide informed consent. This is what the unique question on attitudes toward intersex people in the 2016 ILGA survey is about[56]: "Do you think that children whose genitals are unclear at birth should be surgically assigned a gender by medical professionals? [Yes/No/Don't know]."

62. Figure 3.12 reports the proportion of respondents who provide a negative rather than positive answer, in OECD and non-OECD countries. It reveals that attitudes toward intersex people are more favourable in OECD countries, with 70% of respondents who oppose genital surgery for intersex children (as opposed to only 51.5% in non-OECD countries). Moreover, contrary to attitudes toward homosexuality, the cross-country disparity is low: only three of the 17 OECD countries reported in Figure 3.12 fall well below the OECD average (Turkey, Japan and Israel).

63. Again, one expects a positive correlation between attitudes toward homosexuality and attitudes toward intersex people. This expectation is confirmed by Figure 3.13.

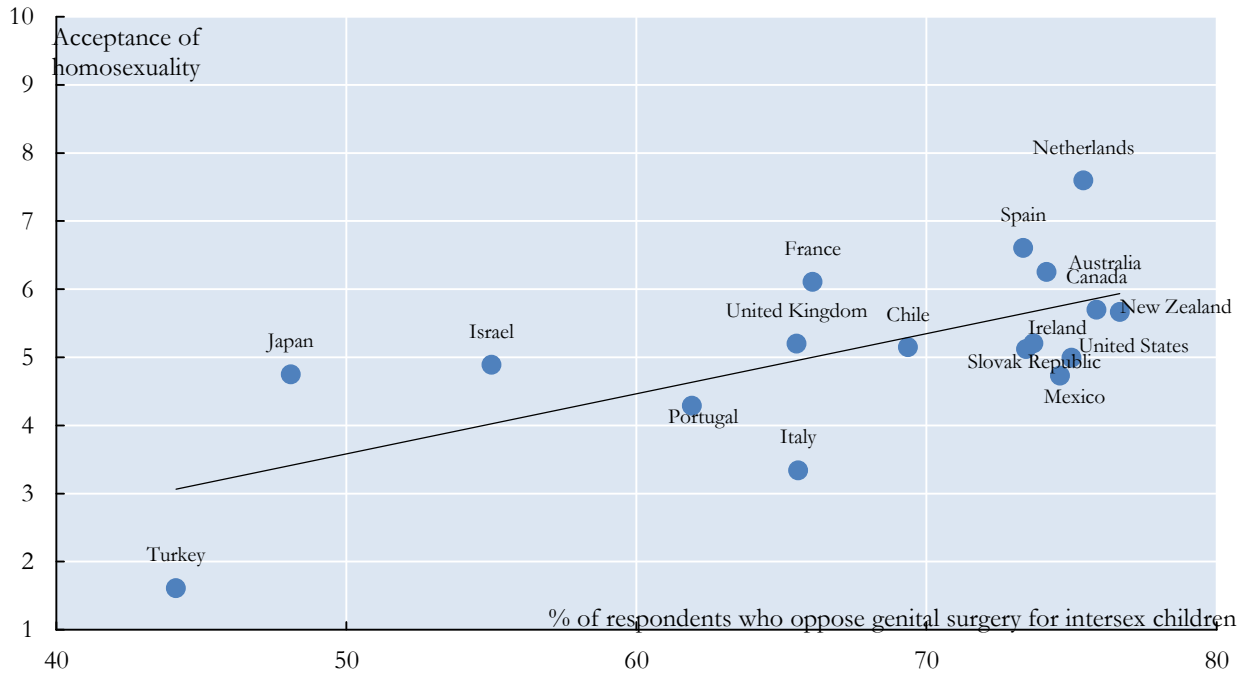
[56] ILGA intends to add more questions on attitudes toward intersex people in the future waves of its international survey.

**Figure 3.12. Acceptance of intersex children in OECD countries (and non-OECD countries), based on the 2016 ILGA survey**




*Source*: 2016 ILGA survey (ILGA (2016b)).Add the source here. If you do not need a source, please delete this line.

**Figure 3.13. Acceptance of homosexuality (2001-2014) and acceptance of intersex children based on the 2016 ILGA Survey, in OECD countries**




*Source*: 2016 ILGA survey (ILGA (2016b)).

## 3.2. LGBTI rights

64. Despite considerable room for improvement of attitudes toward LGBTI, one would expect at least the shift toward greater acceptance of these minorities to be accompanied by a rise in LGBTI-inclusive laws. This section investigates whether, indeed, homosexual, transgender and intersex people benefit from legal recognition in OECD countries.

### *3.2.1. Legal recognition of homosexuality*

65. Research hypothesizes that countries tend to go through a typical sequence of steps when legally recognising homosexuality: they first decriminalise homosexuality, then include sexual orientation in their anti-discrimination legislation, before finally providing legal recognition to same-sex partnership and family (Waaldijk (1994)[57]). In order to measure countries' progress toward recognizing homosexuality, Waaldjik proposes to construct a "Global Index on Legal Recognition of Homosexual Orientation" (GILRHO) index. This index stems from the responses to the following eight questions:

- Are homosexual acts between adults legal in criminal law?
- After decriminalisation, are age limits equal for homosexual and heterosexual acts?
- Is discrimination in employment based on sexual orientation explicitly forbidden in legislation?
- Is discrimination in the provision of goods and/or services based on sexual orientation explicitly forbidden in legislation?
- Is there any recognition in law of non-registered cohabitation by same-sex partners?
- Can same-sex couples enter into a registered partnership or civil union?
- Is second-parent and/or joint adoption by same-sex partner(s) legally possible?
- Can same-sex couples get legally married?

66. Each of these items are scored with either 0, 0.5 or 1 point. For instance, if relevant laws only apply in part of a given country (as is the case with same-sex marriage in Mexico, for example), half a point is given irrespective of the number of states, provinces, or regions where the laws apply.

67. Table 3.1 provides an augmented GILRHO index for OECD countries, as of 2016. On top of the eight items mentioned above, two aspects have been added that are considered as critical for LGB rights (ILGA (2016c)):

- Is discrimination based on sexual orientation constitutionally prohibited?
- Are hate crimes based on sexual orientation are considered an aggravating circumstance resulting in heavier sentences?[58]

68. On a scale from 0 to 10, OECD countries show an average score of 7, with a minimum of 2 (Japan, South Korea and Turkey) and a maximum of 10 (Finland, Portugal and Sweden). Ten countries feature a score of 9. Consistent with Waaldijk's

[57] Kees Waaldijk is a Professor of Comparative Sexual Orientation Law in Leiden University.

[58] ILGA has been publishing the "Rainbow Europe Index" since 2010, a summary of exhaustive information on the national legal and policy human rights situation of lesbian, gay, bisexual, trans and intersex (LGBTI) people in Europe (see ILGA Europe (2016)).

assumption, all OECD countries have engaged in decriminalizing homosexuality (i.e. the first of the three steps). Notably, in none of them are homosexual acts between adults illegal.[59]

[59] This decriminalization of homosexuality also concerns the majority of countries worldwide, although the remaining (those where same sex acts are illegal) still stand for a sizeable minority (72 countries, accounting for 37% of UN member states). Among them, 13 consider same-sex acts as crimes punishable by the death penalty, either officially or through local courts: Afghanistan, Iran, Iraq, Mauritania, Nigeria, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syria, United Arab Emirates and Yemen (ILGA (2016c)).

**Table 3.1. Augmented Global Index on Legal Recognition of Homosexual Orientation in OECD countries, as of 2016**

| | AUGMENTED GILRHO INDEX | DECRIMINALISATION | | ANTI-DISCRIMINATION | | | | PARTNERSHIP AND FAMILY RECOGNITION | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Are homosexual acts between adults legal in criminal law? | After decriminalisation, are age limits equal for homosexual and heterosexual acts? | Is discrimination in employment based on sexual orientation explicitly forbidden in legislation? | Is discrimination in the provision of goods and/or services based on sexual orientation explicitly forbidden in legislation? | Is discrimination based on sexual orientation constitutionally prohibited? | Are hate crimes based on sexual orientation considered an aggravating circumstance? | Is there any recognition in law of non-registered cohabitation by same-sex partners? | Can same-sex couples enter into a registered partnership or civil union? | Is second-parent and/or joint adoption by same-sex partner(s) legally possible? | Can same-sex couples get legally married? |
| Finland | 10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Portugal | 10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sweden | 10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Belgium | 9 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| Canada | 9 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Denmark | 9 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| France | 9 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| Iceland | 9 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| Luxembourg | 9 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| Netherlands | 9 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| New Zealand | 9 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| Norway | 9 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| Spain | 9 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| Ireland | 8 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| Slovenia | 8 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |
| Germany | 7.5 | 1 | 1 | 1 | 1 | 0.5 | 0 | 1 | 1 | 1 | 0 |
| Mexico | 7.5 | 1 | 1 | 1 | 1 | 1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| United States | 7.5 | 1 | 0.5 | 0.5 | 0.5 | 0 | 1 | 1 | 1 | 1 | 1 |
| Austria | 7 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| Estonia | 7 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| Hungary | 7 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| Switzerland | 7 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |
| United Kingdom | 7 | 1 | 0.5 | 1 | 1 | 0 | 1 | 0.5 | 0.5 | 1 | 0.5 |
| Italy | 6.5 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0.5 | 0 |
| Chile | 6 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| Greece | 6 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| Israel | 6 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| Australia | 5 | 1 | 0.5 | 1 | 1 | 0 | 0 | 0.5 | 0.5 | 0.5 | 0 |
| Czech Republic | 5 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| Slovak Republic | 5 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| Latvia | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Poland | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Japan | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



For Official Use

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| South Korea | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Turkey | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ITEM AVERAGE | 7 | 1 | 0.9 | 0.9 | 0.9 | 0.2 | 0.6 | 0.8 | 0.7 | 0.7 | 0.5 |
| CATEGORY AVERAGE | | 1 | | 0.7 | | | | 0.7 | | | |

*Note*: A score of 0.5 for a given item means that legal recognition of homosexual orientation applies to only part of a country or group of countries (e.g. same-sex marriage is not legal in Northern Ireland, thereby leading to a 0.5 score for the United Kingdom concerning the possibility for same-sex couples to get legally married).
*Source*: Badgett et al. (2014), ILGA (2016c), the Laws and Families database and author's calculation.

69. Countries have been slower to include sexual orientation in the anti-discrimination legislation (Waaldijk's second step). Moreover, few countries have constitutionally prohibited sexual orientation discrimination. Most countries ranking near the top of the index (score of 8 or 9) still miss this component. By contrast, nearly all forbid discrimination based on sexual orientation in employment and the provision of goods and services. In particular, all EU member states have transposed the Employment Equality Directive (Directive 2000/78/EC) into their legislation (i.e. prohibition of discrimination on grounds of religion and belief, age, disability and sexual orientation).

70. Providing legal recognition to same-sex partnership and family (Waaldijk's third step) also still remains rare, with 20 out of 35 OECD countries not having legalized (or fully legalized) same-sex marriage. That said, OECD countries remain pioneers in this field. As shown in Table 3.2, they stand for the large majority (roughly 80%) of the 22 countries that have legally recognized same-sex marriage since the early 2000s.

**Table 3.2. List of countries that have legalized same-sex marriage, as of 2016**

| | Year of legal recognition |
|---|---|
| **Netherlands** | **2001** |
| **Belgium** | **2003** |
| **Canada** | **2005** |
| **Spain** | **2005** |
| South Africa | 2006 |
| **Norway** | **2009** |
| **Sweden** | **2009** |
| Argentina | 2010 |
| **Iceland** | **2010** |
| **Portugal** | **2010** |
| **Mexico (partly)** | **First state: 2010** |
| **Denmark** | **2012** |
| Brazil | 2013 |
| **France** | **2013** |
| **New Zealand** | **2013** |
| Uruguay | 2013 |
| **UK (except Northern Ireland)** | **2014** |
| **Finland** | **2015** |
| **Ireland** | **2015** |
| **Luxembourg** | **2015** |
| **US** | **First state: 2003. National level: 2015** |
| Colombia | 2016 |
| | Total number of countries |
| World | 22 |
| **OECD countries** | **17** |

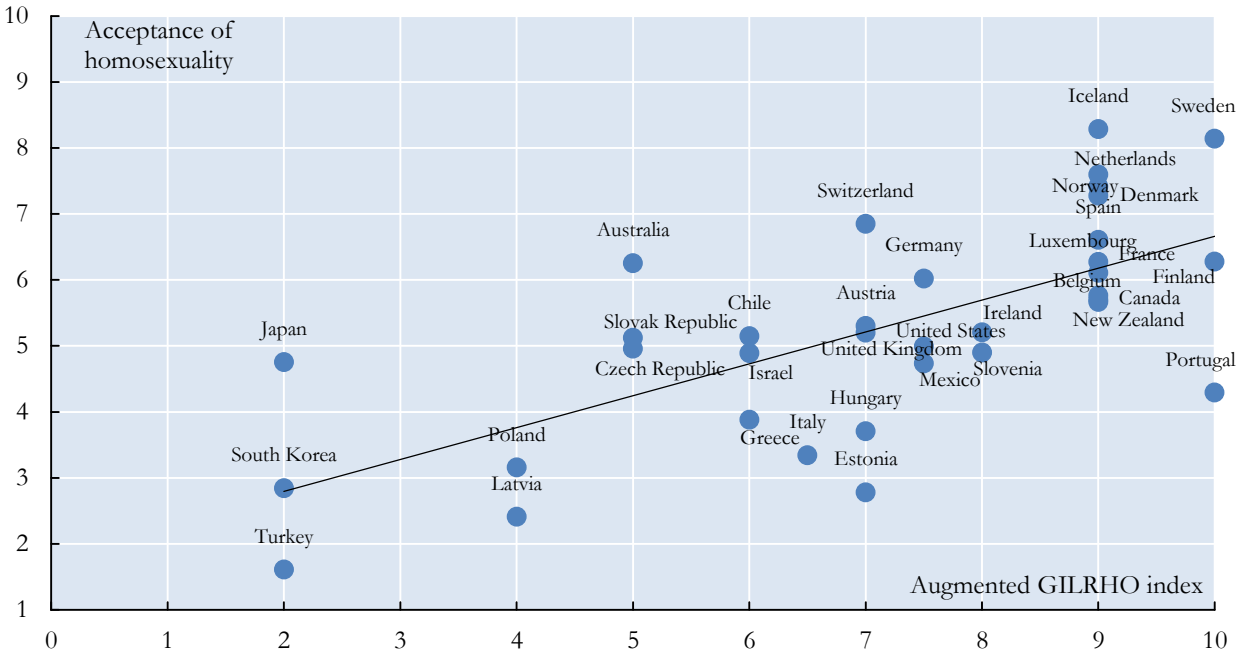
*Note*: OECD countries highlighted in bold.
*Source*: Author's calculation.

71. As expected, Figure 3.14 reveals a positive correlation between acceptance of homosexuality and the augmented GILRHO index. However, as it has already been stressed, this relationship does not necessarily reflect the impact of LGBTI-inclusive laws on social attitudes. It may purely capture reverse causality and/or confounding factors.



For Official Use

**Figure 3.14. Acceptance of homosexuality (2001-2014) and augmented GILRHO index as of 2016 in OECD countries**




*Source*: Table 3.1, AsiaBarometer, European Values Survey, Latinobarometro and World Values Survey.

### *3.2.2. Legal recognition of transgender people*

72. Legal recognition of transgender people mainly involves including gender identity in anti-discrimination legislation as well as legalizing their change of gender marker[60]/civil status without prohibitive requirements such as sterilization, sex reassignment surgery, gender reassignment surgery or even a psychiatric diagnosis.[61] Indeed, not all transgender people want or can undergo surgery. Moreover, since transgenderism is not a psychiatric disorder, requiring a psychiatric diagnosis for a change of gender marker/civil status should be understood as a form of discrimination.

73. Table 3.3 reports a "Transgender Rights Index" in OECD countries, based on the information collected by "Transrespect versus Transphobia Worldwide" (TvT), a research project initiated by Transgender Europe.[62] This index summarizes responses to the following five questions:

- Is gender identity discrimination forbidden in legislation?
- Are hate crimes based on gender identity considered an aggravating circumstance?

60 The word "gender marker" refers to the gender ("male" or "female") that is specified on individuals' birth certificate, ID, passport, etc.

61 Other dimensions also matter, such as access to hormone therapy under medical supervision. However, such access is typically allowed in countries where the change in gender marker is depathologized (see http://transrespect.org/ for more information).

62 ILGA (2016d) is also used as a complement. It is important to stress that the legal requirements for the change of gender marker summarized by the Tvt project and ILGA (2016d) are sometimes unclear and, hence, subject to different interpretations. Table 3.3 should therefore be considered as provisional, until a detailed questionnaire on transgender-inclusive laws is sent to each OECD country.

- Is changing the gender marker legal?
- If a change of the gender marker is legal, does it require sterilization, sex reassignment surgery or gender reassignment surgery?
- If a change of the gender marker is legal, does it require a psychiatric diagnosis?[63]

[63] Although a psychiatric diagnosis is inappropriate for a change of the gender marker, transgender individuals often welcome a psychological support when they decide to transition to the other gender.

**Table 3.3. Transgender Rights Index in OECD countries, as of 2016**

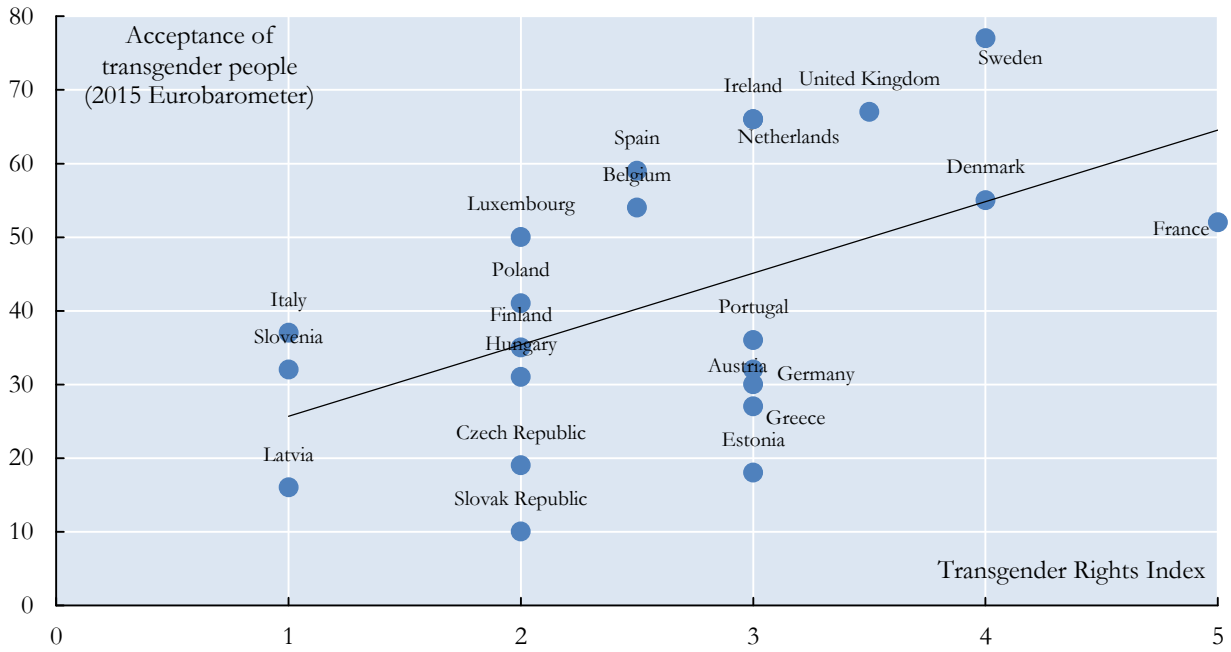
| | TRANSGENDER RIGHTS INDEX | ANTI-DISCRIMINATION | | CHANGE OF THE GENDER MARKER AND ITS DEPATHOLOGIZATION | | |
|---|---|---|---|---|---|---|
| | | Is gender identity discrimination forbidden in legislation? | Are hate crimes based on gender identity considered an aggravating circumstance? | Is changing the gender marker legal? | If a change of the gender marker is legal, does it require sterilization, sex reassignment surgery or gender reassignment surgery? | If a change of the gender marker is legal, does it require a psychiatric diagnosis? |
| France | 5 | 1 | 1 | 1 | 1 | 1 |
| Canada | 4 | 1 | 1 | 0.5 | 1 | 0.5 |
| Denmark | 4 | 1 | 0 | 1 | 1 | 1 |
| Mexico | 4 | 1 | 0.5 | 0.5 | 1 | 1 |
| New Zealand | 4 | 1 | 1 | 1 | 1 | 0 |
| Sweden | 4 | 1 | 0 | 1 | 1 | 1 |
| US | 4 | 1 | 1 | 1 | 0.5 | 0.5 |
| UK | 3.5 | 1 | 0.5 | 1 | 1 | 0 |
| Austria | 3 | 1 | 0 | 1 | 1 | 0 |
| Estonia | 3 | 1 | 0 | 1 | 1 | 0 |
| Germany | 3 | 1 | 0 | 1 | 1 | 0 |
| Greece | 3 | 1 | 1 | 1 | 0 | 0 |
| Iceland | 3 | 1 | 1 | 1 | 0 | 0 |
| Ireland | 3 | 0 | 0 | 1 | 1 | 1 |
| Netherlands | 3 | 1 | 0 | 1 | 1 | 0 |
| Portugal | 3 | 0 | 1 | 1 | 1 | 0 |
| Australia | 2.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Belgium | 2.5 | 0.5 | 1 | 1 | 0 | 0 |
| Spain | 2.5 | 0.5 | 1 | 1 | 0 | 0 |
| Czech Republic | 2 | 1 | 0 | 1 | 0 | 0 |
| Finland | 2 | 1 | 0 | 1 | 0 | 0 |
| Hungary | 2 | 1 | 1 | 0 | 0 | 0 |
| Israel | 2 | 1 | 0 | 1 | 0 | 0 |
| Luxembourg | 2 | 1 | 0 | 1 | 0 | 0 |
| Norway | 2 | 1 | 0 | 1 | 0 | 0 |
| Poland | 2 | 1 | 0 | 1 | 0 | 0 |
| Slovak Republic | 2 | 1 | 0 | 1 | 0 | 0 |
| Switzerland | 2 | 1 | 0 | 1 | 0 | 0 |
| Chile | 1 | 1 | 0 | 0 | 0 | 0 |
| Italy | 1 | 0 | 0 | 1 | 0 | 0 |
| Japan | 1 | 0 | 0 | 1 | 0 | 0 |
| Latvia | 1 | 0 | 0 | 1 | 0 | 0 |
| Slovenia | 1 | 0 | 0 | 1 | 0 | 0 |
| South Korea | 1 | 0 | 0 | 1 | 0 | 0 |
| Turkey | 1 | 0 | 0 | 1 | 0 | 0 |
| Item average | 2.5 | 0.7 | 0.3 | 0.9 | 0.4 | 0.2 |
| Category average | | 0.5 | | 0.5 | | |

*Note*: Information updated for France, based on the recent depathologisation law passed in October 2016.
*Source*: Transrepect.org and ILGA (2016d).

74. OECD countries show an average score of 2.5 (out of 5) with a minimum of 1 (Chile, Italy, Japan, Latvia, Slovenia, South Korea and Turkey) and a maximum of 5 (France). Considering hate crimes based on gender identity as an aggravating circumstance, as well as depathologizing the change of gender marker appear as the most challenging steps toward legal recognition of transgender people, with few countries having implemented them. There is undoubtedly still a long way to go before the change of gender marker will be fully self-determined rather than determined by judges.[64] Yet, as was already the case regarding the legal recognition of homosexuality, OECD countries fare much better than most other non-OECD countries in terms of transgender-inclusive laws.

75. Figure 3.15 adapts Figure 3.14 to the case of transgender people. Not surprisingly, it reveals a positive correlation between acceptance of gender minorities (as measured by the 2015 Eurobarometer)[65] and the Transgender Rights Index.

**Figure 3.15. Acceptance of transgender people in OECD countries based on the 2015 Eurobarometer and Transgender Rights Index as of 2016**




*Source*: Table 3.3 and 2015 Eurobarometer.

64 Even in countries where the change of a gender marker is depathologized, this change usually still requires that the applicant (an adult or emancipated minor) demonstrates an adequate combination of facts that prove that the reference to his/her gender in civil status does not match the one in which he/she is known. This can include publicly stating one's gender identity; that one is known as having that gender identity amongst family, friends; or that one has already changed his/her name to match the requested gender. Mexico is an exception in this respect: transgender persons can change their name and gender without medical examination or judicial order (legal provision restricted to the Federal District of Mexico City). As stressed by ILGA (2016d), "the new article modifies the process from being judicial and up to the judge's discretion to an administrative procedure [the applicant must be Mexican, over 18 years old and provide the following documents: a filled application, proof of residency in the district of Mexico City, birth certificate and official ID]."

65 Acceptance of transgender people is based on the 2015 Eurobarometer because the country coverage of the 2016 ILGA survey is substantially lower.

### *3.2.3. Legal recognition of intersex people*

76. Although LGBT seem overrepresented among intersex people,[66] the challenges intersex persons face in terms of social inclusion go beyond those experienced by lesbians, gay men, bisexuals and transgender people. As already noted, those whose genitals are unclear at birth are at high risk of harmful cosmetic genital surgery to allow for categorizing them as either "female" or "male".

77. Moreover, analysing data from the largest and most recent online survey conducted among intersex people (272 Australian adults with atypical sex characteristics interviewed in 2015), Jones et al. (2016) find that their intersex status is associated with characteristics that may increase their exposure to discrimination. As an illustration, 10% of these intersex respondents self-identify as asexual, a much greater proportion than the 1% estimate obtained from the general population (Bogaert (2015)). Yet, attitudes toward asexuals appear to be particularly negative, not only when they are compared to attitudes toward heterosexuals but also to attitudes toward other sexual minorities. In particular, MacInnis and Hodson (2012) show that heterosexual respondents: (i) express more negative prejudice toward asexuals (as compared to their attitudes toward heterosexuals, homosexuals and bisexuals); (ii) desire less contact with asexuals; and (iii) are less willing to rent an apartment to (or hire) an asexual applicant. Moreover, of all the sexual minority groups studied, asexuals are the one perceived to be the least "human".

78. Finally, intersex people may be stigmatized and/or discriminated against simply for having bodies that do not fit typical binary notions of male and female. Surely, few of them advertise their intersex status. However, to the extent that intersex people frequently need hormone (replacement) treatment, they may be constrained to disclose their health needs (and the reason for such needs), in particular to their employer (Pride in Diversity and OII Australia (2014)).

79. In this setting, legal recognition of intersex people would require enacting three types of legislation:

- Prohibiting medically unnecessary sex assignment surgery on the sex characteristics of a minor, until the person can provide informed consent[67]
- Offering a third gender option on birth certificates and ID documents broadly speaking
- Amending antidiscrimination laws so that they explicitly include intersex people.

80. OECD countries fall short in terms of achieving these three requirements. None of them has outlawed non-consensual medical interventions on intersex people (only Malta did, in 2015).[68] Moreover, reporting one's gender or sex as "indeterminate" on birth certificates and/or ID documents is feasible in only three OECD countries: Australia since 2011, Germany since 2013 and New Zealand since 2012. Finally, only few OECD countries have enacted antidiscrimination laws that explicitly protect

[66] As stressed in Section 2.4, Jones et al. (2016) show that 52% of intersex respondents in their convenience sample self-identify as LGB and that 8% self-identify as transgender (this last estimate is in line with Furtado et al. (2012) whose meta-analysis reveals that between 8.5% and 20% of intersex people are transgender).

[67] Jones et al. (2016) report that 92% of intersex respondents in their convenience sample disagree with the proposition that "health providers should be able to apply interventions to their sex characteristics (such as surgeries, sterilisation or hormonal treatments) without their informed consent".

[68] Chile stands as the closest to this objective. In 2016, the Chilean government issued guidelines that urge doctors to oppose intersex children "normalization" surgery.

intersex people: Australia in 2013, Finland in 2015 and Greece in 2015 (the three non-OECD countries that did so are South Africa in 2005, Malta in 2015 and Bosnia and Herzegovina in 2016).

### *3.2.4. The case of LGBTI migrants*

81. The legal recognition of LGBTI people also involves properly handling the applications of LGBTI asylum seekers. Article 33 of the United Nations Convention relating to the Status of Refugees provides that States parties have an obligation not to expel or return a refugee to a place where their life or freedom would be threatened on account of race, religion, nationality, membership of a particular social group or political opinion. In this setting, the United Nations High Commissioner for Refugees (UNHCR) advises that individuals who fear persecution on account of their sexual orientation, gender identity or intersex status be considered members of a "particular social group" (see UNHCR (2008, 2015)).

82. Yet, the handling of LGBTI asylum cases is problematic in many (OECD) countries, as reported by ILGA Europe (2014).

83. According to ILGA Europe (2014), LGBTI migrants typically do not reveal their sexual orientation, gender identity or intersex status directly upon arrival in the country of asylum, mainly because of a feeling of shame and fear of retaliation. Such late disclosure often negatively affects the credibility of their claim in the eyes of the asylum authorities.

84. Moreover, their situation in reception centres is worrying: they usually fled alone, and have no one to protect them from others' homo-, trans- and intersexphobia. Bullying and violence against LGBTI refugees in reception centres is often widespread.

85. Asylum authorities often lack information on sexual orientation, gender identity and intersex legislation in the country of origin. They are therefore tempted to solve the ambiguity by relying on the "discretion" argument: unless their lives are threatened for reasons independent of their sexual and gender minority status, they reject the applications of LGBTI asylum seekers on the basis that they could avoid persecution by concealing their non-conforming sexual orientation, gender identity or sex characteristics upon return to their country of origin, if needed.

86. ILGA Europe (2014) reports a series of good practices regarding the reception of LGBTI refugees, including:

- Training interviewers and interpreters in order to ensure that the interview is conducted under conditions that allow applicants to present their story in a comprehensive manner. For instance, the interpreter should never be one of the applicant's countrymen living in the same reception centre.
- Creating safe spaces in reception centres where LGBTI applicants can live together without fearing retaliation from other asylum seekers.
- Providing asylum authorities with sufficient information on the level of homophobia, transphobia and intersexphobia in the applicants' country of origin, along with recalling that applicants are entitled to live in society (including their country of origin) as who they are.



For Official Use

## 3.3. Perception of discrimination among LGBTI

87. Discrimination against LGBTI should be lower the greater the acceptance of sexual and gender minorities by the general public is, and the more LGBTI-inclusive laws there are. Yet, objective measures of discrimination are rare, especially across countries (see Section 5 for a discussion). In this context, cross-country surveys conducted among sexual and gender minorities in order to estimate their perception of discrimination constitute a useful, though imperfect, alternative. Indeed, the measures they provide are by definition subjective, thereby reflecting demographic, cultural or personal factors as much as reality.

88. To date, only one cross-country survey has been conducted among LGBT.[69] It was performed by the European Union Agency for Fundamental Rights (FRA) in 2012. Data were collected through an anonymous online questionnaire, among 93,079 people who self-identified as LGBT across the EU and Croatia. No international survey, however, has ever been run to measure the perception of discrimination among intersex people.

89. This 2012 FRA survey reveals that LGBT perceive widespread discrimination, all areas included, against sexual and gender minorities, especially against transgender people and gay men. In all countries surveyed, the proportion of respondents who consider that discrimination (in general) is "very widespread" or "fairly widespread" is 83% when this discrimination is assumed to be directed at transgender people and 72% when it is supposed to be directed at gay men. By contrast, "only" 52% and 36% of respondents view discrimination against lesbians and bisexuals as widespread. These figures echo the results obtained from the Pew Research Center (2013) in the US, where only 3% and 15% of a LGBT sample consider there is a lot of acceptance of transgender people and gay men respectively (as opposed to 21% and 25% concerning acceptance of bisexuals and lesbians).

90. Finally, in spite of the absence of international surveys on the perception of discrimination among intersex people, country-based evidence suggests that discrimination based on intersex status is also pervasive. Relying on a convenience sample of 272 Australians with atypical sex characteristics and interviewed in 2015, Jones et al. (2016) show that 66% of respondents report having experienced discrimination because of their intersex status.

91. Not surprisingly, Figures 3.16 and 3.17 highlight a negative correlation between LGBT's average answer to the "perception of discrimination against LGB" questions[70] and (i) acceptance of homosexuality (Figure 3.16); (ii) the augmented GIRLHO index (Figure 3.17).

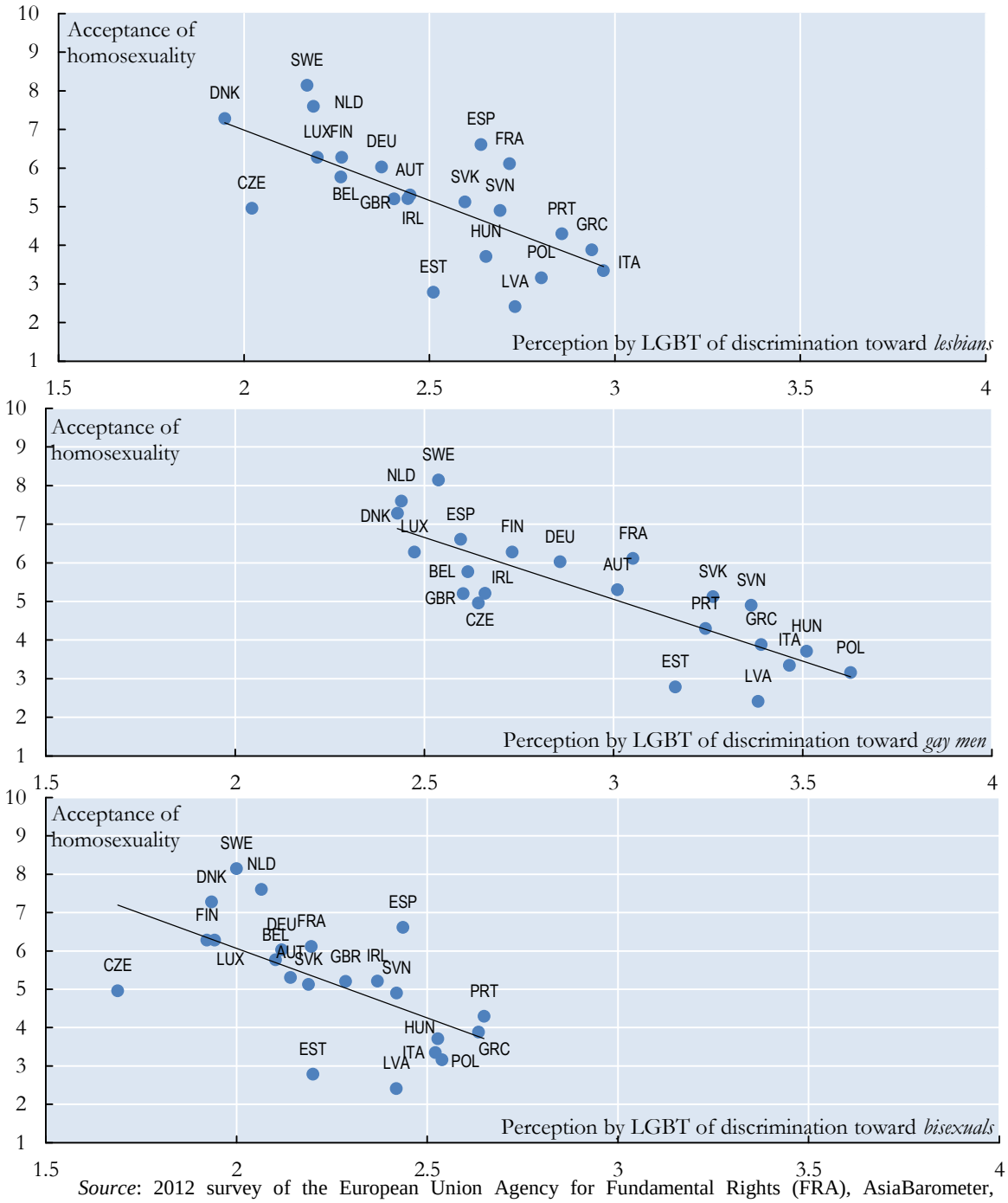
92. Figures 3.18 and 3.19 confirm these relationships (although in a less striking manner) for gender minorities: LGBT people are less likely to report discrimination against transgender people in countries that are more transgender-friendly (Figure 3.18) and implement transgender-inclusive laws (Figure 3.19).

69 Other surveys among LGBTI have been implemented at a national or city level: see for instance the research conducted by Stonewall, a LGBTI rights charity in the UK (https://www.stonewall.org.uk/) or by the Viennese Antidiscrimination Unit for Lesbian, Gay and Transgender Issues (https://www.wien.gv.at/menschen/queer/schwerpunkte/wast-studie.html).

70 Answers to these questions are coded as follows: 1 means that discrimination against LGB is considered as "very rare," 2 that it is considered as "fairly rare," 3 that it is considered as "fairly widespread" and 4 that it is considered as "very widespread."

93. It is worthwhile noting that these correlations are much lower if one relies on the perception of discrimination against LGBT by the general public rather than by LGBT themselves (as measured for instance by various waves of the Eurobarometer on discrimination).

**Figure 3.16. Acceptance of homosexuality (2001-2014) and perception by LGBT of discrimination against lesbians, gay men and bisexuals respectively based on the 2012 FRA survey, in OECD countries**

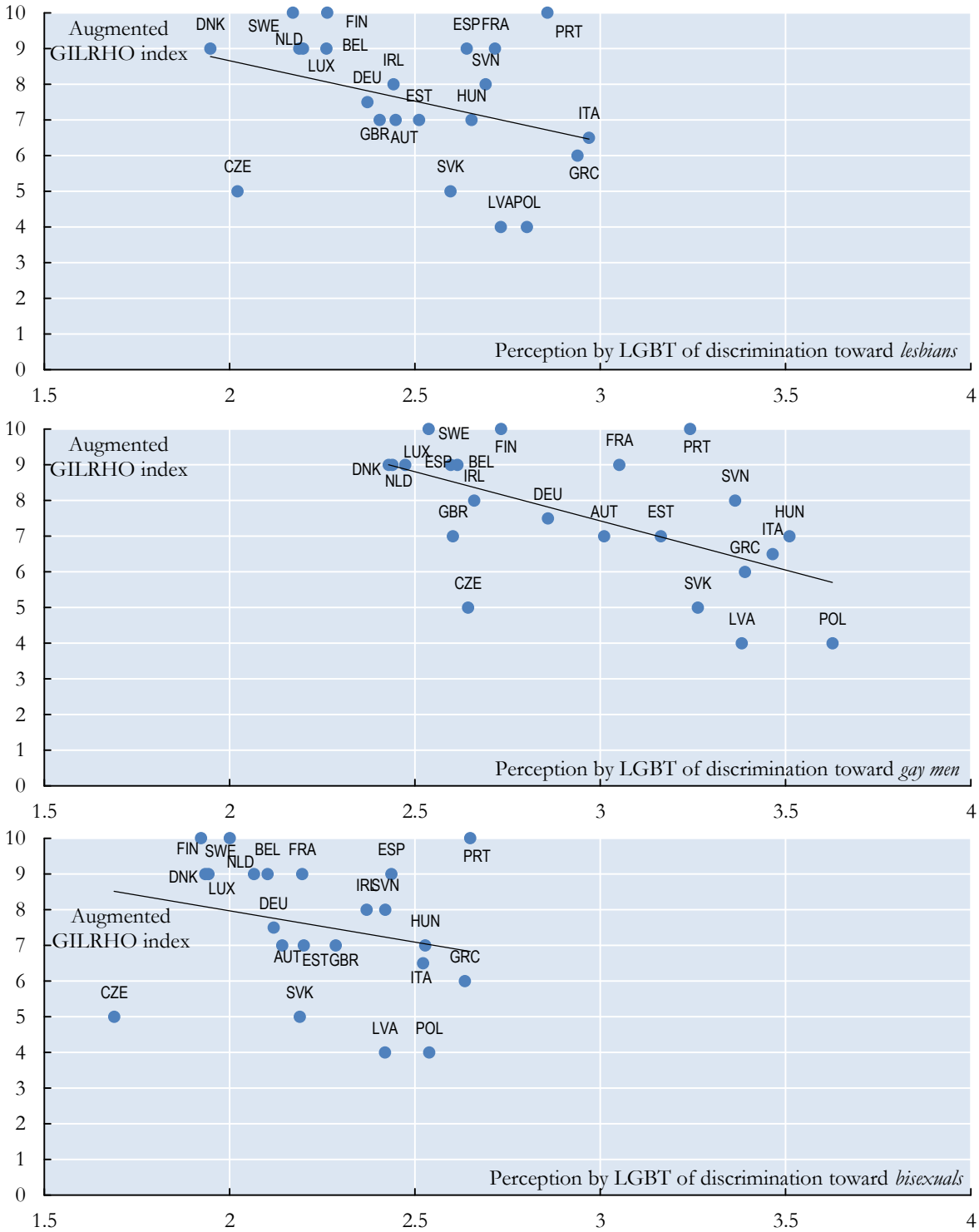



*Source*: 2012 survey of the European Union Agency for Fundamental Rights (FRA), AsiaBarometer, European Values Survey, Latinobarometro and World Values Survey.



For Official Use

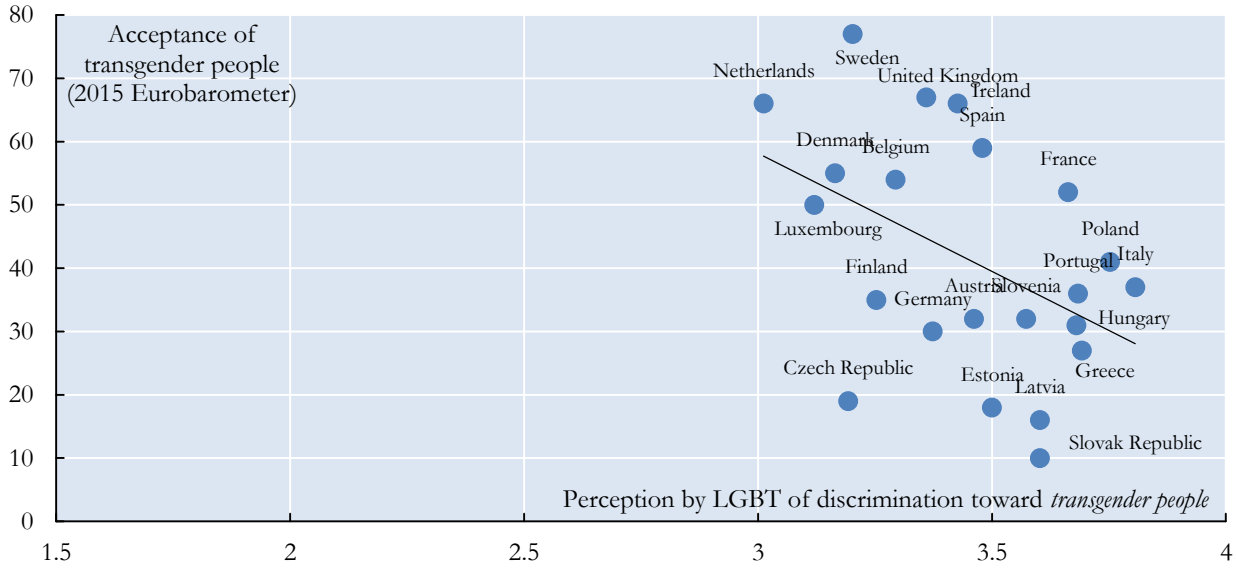
**Figure 3.17. Augmented GILRHO index as of 2016 and perception by LGBT of discrimination against lesbians, gay men and bisexuals respectively based on the 2012 FRA survey, in OECD countries**




*Source*: 2012 survey of the European Union Agency for Fundamental Rights (FRA) and Table 3.3.

94. First, the general public can be assumed to be less informed about anti-LGBT discrimination than are LGBT themselves. Moreover, a non-LGBT person who reports a low (resp. high) level of discrimination against LGBT might reflect two opposite realities: (i) the fact that LGBT indeed suffer low (resp. high) discrimination in her country; (ii) the fact that he or she does not care (resp. cares) about such discrimination, which might translate a low (resp. high) level of social acceptance of LGBT at her country level.

**Figure 3.18. Acceptance of transgender people based on the 2015 Eurobarometer and perception by LGBT of discrimination against transgender people based on the 2012 FRA survey, in OECD countries**

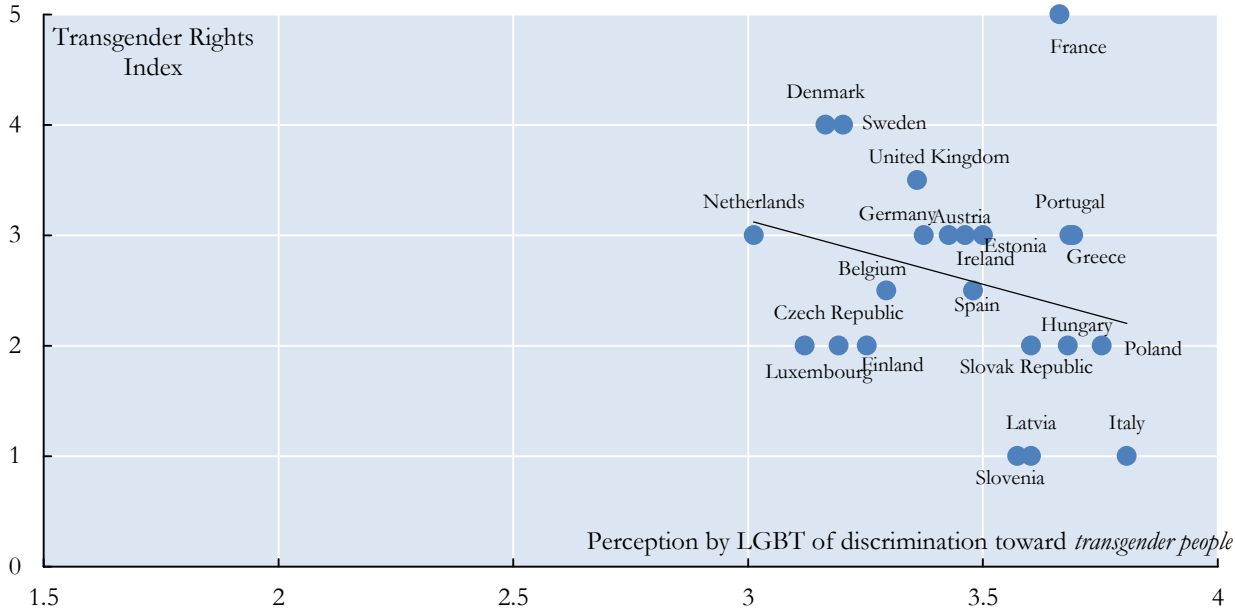



*Source*: 2012 survey of the European Union Agency for Fundamental Rights (FRA) and 2015 Eurobarometer.



For Official Use

**Figure 3.19. Transgender Rights Index as of 2016 and perception by LGBT of discrimination against transgender people based on the 2012 FRA survey, in OECD countries**




*Source*: 2012 survey of the European Union Agency for Fundamental Rights (FRA) and Table 3.3.

# 4. Identifying an LGBTI penalty and its cause: A challenge

95. Despite a shift toward greater acceptance, there is still a long way to go before LGBTI can benefit from full-fledged social and legal recognition, thereby leading sexual and gender minorities to report widespread discrimination based on their sexual orientation, gender identity or intersex status.

96. In this context, LGBTI's well-being may be substantially lower than that if their non-LGBTI peers. The mere awareness of belonging to a group that is discriminated against is indeed associated with emotional distress (Mak et al. (2007)), not to mention the traumatic effects of undergoing verbal or physical violence. Moreover, anti-LGBTI sentiment likely induces unfair treatments in dimensions critical for individuals' welfare (Layard et al. (2014) and the OECD Better Life Index[71]): family life, education, economic outcomes and health.

97. After clarifying how discrimination against LGBTI can affect their well-being, this section discusses the empirical strategies that researchers have been implementing to identify an LGBTI penalty. Section 4 therefore constitutes an important methodological step toward Section 5 that investigates, based on a comprehensive review of survey-based and experimental evidence, whether LGBTI are indeed penalized in various dimensions of their lives, and why.

## 4.1. Anti-LGBTI discrimination and LGBTI well-being

98. Discrimination can be direct or indirect. Direct discrimination refers to the unfair treatment of a particular person or group of people based on characteristics which, in an inclusive society, typically include sex, age, disability, race, ethnicity, nationality, religion, sexual orientation and gender identity. In the labour market for instance, direct discrimination against LGBTI people would consist of denying them a job or promotion *because* of their sexual orientation, gender identity or sex characteristics.

99. Indirect discrimination occurs when an apparently neutral provision or practice puts people who share certain characteristics at a disadvantage compared to others. For instance, the absence of legal recognition of same-sex marriage prompts indirect discrimination against homosexual people in their access to legal rights and benefits. As an illustration, in the period before the legalization of same-sex marriage in the US, Herek (2006) lists 1,138 federal statutory provisions in which marital status is a factor in determining or receiving federal benefits, rights, and privileges ranging from Social Security survivors' benefits to affordable housing programmes. The legal and financial penalty associated with barriers to same-sex marriage seems to be well understood by sexual and gender minorities. Based on a representative sample of Americans who identify as LGBT, the Pew Research Center (2013) reveals that a large majority (93%) are favourable to allowing gay men and lesbians to marry legally, and that they are much more likely than the general US public to choose the

[71] See http://www.oecdbetterlifeindex.org/#/11111111111 (last accessed on May 9, 2017). Family life covers the « Community » and « Work-life balance » items of the Better Life Index (BLI), education the « Education » item of the BLI, economic outcomes the « Housing », « Income » and « Jobs » items of the BLI, health the « Health » item of the BLI and well-being the « Life satisfaction » item of the BLI. The « safety » item of the BLI among LGBTI is partly addressed in Section 3.3. devoted to the perception of discrimination by sexual and gender minorities.

options "For legal rights and benefits" and "Financial stability" as the reason for their support: 46% select the former and 35% select the latter (as compared to 23% and 28% respectively among the general public).

100. It is important to stress the possibility of a vicious circle. Discrimination (be it direct or indirect) can be a proximate as well as a more distant determinant of well-being, through its impact on family life, education, economic outcomes and health. But feedback effects are likely. According to the "minority stress theory", minority group members experience stress not experienced by majority groups, with presumably detrimental consequences for their mental and physical health (Brooks (1981) and Meyer (1995, 2003)). Consequently, LGBTI people might be seriously hampered in their capacity to thrive in other aspects of their life, which may further worsen their health outcomes. In fact, as it is apparent below, discrimination can initiate a "bad equilibrium," in which low well-being and ill health, as well as family problems, low educational attainment and poor economic outcomes are all mutually reinforcing.[72]

### *4.1.1. Family life*

101. Anti-LGBTI discrimination can affect four main aspects of the family life of sexual and gender minorities:

- their ability to have a (legally recognized) partner
- their ability to have children
- couple stability
- children's well-being.

102. The paragraphs below first address the case of LGB individuals. They describe in a second step the specific challenges faced by transgender and intersex people.

#### *Lesbians, gay men and bisexuals*

103. LGB suffer from direct discrimination with regard to the probability of having a legally recognized partner and children. Marriage (or marriage-like relationships) is legal for opposite-sex couples but still illegal for same-sex couples in a majority of OECD countries (see Table 3.2). Moreover, few countries allow the joint adoption of a child by a same-sex couple, or the adoption by one partner of a same-sex couple of the other's biological child.

104. These barriers to legal partnership and adoption lead same-sex couples, especially gay men, to have fewer children than opposite-sex couples, even in countries where joint or second-parent adoption is legal (indeed, such adoption laws are generally recent). According to the Pew Research Center (2013), 35% of LGBT adults are parents, compared with 74% of adults in the general public. Bisexuals are

[72] As an illustration, LGBTI lower access to the legal recognition of their partnership as well as difficulties to have or adopt children may increase their economic vulnerability through various channels. To name just a few, the number of legal dependents is often a criterion for choosing the workers to be laid off in case of collective dismissals (Eurofound (2016)). Moreover, as stressed by Herek (2006), "because same-sex couples lack the protections that marriage provides when a spouse dies, they must incur the considerable expense of creating legal protections for the surviving partner through wills, trusts, and contracts for joint ownership of property. Even these measures do not always protect the partners. A will can be contested by the decedent's biological relatives, for example, and unlike a spouse, the surviving partner is likely to incur a substantial tax burden when taking sole legal possession of a home that the couple jointly owned."

the most likely to be parents, with 52% having children, as opposed to 31% among lesbian and 16% among gay men (see Black et al. (2007) and Carpenter and Gates (2008) for similar findings).

105. Additionally, the difficulty for same-sex couples to marry has the potential to negatively affect their couple stability for at least two reasons. First, by creating institutional barriers to partnership dissolution, marriage may encourage partners to seek solutions for their problems rather than prematurely end a potentially salvageable relationship (Adams and Jones (1997)). Second, spouses have special rights and privileges that allow them to plan for the future without fearing the unavoidable traumatic events of life. For example, a surviving spouse has automatic rights to inheritance, death benefits, and bereavement leave, which might not be the case of an unmarried surviving partner (Herek (2006)). Consistent with the intuition that marriage enables couples to plan ahead, Klawitter (2008) shows that married couples are much more likely to hold money jointly on their bank accounts than are unmarried couples.

106. But barriers to homosexual marriage are also expected to undermine the well-being of children living with same-sex couples. Children suffer from family instability (Kurdek, Fine and Sinclair (1995), Fomby and Cherlin (2007), Osborne and McLanahan (2007), Cooper et al. (2011), Craigie, Brooks-Gunn and Waldfogel (2012)). Moreover, married couples generally share joint legal custody of their co-resident children. In this context, even if the marriage terminates, divorce rights provide guarantees for child support and visitation. Children of unmarried parents may therefore suffer more from the breakup of their parents' couple than do children of married parents (Rosenfeld (2010)).

107. Concurrent mechanisms can further impair the well-being of children living with same-sex couples and therefore contribute to explain the negative health and educational outcomes that have been documented among children of gay and lesbian parents (see Manning, Fetro and Lamidi (2014) for a review). For instance, these children are at risk of being discriminated against for having same-sex parents (e.g. Diaz-Serrano and Meix-Llop (2016) in Section 5.1).

### *Transgender and intersex people*

#### Transgender people

108. Anti-LGBTI discriminaton can negatively affect the ability of transgender people to have children. Transgender people who transition to the other sex are at high risk of infertility. Surgical removal of reproductive organs inevitably results in infertility. And medically assisted, nonsurgical physical transitioning can have deleterious and potentially irreversible effects on fertility.

109. In this setting, access of transgender people to fertility preservation options is critical, such as sperm and oocyte cryopreservation. Yet, as stressed by Mitu (2016), this access is very dependent on the level of social acceptance of sexual and gender minorities: "if clinicians believe that transpeople are unfit for parenting and should not be allowed to reproduce, this might prevent transpatients' access to relevant information about fertility preservation".

110. Transgender people face barriers to parenting, beyond fertility preservation. In particular, post-transition transmen who decide to give birth to a child are subject to



For Official Use

"tremendous social stigma in the transgender community as well as in the broader society" (Mitu (2016)). Social stigma also prevents many transgender people from adopting and fostering children (Mitu (2016)).

Intersex people

111. Genital surgeries on intersex people can have deleterious effects on their ability to engage in stable relationships. In particular, intersex people who undergo such medical interventions report greater difficulty to experience orgasm, more pain during intercourse as well as lower sexual activity (Warne et al. (2005)).

112. Moreover, medical interventions increase the risk for intersex people of being infertile. As an illustration, Jones et al. (2016) indicate that 15% of respondents in their convenience sample report being unable to reproduce due to treatments/surgeries around their intersex status.

113. In this setting, discrimination against intersex people (through non-consensual and medically unnecessary sex assignment surgery) can seriously hamper their capacity to thrive in their family life.

### *4.1.2. Education*

114. Homophobic and transphobic bullying at school is a worldwide problem (UNESCO (2016)). The victimization of LGBT students ranges from the interference of homophobic discourse in everyday interactions (e.g. the use of "faggot" as generalized derogatory comments among teenagers) to verbal harassment and physical violence. As an illustration, results from the 2013 US National School Climate Survey[73] indicate that 64.5% of LGBT students report hearing homophobic remarks like « dyke » or « fag » frequently or often, while a third (33.1%) hear negative remarks specifically about transgender people, like "tranny" or "he/she," frequently or often. Moreover, 74.1% were verbally harassed (e.g. called names or threatened) in the year before the survey because of their sexual identity and 55.2% because of their gender expression.[74] Finally, 52.7% were physically harassed (e.g. pushed or shoved) and/or assaulted (e.g. punched, kicked, injured with a weapon) in the previous year because of their sexual identity and 34.1% because of their gender expression (see Kosciw et al. (2014)).

115. But discriminatory practices reported by LGBT students do not only stem from their peers. They also involve teachers and, more generally, the school administration. For instance, 28.2% of LGBT students declared being disciplined for public displays of affection that were not sanctioned among non-LGBT students. And 59.2% of transgender students have been required to use a bathroom or locker room of their biological sex.[75] Similar findings are obtained from other convenience samples in Europe (IGLYO (2013))[76] and worldwide (UNESCO (2016)).

---

73 The 2013 National School Climate Survey is Gay, Lesbian, & Straight Education Network (GLSEN)'s eighth biennial report on the school experiences of LGBT youth in the US.

74 The wording "because of their gender expression" is synonymous here to "because they are gender non-conforming". As it is recalled in the glossary, gender non-conforming people refer to individuals who do not behave according to the gender norms associated to their sex at birth. As such, this group does not only encompass transgender people but also cisgender individuals who tend to behave like stereotypical opposite-sex individuals, without feeling as someone of the opposite sex. This group is also supposed to include individuals whose same-sex sexual attraction is known.

75 There is little chance of a downturn in this situation after the US administration rescinded in Feburary 2017 a guidance that protected transgender students from discrimination in federally funded schools and asked schools to let trans students use the bathrooms and

116. Unfair treatment of LGBT students by their teachers and peers has the potential to seriously hamper their academic achievements and, ultimately, educational attainment in adulthood, both indirectly (through everyday harassment potentially yielding to high absenteeism and even dropout) and directly. For instance, teachers may pay lower attention to LGBT students, and non-LGBT classmates may refuse to engage in teamwork with them.

117. Intersex students are also at high risk of stigmatization at school, in particular during puberty where they can develop secondary sex characteristics at odd with the biological sex they are identified with. As an illustration, the intersex Canadian playwright and filmmaker Alec Butler explains that, born female and brought up as a girl, his life suddenly changed at 12, when he "grew a beard and had a period"[77]: "At school I was picked on. I was worried about being called crazy so I tried to fit in, tried not to get in too much trouble. But when you're in a body like mine, it is trouble. People get upset. (…) I was screamed at by the other kids, 'You're sick! You're sick!' I was passed notes in class, stuff like, 'Why don't you just kill yourself?'".[78]

### *4.1.3. Economic outcomes*

118. Labour earnings constitute the largest part of income of most people (OECD Income Distribution Database[79]). This subsection starts by deciphering the mechanisms through which discrimination can affect the outcomes of LGBTI in the labour market. It then investigates the potential additional discriminatory drivers that could further penalize LGBTI in their economic lives.

#### *Performance in the labour market*

119. Discrimination in the labour market is defined as a situation in which *equally productive* individuals are rewarded differently due to their membership in groups that differ along various characteristics.

120. Discrimination in the labour market can be taste-based (Becker (1957)) or statistical (Phelps (1972) and Arrow (1973)). Taste-based discrimination refers to a situation in which employers, workers or consumers host a taste (or distaste) for specific groups. By contrast, statistical discrimination emerges in the absence of precise information about candidates' productivity. In this context, recruiters rely on their beliefs about how unobserved productive characteristics correlate, on average, with group memberships. This approach leads to discriminating against atypical members of the disadvantaged groups when the recruiters' beliefs are correct (i.e. those members who are more productive than members of the advantaged group), and to discriminating against all members of the disadvantaged groups when these beliefs are wrong.

locker rooms that correspond with their gender identity. See https://www.nytimes.com/2017/02/22/us/politics/devos-sessions-transgender-students-rights.html?emc=eta1 (last accessed on March 13, 2017).

76 See for instance the German Youth Institute (2015).

77 See http://www.bbc.com/news/magazine-36092431 (last accessed on March 13, 2017).

78 Note that the negative consequences of at-school stigmatization on the educational attainment of intersex students can be compounded by medical practitioners' decision to "treat" the intersex traits discovered during puberty without delay. As an illustration, an intersex woman interviewed by Jones et al. (2016) reports her experience as a junior high school student : "I nearly died of septicaemia as a teenager, due to my genital surgery, I missed so much school I actually had to drop out entirely. It changed my whole life."

79 See http://www.oecd.org/social/income-distribution-database.htm (last accessed on May 9, 2017).

121. The extent of homophobia, transphobia and intersexphobia suggests widespread taste-based discrimination against LGBTI. Moreover, insofar as attitudes toward gay men are more negative than attitudes toward lesbians, a result driven by male rather than female respondents, one expects stronger taste-based discrimination against gay men in male-dominated than in female-dominated jobs. By contrast, taste-based discrimination against lesbians should be unrelated to the gender composition of jobs.

122. But sexual and gender minorities can also suffer from statistical discrimination. Kite and Deaux (1987) found that providing college students with the label "male homosexual" leads them to infer that this man's characteristics are similar to those of female heterosexuals. Similarly, female homosexuals are presumed similar to male heterosexuals (see Storms et al. (1981) for additional evidence). In this context, employers may view gay men and trans women[80] as lacking "masculine" productive characteristics, and lesbians and trans men[81] as lacking "feminine" productive characteristics. For instance, Buser, Geijtenbeek and Plug (2015) show that competitiveness, widely considered a masculine trait in patriarchal societies (Gneezy, Leonard and List (2009)), is lower among gay men than among straight men.[82] This situation can generate statistical discrimination against LGBTI: gay men and trans women would be penalized relative to heterosexual and cisgender men in male-dominated jobs, while lesbians and trans men would be penalized relative to heterosexual and cisgender women in female-dominated jobs.

123. It is important to stress the existence of a potential second source of statistical discrimination against gay and bisexual men (Tebaldi and Elmslie (2006)). Because their HIV transmission risk is greater due to the specificities of their sexual practices (Baggaley, White and Boily (2010)), gay and bisexual men experience the greatest burden of HIV compared to any other group. According to the Center for Disease Control (CDC), by June of 2016, gay and bisexual men accounted for 83% (29,418) of the estimated new HIV diagnoses among all males aged 13 and older and 67% of the total estimated new diagnoses in the United States. In this context, employers could use male sexual orientation as a signal for HIV/AIDS susceptibility (Bloom and Glied (1989)), thus tending not to hire gay and bisexual men, or not to promote them once hired since HIV/AIDS infection undermines individuals' productivity at work (e.g. Habyarimana, Mbakile and Pop-Eleches (2010)).

124. Finally, the minority stress theory suggests a third source of statistical discrimination against all LGBTI. Because their minority status puts them at a greater risk of emotional distress, employers might avoid dealing with them, thereby initiating a vicious circle leading to self-sustained discrimination (see Baert et al. (2016) for evidence on the impact of applicants' report of depression on employers' recruitment decision).

### *Living conditions/Poverty*

125. Anti-LGBTI discrimination can hamper their living conditions in a number of additional ways:

[80] A trans woman is a transgender person who was assigned male at birth but whose gender identity is that of a woman.

[81] A trans man is a transgender person who was assigned female at birth but whose gender identity is that of a man.

[82] This result must be interpreted with caution however: gay men's lower competitiveness can be both a cause and a consequence of the discrimination they face.

- First, "coming out" to family members can be traumatic. Based on a convenience sample of 194 LGB aged 14-21 in 14 metropolitan US areas three-quarters of whom had disclosed their sexual identity, D'Augelli, Hershberger and Pilkington (1998) reveal that many reported verbal and physical abuse by family members.
- Moreover, LGBTI people can suffer discrimination beyond the labour market, e.g. in the rental market, mortgage market… etc. Such discrimination may be particularly strong for gay men and lesbians if they apply as couples, because they are easily identifiable as homosexual in this case.[83] Discrimination in the rental market would imply that LGBTI people are provided with the least popular housing options. Additionally, to the extent that home ownership constitutes an important savings device, discrimination in the mortgage market may constrain their capacity to build wealth, in particular to secure their old age.
- Finally, legal barriers to the recognition of LGBTI surely impose high costs on them, although these costs have not been quantified yet. For instance, being married is still a condition for eligibility to a wide range of social benefits. In this context, banning same-sex marriage undoubtedly negatively affects sexual and gender minorities' access to social protection and, hence, financial security.

### *4.1.4. Health*

126. An LGBTI health penalty may derive from a "minority stress" effect, whereby LGBTI perception of being discriminated against impairs their health outcomes. Discrimination is indeed suspected to work as a stressor, which not only damages individuals' well-being but also mental health (low self-esteem, anxiety, depression, suicide ideation, self-harm, substance abuse) and physical health (immune dysregulation leading to cardiovascular diseases, diabetes, or cancers) (see Dohrenwend (2000) and Kiecolt-Glaser et al. (2002) for evidence on the relationship between stress and mental and physical illness respectively). Anti-LGBTI discrimination can even lead LGBTI to internalize homo-, trans- and intersexphobia and self-stigmatize (Meyer (2003)).

127. LGBTI lower health outcomes may also stem from discriminatory practices on the side of medical practitioners themselves:

- Although homosexuality was removed from the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association in 1973 (Bayer (1981)), Dean et al. (2000) show that the relationship between homosexuality and sickness has proved more enduring in the minds of many providers in the US, with negative consequences for homosexual patients' care. As an illustration, relying on surveys among medical practitioners, Gerbert et al. (1991) and Hayward and Weissfeld (1993) reveal a negative relationship between homophobia and physicians' willingness to treat persons with HIV/AIDS. In this setting, 50% of physicians indicated that they would not treat people with HIV infection, if given a choice (Gerbert et al. (1991)). More recently, Sabin, Riskind and Nosek (2015) have shown, based on a study among nearly 20,000 health care

[83] The discrimination they face in this setting may be taste-based, as well as statistical : because their access to marriage is restricted, they may be perceived as less stable than (heterosexual) married couples and, hence, less committed to pay their loans or rents.

providers mainly located in the US, that this population shows preferences for heterosexuals *versus* lesbians and gay men.[84]

- As for attitudes toward transgender people, the American Psychiatric Association discarded the term "Gender Identity Disorder" (historically used by mental health professionals to diagnose transgender individuals) only recently (in 2012). This late change may suggest that stigma against transgender people is still vivid in the healthcare system. As an illustration, and relying on Table 3.3, a change of gender marker can occur without a psychiatric diagnosis in only 5 out of 35 OECD countries.
- Contrary to LGBT, intersex people are officially viewed by medical practitioners as suffering from a disorder: in 2006, a "Consensus Statement on Management of Intersex Disorders" renamed intersex "disorders of sex development," or DSD for short (Lee et al. (2006)). The statement was published in *Pediatrics*, the official journal of the American Academy of Pediatrics, leading the DSD terminology to replace intersex language within the medical profession. Intersex people, advocates and allies by and large oppose the DSD terminology since it notably contributes to justify medically unnecessary genital surgery on the sex characteristics of children (see Jones et al. (2016)).

128. LGBTI can also be discriminated against in their access to healthcare through other channels. In particular, health insurance coverage is more likely to include an employee's opposite-sex spouse than same-sex partner or even spouse.[85] As an illustration, the Kaiser Family Foundation reports that less than half (43%) of US firms offering health insurance coverage to opposite-sex spouses, also provided coverage to same-sex spouses in 2016.[86] Moreover, unless a same-sex couple has signed legal papers authorizing mutual medical decision-making, blood relatives can overturn decisions by a homosexual partner. Visits or participation in medical consultations can also be limited to legally recognized spouses or blood relatives (Dean et al. (2000))[87].

---

84 Both explicit and implicit preferences are measured. Explicit preferences derive from a question asking whether the interviewee prefers straight people to gay people. Implicit preferences stem from the Implicit Association Test (IAT), introduced in 1998 by a group of American social psychologists (see Greenwald et al. (1998)). The Sexuality IAT consists of successively displaying words or images refering to straight or heterosexual people, and attributes representing the concepts of "good" (e.g. "happy") or "bad" (e.g. "awful") on participants' computer screens. In a first IAT session, the participants must group the words refering to heterosexuality and the negative attributes on one side of the screen, and the words refering to homosexuality and the positive attributes on the other side. In a second IAT session, it is the reverse: the words refering to heterosexuality have to be grouped with the positive attributes, while the words refering to homosexuality with the negative attributes. The IAT relies on the following hypothesis: persons having implicit preferences for heterosexuals *versus* homosexuals ought to be more rapid in the second session (where it is a question of grouping heterosexuals (resp. homosexuals) with the positive (resp. negative) attributes) than in the first session. Preferences for heterosexuals are thus measured on the basis of the difference between the time it takes participants to group the words refering to heterosexuality (resp. homosexuality) with the negative (resp. positive) attributes, and the words refering to homosexuality (resp. heterosexuality) with these negative (resp. positive) attributes. (Additional features of the methodology used to analyze IAT data are supposed to allow for purging this difference of the reduction in response time that is merely attributable to learning effects between the first and the second session).

85 For instance, although same-sex marriage was legalized nationwide in the US in 2015, this decision did not require private employers to offer same-sex spousal coverage if they offered coverage to opposite-sex spouses.

86 See http://kff.org/disparities-policy/issue-brief/access-to-employer-sponsored-health-coverage-for-same-sex-spouses/ (last accessed on March 20, 2017).

87 As stressed by Herek (2006), "the case of Sharon Kowalski and Karen Thompson offers a dramatic example in this regard. They had been committed partners for 4 years and were living together in a house they had jointly purchased when a 1983 automobile accident left Kowalski severely brain-damaged, unable to speak or walk, and temporarily comatose. Lacking a legal relationship to Kowalski, Thompson was blocked from even getting information about her partner's condition immediately after the accident. When Thompson disclosed the nature of their relationship to her partner's parents, Kowalski's father refused to acknowledge his daughter's lesbian orientation. He gained legal guardianship and barred Thompson from having any contact with his daughter, even by mail. It was not until 1991, after an extensive legal battle, that Thompson was named Sharon Kowalski's sole legal guardian."

129. Finally, the fear of being stigmatized may prevent sexual and gender minorities from seeing their physicians and/or disclosing their sexual orientation, gender identity or intersex status to them. This behaviour may compromise the screening of LGBTI people for a wide range of diseases, in particular those specific to their biological sex or sexual orientation. For example, lesbians as well as transmen may forgo breast or cervical exams (Quinn et al. (2015)).[88] Similarly, gay men as well as transwomen may avoid prostate cancer screening. Additionally, gay men may be less likely to detect AIDS or anal cancer (another disease widespread among male homosexuals) at a sufficiently early stage to avoid death (Rosser et al. (2016)).

### *4.1.5. Well-being*

130. Discrimination against LGBT obviously exerts a direct negative effect on their well-being, *a fortiori* when it takes the form of verbal or physical violence. By disturbing other outcomes such as family life, education, economic outcomes and health, discrimination also has the potential to indirectly hamper individuals' well-being (Dolan, Peasgood and White (2008)).

## 4.2. The limits (and advantages) of observational data

131. To test for the existence of discrimination against specific minorities, scholars seek to measure the effect of belonging to these groups rather to the majority group on various socio-economic outcomes, *other things held constant*.

132. The bulk of studies on discrimination rely on observational data, i.e. data from samples where the key explanatory variable (membership in a minority group rather than in a majority group) is beyond the researcher's control. Indeed, randomly assigning subjects to the treated group (the "minority") and the control group (the "majority") in order to investigate the impact of this assignment on specific outcomes is not an option, at least when these subjects are real. Observational data therefore offer the advantage of investigating how the minority group fares relative to the majority group for a wide range of outcomes (in fact, all the outcomes reported in the dataset under scrutiny). By contrast, only outcomes compatible with relying on fictitious subjects can be investigated with experimental data.

133. However, relying on observational data suffers from one main limitation. It is indeed likely that some third factor, often unmeasurable, is correlated with both individuals' probability of belonging to the minority group and their socio-economic outcomes. For instance, social acceptance of LGBTI is a predictor of LGBTI location. As an illustration, almost one third of LGBT in the US report that acceptance of sexual minorities in their city or town is a reason[89] why they live there (Pew Research Center (2013)). Failing to control for this geographic sorting could therefore lead to conclude that LGBT people do not face discrimination while they actually do, an error better known as the "omitted variables bias".

[88] Lesbians are already at a greater risk of developing these pathologies due to their lower probability to visit their ob-gyns: unlike sexually active heterosexual women, they are indeed less likely to need their doctors to prescribe birth control prescriptions or manage pregnancy.

[89] Local amenities are another important reason, as shown by Black et al. (2002). Notably, because they are particularly constrained in their access to children, gay men show a low lifetime demand for housing, which frees resources for allocation elsewhere. In particular, gay men disproportionately sort into high-amenity locations.

134. In this context, Oaxaca-Blinder approaches that rely on observational data are doomed to provide biased estimates of discrimination. These approaches consist of decomposing differences in various outcomes across minority and majority groups into an "explained" gap (driven by differences in observable characteristics of the groups, such as education, age, or economic sector, holding their return constant) and an "unexplained gap" (driven by differences in returns across groups, holding their observable characteristics constant). This latter component is meant to capture discrimination (Oaxaca (1973) and Blinder (1973)). Yet, however rich they might be, observational data do not allow scholars to control for all the determinants of an individual's outcome: the unexplained gap therefore encompasses group differences in unobservables, which generates an upward or a downward bias in the estimation of discrimination (depending on the sign of differences in unobservables across groups).[90]

135. The standard limitations of relying on observational data are compounded when they are used to estimate an LGBTI penalty for two main reasons. First, disclosure of sexual orientation, gender identity or intersex status of LGBTI to their social environment is not a given. Moreover, as already noted, only few population-based suveys collect information on sexual orientation and even fewer identify respondents' gender identity (none asks for interviewees' intersex status). The other surveys measure LGBTI status in an indirect manner, namely based on the sex of the respondent's partner. Put differently, most population-based surveys only allow for identifying partnered homosexuals and comparing how they fare relative to their heterosexual counterparts. This data shortage generates a wide range of additional biases that are summarized below.

### *4.2.1. A "non-diclosure bias" resulting from a sexual and gender minority status observed by researchers but not necessarily by others*

136. Compared to women or ethnic minorities, sexual and gender minorities are less easily identifiable, except when they are open about their sexual orientation, gender identity or intersex status. Yet, disclosure among LGBTI people is far from common. According to the Pew Research Center (2013), only about half of LGBT respondents say that all or most of the *important people in their life* are aware they are LGBT. Obviously, these figures are even lower when it comes to describing settings outside the family and friend circles. As an illustration, only one-third of employed LGBT adults say all or most of the people they work closely with at their job are aware of their sexual orientation or gender identity. An additional 18% say some of the people they work closely with know they are LGBT. Some 22% say only a few of their co-workers know this, and 26% say no one at work knows. In other words, the fact that not all LGBTI individuals are perceived as such by people they interact with prevents scholars from measuring discrimination against them based on observational data (Badgett (1995)), an issue referred to as the "non-disclosure bias" henceforth. As an illustration, relying on a large convenience sample of gay men collected in France (N=1,408), Laurent and Mihoubi (2016a) measure an individual earnings penalty only among those who report that their sexual orientation is likely known by their

[90] Relying on observational data likely leads to an additional bias. For instance, if the expectation of discrimination deters investment in human capital, such as education or training, part of the impact of discrimination is captured by the explained gap, meaning that its unexplained counterpart underestimates discrimination.

supervisor (or the person in charge of their career). No individual earnings gap is measured for the others.

137. One could argue, then, that advising LGBTI individuals to conceal their sexual orientation, gender identity or intersex status constitutes the solution to anti-LGBTI direct discrimination. This stance is obviously not acceptable. First, social progress is possible only if respect for and promotion of diversity is ensured. Moreover, as shown by the Pew Research Center (2013), being LGBT is a critical component of sexual and gender minorities' identity. For instance, 74% and 79% of gay men and lesbians respectively view it as an important aspect of their selves. In this setting, forced concealment and, notably, the maintenance of separate public and private personalities, should be associated with depressive symptoms, an intuition by and large confirmed by the literature (Durso and Meyer (2013) and Sedlovskaya et al. (2013)). It is therefore critical to estimate the extent of discrimination against LGBTI *were their sexual or gender minority status disclosed*, an objective hardly achievable with observational data.

### *4.2.2. Various biases resulting from an indirect measurement of sexual orientation*

138. Because direct measures of sexual orientation are scarce, homosexuals are typically identified by combining three pieces of information in population-based surveys: (i) the sex of the respondent; (ii) the sex of other household members; (iii) the relationship of the respondent with each household member. This approach therefore allows for targeting individuals living in same-sex *versus* opposite-sex couples, whenever the respondent describes one of the household members as his/her "spouse" or "partner".

139. Yet, this indirect procedure raises important identification issues. First, it focuses on a subset of LGBTI that is surely not representative of the LGBTI population as a whole: gay men and lesbians living with a same-sex partner at the time of the survey. Strictly speaking, bisexuals living with a same-sex partner at the time of the survey should also be part of this subset. However, if the large majority of gay men (98%) and lesbians (99%) indeed have a same-sex partner when they live as a couple, this is the case of only a minority (9%) of bisexuals (Pew Research Center (2013)). Put differently, an indirect identification of sexual orientation mainly leads to focus on partnered gay men and lesbians, thereby leaving non-partnered gay men and lesbians as well as bisexuals aside.

140. The second identification issue relates to the subset of partnered gay men and lesbians being potentially too small to allow isolating a sexual minority effect. Partnered gay men and lesbians indeed constitute roughly 0.6%[91] of the sample in *couples-based data* (where sexual minority or majority status is inferred through the identification of the gender of the respondent and of his/her partner). By contrast, gay men and lesbians represent 1.7% of the sample in *individuals-based data* (where sexual or gender minority/majority status is inferred through direct questions on sexual orientation and gender identity). Put differently, couples-based data exacerbate

[91] Averaging the proportion of gay men and lesbians across the seven population-based surveys recently conducted in the US (see Figures 2.2 and 2.3) yields a mean estimate equal to 1.7%. Knowing that 34% of gay men and lesbians are partnered in the US (Pew Research Center (2013)), this means that partnered gay men and lesbians stand for (1.7%*34%)=0.6% of the population.

the need for large sample sizes: samples of couples-based data must be roughly three times larger than samples of individuals-based data.

141. To better illustrate this claim, consider Table A7 in the Appendix. This table summarizes the 18 studies that have relied to date on couples-based data to compare individual earnings between partnered homosexuals and partnered heterosexuals. On average, these studies point to an individual earnings penalty for partnered gay men of 8% (see Table 5.4). Assume a researcher who wants to be able to identify this 8% penalty with couples-based data. This means that they need a sample size of partnered gay men large enough to allow them (i) to reject the so-called "null hypothesis" according to which there is no earnings differential between partnered gay men and partnered heterosexual men, *with only a 5%*[92] *probability of being wrong*; (ii) not reject the alternative hypothesis according to which partnered gay men suffer a 8% penalty, *with a 80%*[93] *probability of being right*. Standard calculation with a statistical software[94] reveals that this sample size must amount to N=639 partnered gay men. In other words, one needs an overall sample of N=213,000 individuals.[95] By contrast, one should reach N=644 gay men with individuals-based data[96] and, hence, a total sample of "only" N=75,765 individuals.[97] The fact that large sample sizes are a prerequisite in couples-based data explains why the studies reported in Table A7 either rely on Census data or on the aggregation of multiple rounds of national Labour Force Surveys.[98] This strategy indeed allows nearly all of them to satisfy the roughly "N=650 partnered gay men" condition.[99]

142. A third identification issue arises with couples-based data. Even assuming that the number of same-sex couples is high enough to perform a meaningful statistical analysis, comparing the socio-economic outcomes of individuals living in these couples with the socio-economic characteristics of individuals living in opposite-sex couples likely generates a biased estimate of the potential gap that actually prevails,

92 This percentage measures the level of "statistical significance."

93 This percentage measures the level of "statistical power."

94 To compute n1 (the sample size for partnered heterosexual men) and n2 (the sample size for partnered gay men), one needs information on the mean and standard deviation of earnings among partnered heterosexual men (this information is obtained based on the studies listed in Table A7), as well as the ratio of n2/n1. The command to be used on STATA statistical software for instance is then given by "power twomeans 32513 29912, sd(23349) nratio(0.01)," where 32,513 is the yearly individual earnings among partnered heterosexual men, 29,912 is the yearly individual earnings among partnered gay men (assuming a 8% penalty), 23,349 is the standard deviation of yearly individual earnings among partnered heterosexual men (assuming that this standard deviation is equal to the standard deviation among partnered gay men, a surmise broadly confirmed by the studies listed in Table A7), and 0.01 is the n2/n1 ratio. Indeed, assuming that heterosexuals have the same probability of being partnered as the general public (58%), and recalling that they stand for 96.5% of the population, partnered heterosexual men stand for (96.5%*58%)/2=28% of the population. Similarly, assuming that gay men have the same probability of being partnered as lesbians (this probability being, hence, equal to 34%), and that homosexuals are equally split between gay men and lesbians, partnered gay men stand for (1.7%*34)/2=0.3% of the population. Consequently, n2/n1=0.3/28=1%.

95 Indeed, we know that partnered gay men and lesbians stand for 0.6% of the sample with couples-based data, meaning that partnered gay men represent roughly 0.3% of this sample. Consequently, to get 639 partnered gay men, one needs a sample equal to (639*100)/0.3=213,000 individuals.

96 In this case, relying on the same values for yearly individual earnings as before, the command to be used on STATA statistical software is given by "power twomeans 32513 29912, sd(23349) nratio(0.018)." The n2/n1 ratio, which computes the number of gay men divided by the number of heterosexual men, is calculated based on the following reasoning: Gay men and heterosexual men stand for 1.7/2=0.85% and 96.5/2=48% of the population respectively. Consequently, the n2/n1 ratio is given by 0.85/48=1.8%.

97 Indeed, we know that gay men represent roughly 1.7/2=0.85% of the sample. Consequently, to get 644 gay men, one needs a sample equal to (644*100)/0.85=75,765 individuals.

98 As an illustration, Laurent and Mihoubi (2012) rely on 12 rounds of the French Labour Force Survey and Arabsheibani, Marin and Wadsworth (2004) on 6 rounds of the UK Labour Force Survey. Aggregating multiple rounds is less a necessity in large countries (see Elmslie and Tebaldi (2007) who rely on only one round of the US Current Population Survey).

99 The four exceptions are Clain and Leppel (2001) (N=91), Arabsheibani, Marin and Wadsworth (2004) (N=498), Humpert (2012) (N=141) (the only unpublished study among those reported in Table A7) and Laurent and Mihoubi (2012) (N=461).

*ceteris paribus*, across these groups due to (i) measurement errors and (ii) the so-called "household specialization bias."

### *Measurement errors*

143. Inaccurately recording the sex of the respondent or of his/her partner may preclude the identification of any difference in socio-economic outcomes across same-sex and opposite-sex couples. Sex misclassification indeed implies that only a fraction of the already small share of individuals categorized as living in a same-sex couple actually do have a same-sex partner.

144. Unfortunately, sex misclassification is not rare (Cortina and Festy (2014) and Banens and Le Penven (2016)). As an illustration, the US Census Bureau admitted a substantial overcount of same-sex couples in the 2010 census, mainly due to the sex misclassification of respondents in heterosexual couples or of their partners. In this setting, more than *one-in-four* same-sex couples counted in the 2010 census was likely an opposite-sex couple.[100]

145. A more precise classification of the respondent's relationship with each household member could reduce measurement errors. For instance, the 2011 Canadian census includes "opposite-sex married spouse", "same-sex married spouse", "opposite-sex common-law partner" and "same-sex common-law partner", in place of simply "spouse" or "partner". Sadly, this question does not remove the risk of misreporting. Its experimentation in the 2013 American Community Survey indeed reveals that a substantial share of individuals in opposite-sex couples mistakenly report (or are mistakenly reported) to be in a same-sex relationship.[101]

146. Measurement errors are obviously not confined to the US. Table 4.1 reports the proportion of same-sex couples derived from the latest rounds of the four cross-country population-based surveys coordinated by the European Union: the 2010 European Working Condition Surveys (EWCS), the 2011-2012 European Quality of Life Surveys (EQLS), the 2014 EU-Labour Force Survey (EU-LFS) and the 2014 EU-Statistics on Income and Living Conditions (EU-SILC).[102]Despite similar interviewing methods (face-to-face interviews), the EQLS provides unrealistic estimates as compared to the other surveys. As an illustration, the proportion of same-sex couples in the Netherlands fluctuates around 1% in the EWCS, EU-LFS and EU-SILC, but amounts to 7.8% in the EQLS (with an average proportion of same-sex couples at 3.1% across European countries). These figures suggest massive sex misclassification

[100] See http://www.pewsocialtrends.org/2011/09/27/census-bureau-flaws-in-same-sex-couple-data/ (last accessed on October 26, 2016).

[101] See http://www.pewresearch.org/fact-tank/2015/06/24/how-many-same-sex-married-couples-in-the-u-s-maybe-170000/ (last accessed on October 26, 2016).

[102] The European Social Survey (ESS), the Generations and Gender Programme (GGP) and the Survey of Health, Ageeing and Retirement in Europe (SHARE) are the other four international surveys that allow for the identification of same-sex couples. Fischer (2016) exploits the ESS and the GGP for a comparison of socio-economic outcomes across same-sex and opposite-sex couples. But the sample sizes are small. Pooling all available rounds and countries together, Fisher (2016) obtains a number of partnered homosexuals (*versus* partnered heterosexuals) equal to N=602 (*versus* N=42,027) in the ESS and to N=383 (*versus* N=37,565) in the GGP. As for the SHARE, it is representative only for individuals aged 50 or older. Note that some modules of the International Social Survey Programme (ISSP) permit collecting direct information on respondents' sexual behavior and, hence, orientation in a cross-country perspective. For instance, Heineck (2009) exploits the 1994 module of the ISSP on "Family and Gender Roles". But the number of observations (N=60) is again very small.

in the EQLS[103] given that the proportion of same-sex couples should typically vary around 1%.[104]

147. But Table 4.1 points to other shortcomings as well. If the EWCS, EU-LFS and EU-SILC seem guarded from measurement errors that inflate the proportion of same-sex couples by recording some opposite-sex couples as being same-sex, they look prone to another type of sex misclassification: sex recoding, which minimizes the proportion of same-sex couples by viewing these couples as anomalies to be assigned to the opposite-sex category or even discarded from the survey.[105] Indeed, several countries in Table 4.1 report no same-sex couples, despite large sample sizes that should allow detecting at least some of them. This is for instance the case of the 2014 EU-LFS in Austria. Consequently, the average proportion of same-sex couples is well below 1% in the EWCS, EU-LFS and EU-SILC. All in all, sex misclassification appears widespread, thereby compromising the possibility for identifying a sexual minority effect with couples-based data.

103 Investigating why the EQLS would be more prone to sex misclassification is beyond the scope of this paper.

104 Based on her analysis of the ESS and GGP, Fischer (2016) reports this 1% estimate. This is also the figure that one obtains based on US data. Indeed, knowing that 34% of gay men and lesbians are partnered in the US and that 58% of individuals in the general public live in a couple (Pew Research Center (2013)), this means that partnered gay men and lesbians stand for (1.7%*34%)/58%=1% of homosexual and heterosexual partnered individuals. It is worthwhile noting that this proportion coincides with the ratio found by Lofquist and Lewis (2015) when inconsistencies in reports of relationship ("same sex" versus "opposite-sex") and sex (of the respondent and his/her partner) in the 2013 American Community and Housing Surveys are taken into consideration.

105 As an illustration, the interviewers of the French Labour Force Survey were instructed, at least before 2003, to leave the sex of the respondent's spouse (married or not) as missing whenever the spouse was of the same sex as the respondent (Laurent and Mihoubi (2012)).

**Table 4.1. Proportion of same-sex couples in OECD countries, based on the 2010 EWCS, the 2011-2012 EQLS, the 2014 EU-LFS and the 2014 EU-SILC**

| | % of same-sex couples (i.e. individuals living with a same-sex partner/individuals living with a same-sex or opposite-sex partner) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2010 EWCS | | 2011-2012 EQLS | | 2014 EU-LFS | | 2014 EU-SILC | |
| | % | ratio | % | ratio | % | ratio | % | ratio |
| Austria | 0 | (0/644) | 4.7 | (31/662) | 0 | (0/37,182) | 0.3 | (22/6,438) |
| Belgium | 0.7 | (19/2,710) | 6.1 | (34/553) | 1.3 | (160/12,514) | 1.1 | (72/6,728) |
| Czech Republic | 0.3 | (2/695) | 2.5 | (16/643) | 0.3 | (56/22,108) | 0.0 | (4/9,394) |
| Denmark | 0.1 | (1/809) | 0.9 | (6/656) | n.a. | n.a. | 0.4 | (28/7,956) |
| Estonia | 0 | (0/637) | 1.8 | (9/490) | 0.1 | (4/7,004) | 0.1 | (4/7,436) |
| Finland | 2.0 | (11/547) | 3.6 | (22/610) | n.a. | n.a. | 0.3 | (52/15,442) |
| France | 1.8 | (33/1,857) | 4.4 | (59/1,352) | 0.9 | (893/103,755) | 0.8 | (106/13,838) |
| Germany | 0 | (0/1,420) | 8.2 | (142/1,730) | n.a. | n.a. | n.a. | n.a. |
| Greece | 0 | (0/677) | 0.2 | (1/598) | 0 | (0/49,464) | 0 | (0/10,952) |
| Hungary | 0 | (0/653) | 2.5 | (14/565) | 0.0 | (5/47,269) | 0.1 | (8/10,364) |
| Iceland | n.a. | n.a. | 1.3 | (9/706) | n.a. | n.a. | 0.2 | (10/4,446) |
| Ireland | 0 | (0/619) | 5.0 | (31/618) | 0.6 | (252/39,858) | 0.8 | (50/6,172) |
| Italy | 0 | (0/964) | 0.7 | (10/1,371) | 0 | (0/182,239) | 0 | (0/22,848) |
| Latvia | 0 | (0/611) | 2.0 | (9/451) | 0.0 | (2/10,659) | 0 | (0/5,658) |
| Luxembourg | 1.1 | (7/662) | 5.0 | (33/660) | 0.6 | (42/6,991) | 0.4 | (20/5,050) |
| Netherlands | 0.8 | (6/724) | 7.8 | (47/604) | 1.1 | (436/40,526) | 1.2 | (156/13,290) |
| Norway | 0.4 | (3/779) | n.a. | n.a. | n.a. | n.a. | 0.6 | (64/9,956) |
| Poland | 0 | (0/979) | 1.7 | (25/1,440) | 0.4 | (378/107,060) | 0 | (4/17,556) |
| Portugal | 0 | (0/710) | 2.9 | (18/621) | 0.1 | (20/35,767) | 0.2 | (18/9,088) |
| Slovak Republic | 0 | (0/670) | 0.3 | (2/603) | 0.0 | (6/19,539) | 0 | (0/7,206) |
| Slovenia | 0 | (0/947) | 0.2 | (1/588) | 1.5 | (239/16,478) | 0.0 | (6/13,572) |
| Spain | 0.3 | (2/642) | 3.1 | (27/874) | 0.2 | (122/56,995) | 0.3 | (40/15,060) |
| Sweden | 1.8 | (12/654) | 2.1 | (12/567) | n.a. | n.a. | 0.4 | (28/7,966) |
| Switzerland | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 0.9 | (76/8,456) |
| Turkey | 0 | (0/1,355) | 1.9 | (25/1,333) | n.a. | n.a. | n.a. | n.a. |
| United Kingdom | 0.2 | (2/1,047) | 2.4 | (29/1,222) | 0.1 | (28/41,426) | 0.8 | (88/11,276) |
| Average | 0.4 | (98/22,012) | 3.1 | (612/19,517) | 0.3 | (2,643/836,834) | 0.3 | (856/246,148) |

*Source*: 2010 EWCS, 2011-2012 EQLS, 2014 EU-LFS and 2014 EU-SILC.

### *The household specialization bias*

148. In *A Treatise on the Family* (1993) first published in 1981, Becker develops a family model in which differences in market outcomes across men and women derive from household specialization. Noting that "children are usually not purchased but are self-produced by each family, using market goods and services and the own time of parents, especially of mothers," Becker emphasizes the biological comparative advantage for women in home production (notably with regard to childbearing and child rearing) and for men in market production. As a result, according to this theory, women should rationally under-invest while men should rationally over-invest in market-oriented activities.

149. This biological determinism is only partly counteracted by a general shift toward more egalitarian gender norms (OECD (2017)). Even in Scandinavian countries that offer better work-life balance to women, gender norms remain fairly traditional: in these countries, survey respondents support the view that women should work full-



For Official Use

time before having children and after the children have left home, but that they should work only part-time or not at all when they have children living at home (Kleven, Landais and Sogaard (2017)).

150. Consequently, labour force participation (and earnings) are typically lower among women than among men: the gender gap in full-time employment rates was 22.4 percentage points in 2013 across the OECD (OECD (2017)). This gap is particularly wide among couples *with children*, but it also prevails among *childless* couples. As an illustration, partnered childless women aged 25 to 44 do 40 minutes less paid work and 30 minutes more unpaid work than childless partnered men in the US[106] (OECD (2017)).

151. By contrast, same-sex couples are expected to show a lower degree of household specialization by virtue of being same-sex. This prediction is by and large confirmed empirically (Jaspers and Verbakel (2013) in the Netherlands, Jepsen and Jepsen (2002, 2015) in the US, Bauer (2016) in Australia, Austria, Belgium, France, the Netherlands, Norway and Sweden).[107]

152. Consequently, the difference in labour supply and earnings across same-sex and opposite-sex couples is likely contaminated by a *household specialization bias* that works toward measuring a penalty for gay men, but runs against identifying it for lesbians. Indeed, partnered gay men invest less in market-oriented activities than partnered heterosexual men, while the reverse holds for lesbians. Therefore, the labour supply and earnings of gay men (resp. lesbians) living as a couple should be lower (resp. higher) than that of their heterosexual counterparts.

153. It is important to stress that the household specialization bias emerges *even in cases where same-sex households do specialize*. As emphasized by Ahmed, Andersson and Hammarstedt (2011a): "If homosexual households, like heterosexual households, in fact specialize to some degree, it is not surprising if gay males at the individual level, on average, have a smaller labour supply (or lower earnings) than heterosexual males, because the population of gay males (in partnership or civil unions) will consist of both primary (with high labour supply and high earnings) and secondary earners (with low labour supply and low earnings), while the population of heterosexual married males will mostly consist of primary earners. Similarly, the sample of lesbians will consist of both primary and secondary earners, while the sample of heterosexual married females will consist of mostly secondary earners, which might therefore result in higher commitment to the labour market (or higher earnings) for lesbians than for heterosexual females."

### *The social desirability bias*

154. In a context of pervasive homophobia, transphobia and intersexphobia, adherence to social norms, the so-called "social desirability" (Maccoby and Maccoby (1954), Edwards (1957), Fisher (1993)) likely prevents at least some individuals living in same-sex couples from disclosing this information.

---

106 As a comparison, partnered women aged 25 to 44 with children do 130 minutes less paid work and 150 minutes more unpaid work than childless partnered men in the US (OECD (2017).

107 Within same-sex couples, the level of specialization is found to be lower among coupled lesbians than among coupled gay men (Alden et al. (2015) and Aksoy, Carpenter and Franck (2016)). Moreover, Giddings et al. (2014) find that the "specialization gap" between same-sex and opposite-sex couples narrows across birth cohorts in the US.

155. If social desirability among same-sex couples is indeed at stake, one should observe a positive relationship between the proportion of individuals who report living with a same-sex person in a given country and this country's acceptance of LGBTI people (Berg and Lien (2009)). Figure 4.1 puts this intuition to the test for European countries. It confirms a positive and statistically significant correlation between the proportion of same-sex couples and acceptance of homosexuality.

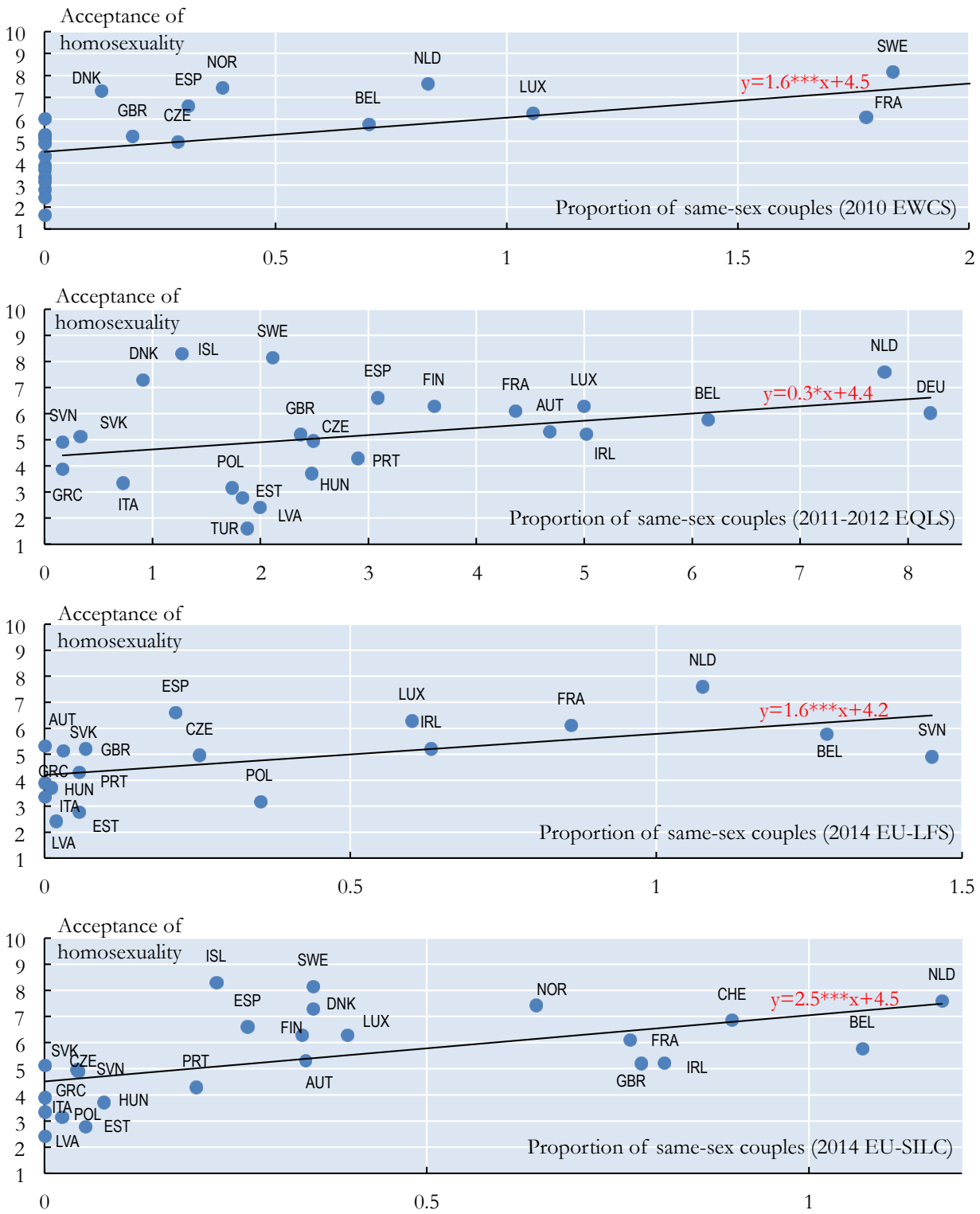
156. Social desirability would not yield any bias in a comparison of socio-economic outcomes of individuals living in same-sex *versus* opposite-sex couples, if the probability of concealing one's sexual identity were unrelated to these very outcomes. Unfortunately, the risk is high that the pressure to conform to heteronormativity (i.e. the belief that people fall into distinct and complementary genders, man and woman, with natural roles in life) be stronger for gay men and lesbians who struggle the most in their socio-economic life. In other words, only the most successful gay men and lesbians (those suffering the least from discrimination) may disclose their sexual orientation to the interviewer.

157. This process leads to a selection bias that runs against finding an LGBTI penalty. Barret and Pollack (2005) and Pathela et al. (2006) provide results consistent with this intuition: among men who experience same-sex sexual behaviour, those with higher education and income are more likely to self-identify as gay, despite the fact that this population lives in environments conducive to disclosure of sexual identity (i.e. large US cities with highly visible gay cultures: Chicago, Los Angeles, New York and San Francisco). The decreasing tendency to disclose one's sexual orientation or gender identity to the interviewer the more one feels vulnerable to anti-LGBT discrimination is referred to as the *social desirability bias* in the remainder of this review.



For Official Use

**Figure 4.1. Acceptance of homosexuality (2001-2014) and proportion of same-sex couples based on various cross-country surveys, in OECD countries**




*Source*: Table 4.1, AsiaBarometer, European Values Survey, Latinobarometro and World Values Survey.

### *4.2.3. Direct measures of sexual and gender minority status should be a priority for data collection*

158. While couples-based data only allow for identifying partnered gay men and lesbians, individuals-based data permit researchers to study both partnered and non-partnered gay men, lesbians, male and female bisexuals as well as male and female transgender and intersex people. They are therefore more representative of the diversity of sexual and gender minorities than are couples-based data.

159. Individuals-based data suffer from some of the same limitations as couples-based data. They do not help solving the omitted variables bias that prevents researchers from identifying the origin of socio-economic gaps. Nor do they allow removing the non-disclosure bias: there is indeed no reason to believe that people who self-identify as gay or lesbian are more likely to disclose their sexual minority status to their social environment than men and women living with a same-sex partner.[108] Individuals-based data are also unable to fully overcome the measurement error bias: respondents (or their interviewer) should not be substantially less likely to inadvertently fail to report their correct sexual orientation or gender identity than they are to unintentionally mispecify their sex or that of their partner. Finally, unless one relies on sexual attraction or behaviour instead of sexual self-identification to measure sexual orientation, the social desirability bias should also be pervasive with individuals-based data.

160. Nonetheless, individuals-based data can help determine whether the LGBTI population stands out in terms of socio-economic characteristics. Specifically, they constitute a remedy for the fifth bias that compromises the validity of studies using couples-based data: the household specialization bias. Individuals-based data indeed allow for controlling for the respondent's partnership status. Moreover, in the case this control is not enough, notably if household specialization is found to be stronger in opposite-sex than in same-sex couples, individuals-based data offer the possibility to focus on *non-partnered* individuals only. This strategy obviously requires larger sample sizes than approaches combining both partnered and non-partnered individuals. In the latter case, it has already been mentioned that the sample size needed to identify an 8% individual earnings penalty for gay men amounts to N=75,765 individuals. As a comparison, restricting one's attention to non-partnered individuals requires a sample of N=108,667 individuals.[109]

161. The advantages of individuals-based over couples-based data should not, however, mask their limits: they are not able to curb many of the biases inherent to observational data. As such, experimental data constitute a better solution for anyone willing to rigorously identify an LGBTI penalty and its causes. But they are no magic

108 To reduce the disclosure bias with individuals-based data, it is notably important to exclude "masked" gay men and lesbians (i.e. those partnered with an opposite-sex person) from the analysis, as it is done by Blandford (2003) or Cushing-Daniels and Yeung (2009).

109 Indeed, relying on the same values for yearly individual earnings as before, the command to be used on STATA statistical software is given by "power twomeans 32513 29912, sd(23349) nratio(0.03)." The n2/n1 ratio, which computes the number of non-partnered gay men divided by the number of non-partnered heterosexual men, is calculated based on the following reasoning: Assuming that heterosexuals have the same probability of being partnered as the general public (58%), and recalling that they stand for 96.5% of the population, non-partnered heterosexual men stand for (96.5%*42%)/2=20.3% of the population. Similarly, assuming that gay men have the same probability of being partnered as lesbians (this probability being, hence, equal to 34%), and that homosexuals are equally split between gay men and lesbians, non-partnered gay men stand for (1.7%*66)/2=0.6% of the population. Consequently, n2/n1=0.6/20.3=3%. The outcome of this power analysis indicates that one needs N=652 non-partnered gay men to identify an 8% individual earnings penalty. Knowing that non-partnered gay men stands for 0.6% of the population, the size of the sample should amount to N=(652*100)/0.6=108,667 individuals.

bullets either. As already stressed, while observational data offer the significant advantage of investigating how the minority group fares relative to the majority group for a wide range of outcomes, only outcomes compatible with relying on fictitious subjects can be investigated with experimental data.

## 4.3. The advantages (and limits) of experimental data

162. Experimental data stem from the random assignment of individuals to the treated group (being LGBTI) and the control group (being non LGBTI). For this to happen, individuals in the treated and in the control groups are typically fictitious "applicants" for a specific benefit (a job, an apartment for rent, a service, a piece of information, etc.). This approach offers the great advantage of measuring the existence of direct discrimination and its extent in certain contexts, a *causal* inference hardly feasible with observational data.

163. More precisely, two types of experiments can be implemented: correspondence studies and audit studies:

- Introduced by Jowell and Prescott-Clarke (1970) to measure discrimination in the labour market, *correspondence studies* consist of comparing the callback rates of fictitious applicants who are identical in every respect save their group membership. These fictitious applicants have, by construction, no in-person contact with the recipient(s) of their applications, hence the term "correspondence".
- By contrast, *audit studies* consist of having actors (the "auditors"), endowed with identical fictitious applications and coached to act alike, apply over the telephone or in person.

164. Although audit studies have become popular in the early 1990s (Cross et al. (1990), Turner, Fix and Struyk (1991) and Bendick, Jackson and Reinoso (1994)), they have soon been subject to serious criticism. First, despite efforts to match auditors on several characteristics, differences that are potentially critical for the recipients of their applications inevitably remain. Second, auditors obviously know the purpose of the study they are part of. This can lead them to consciously or subconsciously behave in a way consistent or inconsistent with their beliefs about how different groups are treated. Third, audit studies are extremely expensive, which precludes researchers from generating large samples (Bertrand and Mullainathan (2004)).

165. By contrast, correspondence studies permit greater comparability across groups of applicants, less room for conscious or subconscious deviations from the experimental setup, and larger sample sizes. They currently constitute the main experimental approach to measure discrimination (Bertrand and Duflo (2016)).

166. However, they are not devoid of weaknesses. Two of them should be (re)emphasized:

- First, correspondence studies cannot measure discrimination in contexts where in-person contacts are required. This shortcoming notably hampers researchers from relying on experiments to estimate discrimination in access to healthcare, thereby leading to questionable evidence of discrimination in this field. Moreover, this weakness implies that discrimination in the labour market is measured at only one point of an individual's career, i.e. his/her access to a job interview. It says

nothing however about his/her likelihood of being hired, or paid equally and promoted once hired. Nevertheless, audit studies indicate that, conditional on being interviewed, individuals from the minority (i.e. the group that typically receives the lowest rate of invitation to a job interview) are also less likely to be hired (e.g. Cédiey and Foroni (2008)). These findings suggest that correspondence studies *underestimate* hiring discrimination.

- Second, correspondence studies raise ethical issues. They indeed amount to deceiving people and wasting their time by sending them, without their consent, fictitious applications they perceive as genuine (Riach and Rich (2004)). However, research ethics boards designated to approve, monitor, and review research involving humans, typically consider that this cost is overcompensated by the benefits of better measuring discrimination and its mechanisms, a prerequisite to devising efficient anti-discrimination policies.

167. Despite these limitations, correspondence studies are considered as the best possible approach to identify discrimination (Bertrand and Duflo (2016)).



For Official Use

# 5. Are LGBTI penalized, and why?

168. Various field experiments have shown that sexual minorities face discrimination in their everyday life. For instance, Jones (1996) sends letters from either a same-sex or opposite-sex couple, requesting weekend reservations for a one-bed room in hotels and bed-and-breakfast establishments in the US. His results show that opposite-sex couples are granted 20% more reservations than both male and female same-sex couples. Similarly, Walters and Curran (1996) conduct an audit study where same-sex and opposite-sex couples enter retail stores in the US while an observer measures the time it takes for the staff to welcome them. They find this time to be significantly less for heterosexual than for homosexual couples who often were not assisted and who were more likely to be repudiated.

169. Sexual minorities appear unfairly treated even when they urgently need help. This finding derives from experiments that apply the so-called "wrong number technique" (Shaw, Borough and Fink (1994) in the US, Gore, Tobiasen and Kayson (1997) in the US, Ellis and Fox (2001) in the UK, Gabriel et al. (2001) in Switzerland and Gabriel and Banse (2006) in Germany).[110] In this approach first introduced by Gaertner and Bickman (1971), households receive apparently wrong-number telephone calls whereby the caller, whose minority or majority group membership is stressed, explains his/her need for his/her interlocutor to deliver an urgent message to the actual addressee of the call. More precisely, these experiments typically involve a male (resp. female) caller who seeks to reach his girlfriend (resp. her boyfriend) in case of a heterosexual relationship, or his boyfriend (resp. her girlfriend) in case of a homosexual relationship. Indicating that his (resp. her) car has broken down and that he (resp. she) is out of change at a pay phone, the caller requests help by asking the subject to call his (resp. her) partner for him (resp. her). Results consistently show that perceived heterosexuals are more likely to receive help than perceived homosexuals.[111]

[110] Gray, Russell and Blockley (1991), Tsang (1994) or Hendren and Blank (2009) in the UK also study helping behaviour toward perceived homosexuals. Their experiments involve auditors wearing a T-shirt with either a pro-gay slogan or without any slogan who approach shoppers on the street asking them to provide change for a 1-pound note (or passers-by asking them to give 10 pence for a parking meter). The findings point to less help provided to the ostensibly pro-gay person. Yet, because the T-shirt in the control group is blank, one cannot disentangle whether discrimination is directed at gay men and lesbians or at people wearing T-shirts with any political slogan.

[111] Other experiments use the so-called "lost-letter technique". As explained by Milgram, Mann and Harter (1965) who introduced it, this approach consists "of dispersing in city streets a large number of unmailed letters. The letters are enclosed in envelopes that have addresses and stamps on them but that have not yet been posted. When a person comes across one of these letters on the street, it appears to have been lost. Thus he has a choice of mailing, disregarding, or actively destroying the letter. By varying the name of the organization to which the letter is addressed and distributing such "lost letters" in sufficient quantity, it is possible to obtain a return rate specific to the organization. The focus of the technique is not on the individual reaction to the lost letters but, rather, on the rate of response for a particular organization relative to other organizations that serve as controls." Lost-letter experiments typically reveal a lower return rate for LGBT-related organizations (see Bridges (1996), Bridges, Williamson and Jarvis (2001) or Bridges et al. (2002) in the US). Yet, these studies provide only an indirect proxy of attitudes toward sexual and gender minorities, since acceptance of LGBT organizations, not of LGBT individuals, is tested.

**Table 5.1. Breakdown of studies that test for an employment and/or individual earnings gap between LGBTI and the rest of the population as of 2016, by country and category of sexual and gender minority**

| | LGBTI | L | G | B | T | I |
|---|---|---|---|---|---|---|
| US | **29** | 20 | 23 | 4 | 2 | |
| Sweden | **5** | 5 | 5 | | | |
| UK | **5** | 5 | 5 | 2 | | |
| Canada | **3** | 3 | 3 | | | |
| Greece | **3** | 1 | 2 | 1 | | |
| Australia | **2** | 2 | 1 | 2 | | |
| France | **2** | 1 | 2 | | | |
| Germany | **2** | 2 | 1 | | | |
| Austria | **1** | 1 | | | | |
| Belgium | **1** | 1 | | | | |
| Cyprus | **1** | 1 | 1 | | | |
| International (Australia, Bulgaria, Ireland, Poland and the US) | **1** | 1 | 1 | 1 | | |
| Italy | **1** | 1 | 1 | | | |
| Netherlands | **1** | 1 | 1 | 1 | | |
| **TOTAL** | **57** | **45** | **46** | **11** | **2** | **0** |

*Source*: Tables A1 to A9 in the Appendix.

170. If, as illustrated, sexual minorities are discriminated against in their everyday life, one should expect to measure an LGBTI penalty along various key socio-economic dimensions: family life, education, economic outcomes, health and well-being. This section investigates this issue by reviewing both survey-based and experimental evidence. It is worthwhile noting that most of this evidence stems from the US, which reflects much more research being done in the US rather than the US having disproportionate levels of anti-LGBTI discrimination. Moreover, this evidence mainly focuses on gay men and lesbians, leaving bisexuals and transgender people aside and completely ignoring intersex people.

171. As an illustration, Table 5.1 breaks down the 57 studies that explore an employment and/or individual earnings gap[112] between LGBTI and the rest of the population, by country and category of sexual and gender minority: US-based and LG-focused studies do form the majority. It is important to stress however that 22 studies concern European countries.

## 5.1. Family life

172. There is no stronger evidence on the specific challenges faced by transgender and intersex people in their family life than that already reported in Section 4.1. By contrast, a substantial literature is devoted to same-sex parents and their children.

173. This section therefore focuses on LGB individuals. More precisely, it explores whether, indeed, barriers to their legal recognition undermines the stability of same-sex couples and their children's well-being.

[112] The expression "individual earnings gap" is defined by opposition to "household earnings gap".

### *5.1.1. The stability of same-sex couples*

174. Evidence shows that same-sex cohabiting couples are overwhelmingly less stable than heterosexual couples, judging from convenience samples (Blumstein and Schwartz (1983), Kurdek (1998, 2004) or Balsam et al. (2008) in the US) or population-based samples (Kalmijn, Loeve, and Manting (2007, Netherlands), Lau (2012, UK) or Manning, Brown and Stykes (2016, US)). Yet, as already stressed, this pattern may at least be partly related to same-sex couples' lower access to legally recognized partnerships.

175. Rosenfeld (2014) relies on a US longitudinal representative dataset comprising both same-sex and opposite-sex couples. He confirms that same-sex couples are less stable holding socio-economic characteristics constant. However, as soon as he controls for whether couples are married or in a marriage-like commitment (such as domestic partnerships or civil unions offered at the state or municipality level), the break-up rate for same-sex couples becomes comparable to the break-up rate for heterosexual couples. This result suggests that same-sex couples do suffer from discrimination in their family life: the barriers they face to their couple's legal recognition negatively affect their couple stability.[113]

### *5.1.2. The well-being of children living within same-sex couples*

176. Any well-being deficit among children living with same-sex rather than opposite-sex parents may be principally related to differences in stability across these family structures, in particular due to the low legal recognition of same-sex couples. Recent studies, all conducted in the US, have confirmed this intuition (Rosenfeld (2010), Potter (2012), Manning, Fetro and Lamidi (2014), Rosenfeld (2015), Reczek et al. (2016)): family instability explains most of the negative health and educational outcomes that have been documented among children of gay and lesbian parents relative to children from traditional families, i.e. households with two (married) biological parents.

177. It is important to stress that the family instability experienced by children living in same-sex couples is not only related to the greater instability of *unmarried* same-sex couples, but also to the fact that "most children being raised by same-sex couples were born to opposite-sex parents, one of whom is now in the same-sex relationship." (Gates (2015)). It therefore comes as no surprise that children living with same-sex parents present similar outcomes than children living in other nontraditional families also characterized by a history of family transitions, e.g. children living with divorced parents, a single parent or stepparents (Rosenfeld (2010, 2015) or Potter (2012)).

178. Greater acceptance of sexual minorities should therefore lead to greater well-being of their children, through other channels than simply the legalization of same-sex marriage. As emphasized by Gates (2015), "reduced social stigma means that more LGBT people are coming out earlier in life. They're less likely than their LGBT counterparts from the past to have opposite-sex relationships and the children such

[113] Andersson et al. (2006) and Ross, Gask and Berrington (2011) compare the break-up rate of same-sex couples in legally recognized partnerships with that of heterosexual married couples in Sweden and the UK, respectively. However, their approach relies on disjoint datasets for same-sex and heterosexual couples, and, hence, prevents them from matching these couples on critical characteristics. This methodological limitation might explain the inconsistency of the results: while Andersson et al. (2006) report divorce-risk levels considerably higher in same-sex rather than opposite-sex marriages, Ross, Gask and Berrington (2011) find that the break-up rate of same-sex civil partnerships is lower than the break-up rate of heterosexual marriages.

relationships produce. At the same time, more same-sex couples are adopting children or using reproductive technologies like artificial insemination and surrogacy. Compared to a decade ago, same-sex couples today may be less likely to have children, but those who do are more likely to have children who were born with same-sex parents who are in stable relationships."

179. It is surprising that when controlling for family stability the differential in well-being between children of same-sex and opposite-sex couples disappears. Indeed, as noted earlier, children in same-sex couples are at risk of being discriminated against for having same-sex parents in the first place. As an illustration, relying on a correspondence study conducted in Spain, Diaz-Serrano and Meix-Llop (2016) examine whether schools are indeed more reluctant to give information to homosexual parents during children's pre-registration period. The authors create three types of fictitious couples (one heterosexual, one same-sex male, and one same-sex female) and send emails to schools in which these fictitious couples make a request for an interview and a visit. The results point to a substantial discrimination against children of same-sex couples, a finding driven by the unfair treatment of partnered gay men: while the callback rate of partnered lesbians is indistinguishable from that of their heterosexual counterparts, the callback rate of heterosexual male couples is 50% higher than the callback rate of same-sex male couples (67% *vs* 45%).

180. The fact that discrimination (at school, at least) against children of same-sex parents does not translate into their lower well-being in multi-variate regressions that control for family stability (but do not control for whether these children are discriminated against for having same-sex parents) suggests the existence of a countervailing omitted variable. This could be same-sex parents' greater involvement in their children's education, in a context where they are more likely to choose to be parents compared to their heterosexual counterparts. As stressed by Rosenfeld (2010): "Same-sex couples cannot become parents through misuse of, or failure of birth control as heterosexual couples can. Parenthood is more difficult to achieve for same-sex couples than for heterosexual couples, which implies a stronger selection effect for same-sex parents. If gays and lesbians have to work harder to become parents, perhaps those gays and lesbians who do become parents are, on average, more dedicated to the hard work of parenting than their heterosexual peers, and this could be beneficial for their children."

181. Relying on the American Time Use Survey, Prickett, Martin-Storey and Crosnoe (2015) provide evidence consistent with this intuition: same-sex couples spend more time with their children than opposite-sex couples. Women (regardless of their partners' sex) and partnered gay men engage in a similar amount of child-focused time with children (roughly 100 minutes per day). By contrast, partnered heterosexual men dedicate less than one hour to their children, on average.

## 5.2. Education

182. Schools play an important dual role in preparing adolescents for the transition to adulthood: they not only provide them with skills and knowledge but also with social norms and values. In a world that is often still ruled by heteronormativity, homosexual, transgender and intersex students may be particularly disadvantaged.

183. This section first provides evidence on whether LGB students suffer academically. It then investigates the case of transgender and intersex students.

### *5.2.1. LGB students*

*Lower educational achievement at school…*

184. Few studies have examined how sexual minority youth fare in academic terms. Pearson and Wilkinson (2016) are the first to take full advantage of the US National Longitudinal Study of Adolescent to Adult Health (Add Health).[114] Add Health is the first nationally representative sample of youth that includes information on repondents' sexual orientation and education. This data structure allows the authors to study the relationship between educational attainment and experiencing same-sex attraction or sexuality in adolescence (i.e. in waves 1 and 2) or early adulthood (i.e. in waves 3 and 4).[115]

185. Pearson and Wilkinson (2016) reveal[116] that same-sex attraction or sexuality in adolescence is associated with a lower probability of high school graduation, for both male and female respondents. However, conditional on completing high school or earning an equivalency degree, this disadvantage persists only for lesbians: men who experience same-sex attraction or sexuality in adolescence are no less likely to enrol in or complete college.

186. Experiencing same-sex attraction or sexuality for the first time in adulthood is expected to be less detrimental to educational attainment since victimization of LGBTI is less frequent in college. Yet, Pearson and Wilkinson (2016) confirm this intuition only for gay men: late same-sex attraction or sexuality is unrelated to gay men's probability of college enrolment or completion, but it is negatively associated with lesbians'.

187. The negative relationship between same-sex attraction or sexuality and the educational attainment of lesbians beyond high school may be due to the persistence of a minority stress. It may also reflect that lesbians feel less compelled to "do femininity", given that heterosexual desire is a key dimension of hegemonic femininity (Tolman (2002) and Hamilton (2007)). In particular, they may be less willing to conform to gendered expectations regarding academic behaviour, in which girls are supposed to be passive and compliant students who earn good grades (Mickelson (2003), Morris (2005) and Orr (2011)).

188. A symmetric argument could be used to elucidate gay men's ability to overcome the academic disadvantage of their early same-sex attraction or sexuality and to not suffer from their late homosexual feelings and behaviours. More precisely, gay men may feel less compelled to "do masculinity", which, in a context where hegemonic masculinity is often viewed by youth as contradictory with academic success (Carter (2005), Pascoe (2007) and Morris (2008, 2012)) implies that they focus more on their educational achievements than do their heterosexual counterparts (at least when their

114 This survey is a longitudinal study of a nationally representative sample of adolescents who were enrolled in grades 7-12 during the 1994-95 school year. This cohort was first interviewed in 1994-1995 (Wave 1) and followed-up in 1995-1996 (Wave 2), in 2001 (Wave 3) and in 2008 (Wave 4), when the sample was aged 24-32.

115 Although they exploit AddHealth somewhat differently, Russel, Seif and Truong (2001), Pearson, Muller and Wilkinson (2007) and Walsemann et al. (2014) provide results in line with those of Pearson and Wilkinson (2016).

116 Obviously, the authors control for parents' education. Note that comparing the educational attainment of parents of homosexual individuals with the educational attainment of parents of heterosexual individuals yields inconsistent results. While Black et al. (2003) report no difference in education between parents of gay men and parents of heterosexual men, Sabia and Wooden (2015) document lower educational attainment among the former. By contrast, Sabia and Wooden (2015) find that parents of lesbians are more educated than parents of heterosexual women.

school environment is welcoming enough to enable them to do so, which seems to be the case in college). Consistent with this intuition, Carpenter (2009) shows that gay men have higher college grade point averages and perceive their academic work as more important than do their straight peers, a pattern not observed among lesbians.

189. Despite the need to clarify the mechanisms, Pearson and Wilkinson (2016)'s findings are clear: experiencing same-sex attraction or sexuality at any point in the life course until adulthood for women and in adolescence for men is associated with lower educational achievement. Yet, representative national surveys conducted among adults indicate that homosexuals are significantly more likely to be college educated as compared to their heterosexual counterparts.

### *… but higher educational attainment in adulthood*

190. Black et al. (2000) compare the educational attainment of individuals living in same-sex *versus* opposite-sex couples, based on three US datasets that combine both couples- and individuals-based data: the General Social Survey (GSS), the National Health and Social Life Survey (NHSLS) and the 1990 US Census. The GSS-NHSLS (individuals-based) data reveal a significant educational advantage of both gay men and lesbians: 13% of gay men have postcollege education and a further 24% have earned college degrees. The corresponding rates for married men are 10% and 17% respectively. Among lesbians, 14% have postcollege education and 25% have college education; comparable rates for married women are 6% and 16% respectively. The 1990 Census (couples-based) data provide similar results.

191. Subsequent studies have all confirmed the higher educational attainment among gay men and lesbians, based on bivariate analyses not only in the US but also in Australia, Canada, France, Germany, Sweden and the UK. This result holds whether one relies on couples[117]- or on individuals[118]-based data.

192. It is important to note that evidence on the educational attainment of bisexuals is scarce and inconsistent. Relying on the Australian Longitudinal Survey of Women's Health, Carpenter (2008b) shows that young bisexual women (age 22-27) are significantly overrepresented among high school dropouts compared to heterosexual women. By contrast, Aksoy, Carpenter and Frank (2016) find an educational advantage for bisexuals in the UK.

### *An illustration of the social desirability bias?*

193. A possible explanation for the two contradictory findings that male and female homosexuals show lower educational achievements at school but higher educational attainment in adulthood may be a social desirability bias, whereby only the most successful gay men and lesbians disclose their sexual orientation in adulthood. Because educational attainment is a key determinant of social, economic, and health

[117] See Klawitter and Flatt (1998), Alegretto and Arthur (2001), Clain and Leppel (2001), Carpenter (2004), Black, Sanders and Taylor (2007), Elmslie and Tebaldi (2007), Jepsen (2007), Antecol, Jong and Steinberger (2008), Daneshvary, Waddoups and Wimmer (2008, 2009), Leppel (2009), Baumle and Poston (2011), Klawitter (2011) for the US; Arabsheibani, Marin and Wadsworth (2004, 2005) for the UK; Humpert (2012) for Germany; Waite and Denier (2015) for Canada; Laurent and Mihoubi (2012) for France; Ahmed and Hammarstedt (2010) and Ahmed, Andersson and Hammarstedt (2011a, 2013a) for Sweden.

[118] See Berg and Lien (2002), Black et al. (2003), Blandford (2003), Rothblum, Balsam and Mickey (2004), Carpenter (2005, 2007), Zavodny (2008), Cushing-Daniels and Yeung (2009), Martell (2013a, 2013b) for the US; Carpenter (2008a) for Canada; Sabia and Wooden (2015) for Australia; Aksoy, Carpenter and Frank (2016) for the UK.

conditions across the life course, sexual minorities may decide to reveal themselves (or not) particularly along this variable.

194. As already mentioned, Barret and Pollack (2005) and Pathela et al. (2006) provide results consistent with this intuition. This is also the case of the Pew Research Center (2013). According to this survey, gay men and lesbians with a college degree report the lowest experience of discrimination: they are among the most likely to say there is a lot of acceptance of the LGBT population in the city or town where they live (among college graduates, 48% say there is a lot of acceptance, as opposed to only 29% among those without a college degree). Concomitantly, among all LGBT adults, those with a college degree are more likely than those who have not graduated from college to say all or most of the important people in their life know they are lesbian, gay, bisexual or transgender (64% *versus* 49%).

195. The inconsistent results regarding the educational attainment of bisexuals, whereby young bisexuals fare worse (Carpenter (2008b)) while older bisexuals fare better (Aksoy, Carpenter and Frank (2016)) compared to their heterosexual counterparts, are also in line with the existence of a social desirability bias. Social desirability indeed increases with age (Soubelet and Salthouse (2011)).

### *5.2.2. Transgender and intersex students*

196. Carpenter, Eppink et Gonzales (2016) provide the first population-based evidence on the educational attainment of transgender people. Relying on the 2014 and 2015 US Behavioral Risk Factor Surveillance System (BRFSS) data, they show that transgender adults report lower average education levels than do their cisgender counterparts. In particular, the probability for transgender people to hold a college degree or more is only half that of their cisgender counterparts (14% *vs* 28%).

197. Concerning intersex people, Jones et al. (2016) document a higher educational attainment among their sample of 272 Australian adults with atypical sex characteristics than among the general Australian population. However, this outcome masks a more complex reality: if intersex people are more likely to hold a post-secondary education (62% vs 54%), their probability of not completing secondary school is also higher. More precisely, while only 2% of the general public in Australia fail to complete secondary school, this proportion reaches 18% among intersex people. As surmised in Section 4.1, many of them leave school during years associated with pubertal development.

198. Overall, the reported evidence suggests that stigmatization of sexual and gender minorities at school constitutes an important barrier to their educational attainment and, hence, future economic outcomes. Relying on the 2008 Greek Behavioural Study, Drydakis (2014a) shows that individuals (homosexuals in particular) who retrospectively report higher levels of bullying at school display lower employment rates and lower hourly wages.

## 5.3. Economic outcomes

199. Holding their educational attainment constant, are LGBTI as likely to thrive economically as others? This section addresses this issue by analyzing their performance in the labour market as well as poverty levels.

### *5.3.1. Performance in the labour market*

200. Based on a systematic review of survey-based and experimental evidence, the paragraphs below test for the existence of hiring and wage discrimination against LGBTI.

*Employment status and labour supply: Evidence of hiring discrimination?*

Observational data

201. To date, no paper has examined differences in educational attainment between sexual and gender minorities and the rest of the population, beyond bivariate analysis based on observational data. Similarly, very few papers have performed a multivariate analysis to study the difference in employment status and labour supply that might exist across these populations.

- Gay men and lesbians

202. Tebaldi and Elmslie (2006) are the first to measure the correlation between sexual orientation and labour supply. They rely on the 2001 US Current Population Survey (CPS) which allows distinguishing between individuals living in same-sex *versus* opposite-sex couples (see Table A1 in the Appendix for an overview of the five studies that investigate the employment and/or labour supply gap with couples-based data).

203. Tebaldi and Elmslie (2006) show that, compared to heterosexual men, gay men (i) are less[119] likely to be employed; (ii) are more likely to work part-time and less likely to work full-time; (iii) work fewer hours per week. By contrast, compared to heterosexual women, lesbians (i) are more likely to be employed; (ii) are less likely to work part-time and more likely to work full-time; (iii) work more hours per week.

204. Using the 2000 US Census, Leppel (2009) and Antecol and Steinberger (2013) find similar results concerning the employment status and labour supply respectively of partnered gay men and/or lesbians and their heterosexual counterparts. Compared to married heterosexuals, the employment probability varies from 1% less (not statistically significant) to 5% less for partnered gay men in Tebaldi and Elmslie (2006) and Leppel (2009) respectively, and from 4% more (Leppel (2009)) to 13% (Tebaldi and Elmslie (2006)) and 14% more (Antecol and Steinberger (2013)) for partnered lesbians. Moreover Tebaldi and Elmslie (2006) show that the number of hours worked per week is 8% lower for partnered gay men while it is 7% higher for partnered lesbians (a result consistent with Antecol and Steinberger (2013) who document a number of hours worked per year that is 29% higher for partnered lesbians).[120]

119 This difference for men is not statistically significant at conventional levels.

120 These estimates must be confronted with caution however, given that the groups compared and the set of controls greatly vary from study to study. Tebaldi and Elmslie (2006) focus on individuals with no children under 15 and who did not experience unemployment in the past. They control, besides, for education, work experience, race, non wage income and net household income (household income less individual's personal income). Leppel (2009) concentrates on Caucasian, non-Hispanic, 40-year-old individuals with no children under 5. They have $5,000 in non-wage income, a partner with total income of $35,000, a service occupation and no disability. Additionally, they live in a metropolitan area in a Southern state without a law prohibiting employment discrimination on the basis of sexual orientation. Finally, the reported results from Antecol and Steinberger (2013) stem from restricting the sample to women who are non-Hispanic White and who have a non-Hispanic White partner, and from controlling for the following variables: education, age, presence of children in the household, respondent's and partner's hourly wage, non wage income, urban/rural status and regional fixed effects.

205. More recently, relying on Swedish data, Hammarstedt, Ahmed and Andersson (2015) documented a 7% employment penalty for partnered gay men and a 1% employment premium for partnered lesbians. Moreover, based on the aggregation of 14 rounds of the French Labour Force Survey, from 1996 to 2009, Laurent and Mihoubi (2016b) measure a probability of employment that is 1.5% lower for partnered gay men as compared to their heterosexual counterparts, a penalty that is concentrated on younger individuals. This finding might be due to a greater tendency of young generations to disclose their sexual and gender minority status. As an illustration, younger cohorts are more likely to self-identify as LGB (see Figure 2.4). Moreover, Gallup reports that the increase in LGBT identification in the US between 2012 and 2016 is more pronounced among younger than older cohorts.[121]

206. However, the results summarized in Table A1 likely suffer from the household specialization bias described above. In heterosexual households, men are indeed typically more engaged in market activities than are women. Therefore, the average partnered heterosexual man should be more involved in the labour market than the average partnered gay man, while the average partnered heterosexual woman should be less involved in this market than the average partnered lesbian. The fact, also revealed by Table A1, that partnered gay men and lesbians show labour market outcomes that are overall closer to the outcomes of unmarried rather than married partnered heterosexuals constitutes another indication that the household specialization bias is at work. As stressed by Jaspers and Verbakel (2013), "the marriage contract implies more financial security for a financially dependent spouse, which makes specialization a less risky and thus more 'affordable' option."

207. To avoid this bias, one should rely on individuals-based data in order to compare the labour market outcomes of *non-partnered* homosexual and heterosexual individuals. Aksoy, Carpenter and Frank (2016) are the first to implement this strategy (see Table A2 in the Appendix for an overview of the four studies that investigate the employment and/or labour supply gap with individuals-based data).[122]

208. The results of Aksoy, Carpenter and Frank (2016) on partnered individuals are broadly in line with those of previous research. Controlling for standard demographic characteristics (age, education, race, the presence of children in the household and location), they find that partnered gay men are 7% less likely, while partnered lesbians are 27% more likely to be full-time workers as compared to their partnered heterosexual counterparts. However, consistent with the fact that the household specialization bias underestimates the disadvantage suffered by lesbians, the lesbian premium becomes a lesbian penalty when the authors focus on non-partnered individuals, with single lesbians showing a 9% *lower* probability of full-time employment as compared to their heterosexual counterparts. Additionally, in line with the fact that the household specialization bias overestimates the disadvantage suffered by gay men, the penalty of male homosexuals diminishes when they are single: they are only 1% less likely to be full-time workers as compared to their single

121 See http://www.gallup.com/poll/201731/lgbt-identification-rises.aspx?g_source=Social%20Issues&g_medium=newsfeed&g_campaign=tiles (last accessed on January 25, 2017).

122 These authors use confidential versions of the 2012-2014 UK Integrated Household Surveys (IHS) to which high-quality labour market data from the country's Annual Population Survey have been linked. This approach allows them to rely on a much larger sample of sexual minority individuals than do the bulk of previous studies using individuals-based data (see Tables A2). More precisely, this sample is composed of more than 2,500 individuals with the following breakdown: 1,220 gay men, 839 lesbians, 176 male bisexuals and 429 female bisexuals.

heterosexual counterparts. It is important to note that, contrary to the previous figures, this last estimate is not statistically different from zero.

209. Overall, after solving the household specialization bias, Aksoy, Carpenter and Frank (2016) document a penalty for lesbians with respect to employment status and labour supply, but not for gay men. This does not mean, however, that gay men are not discriminated against in the labour market. The lack of a statistically significant difference between gay and heterosexual men may be due to an omitted variables problem, as well as to a stronger non-disclosure and/or social desirability bias among gay men as compared to lesbians.[123] In any event, Aksoy, Carpenter and Frank (2016)'s approach should be replicated to other samples and countries in order to increase the external validity of their results (i.e. the possibility to generalize them).

- Bisexuals

210. Studies that analyse the employment probability of bisexuals and heterosexuals point to a penalty for bisexuals that is greater for women (see Table A3 in the Appendix). Female bisexuals suffer an average employment penalty of 11%, against 5% for male bisexuals. As for labour supply, Sabia and Wooden (2015) investigate the gap in the number of hours worked per week between bisexuals and heterosexuals, based on Australian data. They find this differential to not be statistically different from zero.

211. Interestingly, Aksoy, Carpenter and Frank (2016) are the first to run a separate analysis for partnered and non-partnered bisexuals and heterosexuals. They find that the difference in the full-time employment probability of bisexuals and heterosexuals is negative but not statistically significant when they are partnered (-3% among men and -2.5% among women). This result may be due to a large majority of partnered bisexuals having a partner of the opposite sex (for instance, this fraction amount to 80% in the US according to the Pew Research Centre (2013)). Put differently, partnered bisexuals may be "masked" (i.e. perceived as heterosexuals). Staying "in the closet" is however more difficult for single bisexuals. Consistent with this intuition, Aksoy, Carpenter and Frank (2016) show that single male and female bisexuals are 13% and 26% less likely respectively to be full-time workers than their heterosexual counterparts (results statistically significant at the 99% confidence level). Yet, these findings must be taken with caution, due to the small sample size of partnered and non-partnered bisexuals (N=176 for male bisexuals and N=429 for female bisexuals).

- Transgender people

212. Carpenter, Eppink and Gonzales (2016) provide the first population-based multivariate comparison of cisgender and transgender employment probability (their sample of transgender people encompasses 1,005 individuals). Their results show that transgender respondents are 9% less likely to be employed than similarly situated individuals who do not identify as transgender, a result driven by transwomen who suffer a 24% penalty relative to cisgender women (see Table A4 in the Appendix).[124]

[123] Consistent with the surmise that gay men may be more prone to the non-disclosure bias than lesbians (maybe because they face more hostility on a daily basis), Gallup reports that the increase in LGBT identification in the US between 2012 and 2016 are more pronounced for women than for men. See http://www.gallup.com/poll/201731/lgbt-identification-rises.aspx?g_source=Social%20Issues&g_medium=newsfeed&g_campaign=tiles (last accessed on January 25, 2017).

[124] See also the US National Center for Transgender Equality (2016) for survey-based evidence that the unemployment rate among transgender respondents (15%) is three times higher than the unemployment rate in the US population (5%).

- Intersex people

213. Jones et al. (2016) stress that 12% of their Australian convenience sample report being unemployed (i.e. not currently working and looking for work). This is twice as high as Australia's unemployment rate that same year.[125]

214. Overall, survey-based evidence reveals that LGBTI are penalized with respect to employment, with the exception of transmen (see Table 5.2). Yet, this penalty likely constitutes an underestimate of the actual hiring discrimination that LGBTI job seekers face, not only due to the non-disclosure and social desirability bias, but also because LGBTI are known to shy away from occupations with the strongest hostility against sexual and gender minorities. As an illustration, relying on the Australian Twin Registers which allows controling for unobserved inherited factors (on top of observed non-inherited characteristics), Plug, Webbink and Martin (2014) show that gay men and lesbians avoid applying for jobs in occupations where they are the most likely to be discriminated against (i.e. male-dominated occuptions for gay men and female-dominated occupations for lesbians).

**Table 5.2. Employment gap between LGBTI and non-LGBTI, relying on population-based survey data**

| | Gay men | Lesbians | Male bisexuals | Female bisexuals | Transmen | Transwomen | Intersex individuals |
|---|---|---|---|---|---|---|---|
| Number of studies | 8 | 8 | 3 | 3 | 1 | 1 | 0 |
| *After solving the household specialization bias* | *1* | *1* | | | | | |
| Countries | Australia, Canada, France, Sweden, UK and US | Australia, Canada, Sweden, UK and US | Australia, UK and US | Australia, UK and US | US | US | NA |
| *After solving the household specialization bias* | *UK* | *UK* | | | | | |
| Average estimates | -3.5% | +8% | -5% | -11% | +4% | -24% | NA |
| *After solving the household specialization bias* | *-1%* | *-9%* | | | | | |

*Source*: Tables A1 to A4 in the Appendix.

215. A way to provide better evidence of hiring discrimination against sexual minorities and gender minorities based on observational data may consist in studying the relationship between acceptance of these minorities and the LGBTI/non-LGBTI employment gap.

216. Hammarstedt, Ahmed and Andersson (2015) implement such a strategy in Sweden. Although they rely on couples-based data, they find that *both* gay men and lesbians show lower employment rates in regions with more hostile attitudes toward homosexuals. This detrimental effect is particularly high for gay men: a 1 percentage-

[125] See: http://www.abs.gov.au/ausstats/abs@.nsf/Previousproducts/6202.0Main%20Features2Aug%202015?opendocument&tabname=Summary&prodno=6202.0&issue=Aug%202015&num=&view= (last accessed on March 15, 2017).

point increase in the share of individuals with a negative attitude toward homosexuals increases the employment gap between gay men and heterosexual men by about 0.7 percentage points.

217. However, these results do not necessarily reflect anti-LGBTI discrimination. They may also derive from self-selection in geographic mobility, whereby the most productive LGBTI individuals move out of areas showing a high degree of homophobia. Moreover, this approach may even fail to detect a positive correlation between the LGBTI penalty and local hostility toward sexual and gender minorities. Indeed, anti-LGBTI discrimination should be higher (resp. lower) in regions or countries that show a higher (resp. lower) degree of homophobia or transphobia. But so should be the social desirability bias, whereby only the most successful LGBTI people reveal their sexual and gender identities to the interviewer. Put differently, local homophobia and transphobia likely induce two consequences whose effects on the "LGBTI-non LGBTI" gap run in opposite direction (and may compensate each other). As an illustration, relying on the EU-LFS, one does not observe a lower employment gap between partnered gay men and partnered heterosexual men in European countries that show greater acceptance of homosexuality (author's calculation).

218. The limitations inherent to observational data should encourage scholars to rely on field experiments in order to measure hiring discrimination against sexual and gender minorities in a more compelling manner. These experiments are reviewed in the next section.

## Experimental data

219. To date, 13 correspondence studies have been conducted in order to measure hiring discrimination against gay men and lesbians. Only one correspondence study tests for hiring discrimination against transgender (female) applicants (see Tables A5 and A6 in the Appendix). These studies cover ten countries (Austria, Belgium, Canada, Cyprus, Germany, Greece, Italy, Sweden, the UK and the US) and, with the exception of Adam (1981), Weichselbaumer (2003) and Tilcsik (2011), have been conducted within the last decade.

220. Correspondence studies that aim to test discrimination based on sexual orientation usually signal homosexuality through the volunteer engagement of the applicant in a gay and/or lesbian organization (e.g. local Gay People's Alliance or gay and lesbian campus association).[126] By contrast, for the "heterosexual" applicant, a control organization is chosen that does not give any evidence of being gay or lesbian.[127] Obviously, this way of signalling same-sex sexual orientation is not without flaws. It may indeed confound homosexuality with political activism. To circumvent this problem, several studies emphasize the managerial or financial tasks the homosexual applicant performs in the gay/lesbian organization (Weichselbaumer (2003, 2015), Tilcsik (2011), Bailey, Wallace and Wright (2013), Pattachini, Ragusa

[126] In addition to this signal, Ahmed, Andersson and Hammarstedt (2013b) also stress the sex of the candidate's partner. More precisely, they add a paragraph in the application letter saying "In my spare time, I enjoy spending time with my wife/husband" where the partner is of the same (opposite) sex for homosexual (heterosexual) applicants. Baert (2014) conveys candidates' sexual orientation only through their partner's sex, an information that appears on top of their CV (e.g. "Married to Julie Van Damme" for the lesbian candidate).

[127] It is important to underline that the first correspondence test on sexual orientation discrimination does not include a control organization for the heterosexual applicant (see Adam (1981)).

and Zenou (2015), Drydakis (2016)). Some studies also choose a gay/lesbian organization with no affinities to any political party (Weichselbaumer (2003)), or juxtapose a left-wing gay/lesbian organization in the homosexual application with a left-leaning political organization in the heterosexual application (Tilcsik (2011)). Others also stress that the volunteerism in the gay/lesbian and control associations is confined to the past (Drydakis (2009, 2011 and 2014b)).

221. As it is apparent in Table 5.3, the 13 correspondence studies that have tested for hiring discrimination based on sexual orientation typically point to an unfair treatment of the gay male and lesbian applicants: on average, they are 1.8 times less likely to be called back by the recruiter than are their heterosexual counterparts. For gay men, the heterosexual-to-homosexual callback rates ratio varies from 1.1 (Sweden – Ahmed, Andersson and Hammarstedt (2013b) and the UK - Drydakis (2016)) to 3.7 (Cyprus – Drydakis (2014b)) with an average at 1.9. For lesbians, it varies from 0.9 (Belgium – Baert (2014)) to 4.6 (Cyprus – Drydakis (2014b)) with an average at 1.7.[128] Consistent with attitudes toward gay men being more negative than attitudes toward lesbians, homosexual men face slightly stronger hiring discrimination than do homosexual women.

222. The two studies where the difference in callback rates is not statistically significant (and in fact very close to 0) are Bailey, Wallace and Wright (2013) and Acquisiti and Fong (2015) in the US. These papers are distinct from the other studies in ways that could explain their null results.

223. Bailey, Wallace and Wright (2013) rely on an Internet job search site (CareerBuilder.com) that is mainly used by large national employers. Yet, these recruiters often rely on secondary hiring personnel trained to not discriminate during the CV screening phase. It is however plausible that discrimination still occurs later in the recruitment process (at the interview stage) for these types of employers. Moreover, contrary to other studies, the candidates (who hold a college degree) do not apply to positions that match their qualifications but to jobs that require a college education or lower (not even post-secondary) educational credentials. In this context, and as noted by the authors, "it is possible that (…) the qualifications of [the] characters [were made] too strong. Past research in this field has indeed shown that if applicants are too over-qualified or under-qualified, employers are less inclined to discriminate (Heckman (1998)).”[129]

[128] These figures might constitute lower bounds of anti-LGBTI discrimination. Most of the correspondence studies reported in Table A5 indeed send more than one type of similar applicants to the same employer. Yet, as shown by Weichselbaumer (2015), this procedure entails a substantial risk of detection and, hence, of underestimation of sexual orientation discrimination since employers may seek to present themselves as particularly minority friendly when they realize that they are being tested.

[129] Consistent with this intuition, Table A5 reveals that the heterosexual-to-homosexual ratio of callback rates is much smaller in correspondence studies that involve high-skilled (1.3) rather than lower-skilled (2.7) applicants.

**Table 5.3. Ratio of the callback rates between heterosexual and homosexual applicants, relying on the 13 correspondence studies that have tested for hiring discrimination based on sexual orientation**

| | Gay men | Lesbians |
|---|---|---|
| Austria | NA | 1.4 |
| Belgium | NA | 0.9 |
| Canada | 1.6 | 2 |
| Cyprus | 3.7 | 4.6 |
| Germany | NA | 1.2 |
| Greece | 2.9 | 2.2 |
| Italy | 1.5 | 1.0 |
| Sweden | 1.1 | 1.2 |
| UK | 1.1 | 1.1 |
| US | 1.2 | 1.0 |
| **Country average** | **1.9** | **1.7** |
| **Number of correspondence studies** | **9** | **10** |

*Source*: Table A5 in the Appendix.

224. Acquisiti and Fong (2015) undertook the only correspondence study that manipulates candidates' sexual orientation through their Facebook profile, by filling out the field "interested in" (either male interested in females or interested in males). In this setting, the number of employers who searched for the candidates' profiles may be too small to elicit anti-gay hiring discrimination (the authors estimate a minimum lower threshold of employers who searched for the profiles at 10%, and the likely proportion at 29%).

225. Tilcsik (2011) and Weichselbaumer (2015) support the surmise that anti-LGBTI discrimination derives at least partly from homophobia and therefore includes a taste-based component. Tilcsik (2011) shows that the intensity of the discrimination faced by gay men and lesbian is positively correlated with negative local attitudes toward homosexuals: while employers in the southern and midwestern states in the sample (Texas, Florida and Ohio) strongly discriminate against sexual minorities, employers in the western and northeastern states (California, New York and Pennsylvania) tend to treat homosexual and heterosexual applicants on an equal basis. Weichselbaumer (2015) performs her correspondence study in two German cities, Munich and Berlin, characterized by opposite value orientations. While the population in Munich displays highly conservative attitudes, that of Berlin is known to support very liberal views. The results reflect this divide: homosexual applicants are discriminated against in Munich but not in Berlin, despite the fact that differences in economic conditions would have predicted the opposite outcome. With a considerably lower unemployment rate, Munich has a tighter labour market than Berlin.[130]

226. Anti-LGBTI discrimination also seems to be of statistical origin. As stressed by Ahmed, Andersson and Hammarstedt (2013b), "stereotypes of gay men being

[130] As explained by Biddle and Hamermesch (2013), a declining ratio of job seekers to vacancies should give employers less scope to indulge discriminatory behaviors. One cost to discriminating indeed consists in the opportunity cost of the longer expected wait until an acceptable worker arrives, and this cost increases with labour market tightness due to the concomitant (i) higher value of output (labour market tightness being typically linked to economic recovery) as well as (ii) lower arrival rate of workers at vacancies. Put differently, discrimination should be more costly in a tighter labor market.

feminine and lesbians being masculine can create problems for gay men and lesbians because of a lack of congruence between their assumed traits, which do not conform to typical gender-role stereotypes, and the presumed requirements of the job. This could be a problem especially when gay men apply for jobs in male-dominated occupations and lesbians apply for jobs in female-dominated occupations." The authors confirm this intuition by showing that gay male applicants are particularly discriminated against in male-dominated occupations, whereas the reverse is true for lesbian applicants. Drydakis (2016) provides a similar result. Moreover, his findings reveal that gay male applicants receive fewer callbacks for vacancies in which masculine personality traits[131] are highlighted in the job opening (i.e. the ideal job applicant is described as "ambitious," "assertive," or "acting as a leader"). Conversely, lesbians receive fewer invitations to interview for vacancies in which feminine personality traits are stressed (i.e. the ideal job applicant is described as "affectionate," "cheerful," or "sensitive to the needs of others").[132]

227. Other sources of statistical discrimination (greater risk of HIV for male homosexuals, and greater risk of emotional distress for both female and male homosexuals due to their minority status) do not seem to be at play. Notably, Drydakis (2014b) shows that stressing the applicant's good physical and mental health (by emphasizing his/her good cognitive skills, previous job responsibilities and strong work commitment)[133] *does not* reduce sexual orientation discrimination (see Pattachini, Ragusa and Zenou (2015) for a similar result).

228. Interestingly, Baert (2014) reports positive discrimination toward married lesbians (as compared to their married heterosexual counterparts), presumably because married lesbians typically show a lower fertility rate and engage in a less traditional division of labour with their partner. More precisely, employers in Belgium favour married lesbians over heterosexual married women when they are young (25), but this premium disappears at older ages (37). Note, however, that this finding should be taken with caution since it is not confirmed either by Ahmed, Andersson and Hammarstedt (2013b) or by Weichselbaumer (2015): in the first study, the callback rate of married heterosexual women is 20% higher than that of married lesbians, while the second study does not document lower levels of discrimination for partnered *versus* single lesbians.

229. No field experiment has thus far tested for discrimination against bisexual and intersex applicants.

131 To distinguish between masculine and feminine personality traits, Drydakis (2016) relies on Bem's (1974, 1981) masculinity-femininity inventory. This inventory provides 60 traits: 20 are classified as masculine (if they are evaluated to be more suitable for men than women in society), 20 as feminine (if they are evaluated to be more suitable for women than men), and 20 as neutral (if they are evaluated to be suitable for both men and women).

132 Note, however, that Weichselbaumer (2003) does not find that masculine lesbians are more discriminated against than feminine lesbians in female-dominated clerical jobs (see Table A5 in the Appendix for a description of the way the feminity or masculinity of the candidates is signaled in their applications).

133 More precisely, the more-informative applicants in Drydakis (2014b) mentioned their high school diplomas grading scale (very good); their first degrees in English grade (A); and their certificates of PC knowledge grade (A). Moreover, the CVs were more informative regarding applicants' previous responsibilities and job tasks. Furthermore, they mentioned some personal characteristics to emphasize their extroversion (sociable, amiable, energetic, enthusiastic) and conscientiousness (efficient, organized, productive). Finally, to enhance applicants' reliability and work commitment, the more-informative applicants attached letters of reference from previous employers stating positive information about the applicants' traits such as affability, capacity for teamwork, efficiency, conscientiousness, responsibility, loyalty to the firm, willingness to exert effort on behalf of the firm, no absenteeism from work and agreeableness.

230. As for transgender applicants, Bardales (2013) is the only correspondence study[134] that investigates whether they are unfairly treated by the recruiters. This experiment focuses on transgender female applicants and conveys their gender identity with the following three pieces of information (combined together in the candidates' CV): (i) the transgender woman reports her preferred name alongside her legal name (e.g. "Anne McCarthy (Legal Name: Greg McCarthy)") while the cisgender woman only mentions her legal name; (ii) the transgender woman stresses her membership in the "Transgender Women's Support Group at UT San Antonio" while the cisgender woman emphasizes her involvement in the "Women's Health Center at UT San Antonio"; (iii) the transgender woman reports to be engaged in "Male-to-Female Youth Peer Counseling" while the cisgender woman underlines her implication in "Young Girls Peer Counseling and Mentorship."

231. This correspondence study reveals strong gender identity discrimination: the callback rate of the cisgender woman is 50% higher than that of the transwoman. However, this experiment relies on a small sample size (only 150 job postings are treated). Moreover, transmen are discarded from the analysis. Further research is therefore needed to better measure hiring discrimination against bisexual, transgender and intersex applicants.

232. Overall, experimental evidence points to a substantial hiring discrimination against sexual and gender minorities. Yet, one must keep in mind at least two limitations of correspondence studies performed in the labour market (Rooth (2014)):

- First, they do not provide a general picture of discrimination: (i) they measure discrimination at one point in time and space; (ii) they focus on firms that rely on special channels (typically want ads in the newspaper or on the Internet) to fill specific positions; (iii) they involve fictitious candidates who apply with CV of specific quality.
- Second, none of the correspondence studies reported in Tables A5 and A6 addresses Heckman and Siegelman (1993)'s critique. According to these authors, the difference in callback rates might not only reflect employers' different preferences (taste-based discrimination) and/or beliefs on the mean of applicants' unobserved productivity (statistical discrimination). This difference may also translate employers' different beliefs on the *variance* of applicants' unobserved productivity as soon as they evaluate applications according to some threshold level of productivity. [135] Taking this critique into account is important for a better understanding of the source(s) of anti-LGBTI discrimination.[136]

134 In 2008, Make the Road New-York, a not-for-profit organization, conducted an audit study to measure possible discrimination against transgender job applicants in Manhattan's retail sector. Out of 24 employers tested, the job offer rate for the cisgender applicant was 50%, as opposed to 8.3% for the transgender applicant. Put differently, the transgender applicant was 6 times less likely than his/her cisgender counterpart to receive a job offer (Make the Road New York (2010)).

135 In this case, the intensity of discrimination at least partly depends on the quality of the CV used in the experiment (relative to the job requirements). If this quality is situated below the threshold above which the recruiter calls back, then the recruiter favors applicants belonging to the group with the largest variance - for the probability that the productive characteristics of the applicant lie above the threshold is stronger within this group. Discrimination against the minority applicants (typically perceived as more "noisy" or risky) is then underestimated. By contrast, if this average quality of the CV exceeds the threshold above which the recruiter calls back, then the recruiter favors applicants belonging to the group with the smallest variance - for the probability that the productive characteristics of the applicant will lie above the threshold is stronger within this group. Discrimination against the minority applicants is then overestimated.

136 Neumark (2012) develops a procedure that allows for disentangling the share of differences in callback rates that is attributable to differences in preferences and/or beliefs on the first moment of unobervables (i.e. average productivity), and the share that is attributable to differences in beliefs on the second moment of unobservables (i.e. variance of productivity). All that is needed is

*Labour earnings: Evidence of wage discrimination?*

Observational data

- Gay men and lesbians

233. Both gay men and lesbians tend to be less satisfied with their jobs than their heterosexual counterparts. As an illustration, relying on the 2008–2010 Athens Area Study (AAS), Drydakis (2015) shows that sexual-minority individuals report lower satisfaction on all four dimensions tested (controlling for important characteristics such as education, occupation or mental health): global satisfaction and satisfaction with (i) total pay, (ii) promotion prospects,[137] and (iii) respect received from one's supervisor (for similar findings, see also Carpenter (2008b) in Australia, Leppel (2014) in Canada, Leppel and Clain (2015) in the US and Drydakis (2014c) for a review).

234. However, multivariate analyses[138] of individual labour earnings[139] with couples-based survey data do not provide results consistent with lower job satisfaction among *both* gay men and lesbians. These analyses, which amount to 18 studies (26 estimates for gay men and 30 estimates for lesbians), are summarized in Table A7 of the Appendix. They reveal an earnings penalty for partnered gay men but an earnings premium (or no effect) for partnered lesbians. As shown in Table 5.4, this pattern is observed irrespective of the country where, or the time when the data used in these studies were collected. More precisely, partnered gay men suffer an average penalty of 8% while partnered lesbians enjoy an average premium of 7%.

variation in the observed productive characteristics of the applicants that affect the probability of being called back (see Carlsson, Fumarco and Rooth (2014) for an application of Neumark's method). Yet, this identification procedure rests on debatable assumptions. Notably, the impact of candidates' observed productive characteristics on employers' perception of their productivity should not vary with applicants' group membership.

137 Consistent with this finding, Frank (2006) provides suggestive evidence that gay/bisexual men holding an academic position in British universities suffer from glass ceilings comparable to those faced by heterosexual women.

138 Irrespective of whether they rely on couples-based (Table 5.4) or on individuals-based (Table 5.5) data, these analyses typically control for the following variables: age, education, race/ethnicity, the presence of kids in the household, the number of hours worked (whenever the dependent variable does not measure *hourly* individual earnings), occupation and/or industry, as well as location. Controlling for the number of hours worked is particularly important when one compares partnered homosexuals and heterosexuals because, otherwise, the gay man penalty and the lesbian premium are overestimated, as shown by Ahmed, Andersson and Hammarstedt (2013a) based on Swedish data. Indeed, the labour supply of partnered gay men is known to be lower, while the labour supply of partnered lesbians is known to be higher than that of their homosexual counterparts.

139 Comparing *individual labour earnings* between homosexual and heterosexual workers potentially involves an additional bias, on top of the standard omitted variables, non-disclosure, household specialization and social desirability biases already mentioned. This bias comes from the fact that labour earnings are observed among a very specific sample of individuals (those who are employed). This selection effect might lead researchers to observe only those among gay men and lesbians who show unobserved characteristics productive enough to overcome hiring discrimination and, hence, to *underestimate* the labour earnings penalty faced by homosexual workers. Consistent with this intuition, Klawitter (2015) shows that the studies that seek to correct for this sample selection bias (with Heckman selection models) typically report a greater penalty for these workers. However, this result must be taken with caution given the difficulty to fully correct for the selection bias. The Heckman procedure indeed necessitates finding at least one variable that determines individuals' decision to participate in the labour force but *not* their labour earnings, a virtual impossibility. The difficulty to fulfil this condition explains why only few studies have tried to correct for the sample selection bias (e.g. Badgett (1995)).

**Table 5.4. Breakdown of studies using couples-based data to test for an individual earnings gap between partnered homosexuals and partnered heterosexuals as of 2016, by country, time period and marital status of partnered heterosexuals**

| | Partnered gay men | Partnered lesbians |
|---|---|---|
| **Mean estimates (18 studies: 26 estimates for gay men and 30 estimates for lesbians)** | -8% | +7% |
| **Country** | | |
| Canada (1 study) | -5% | +8% |
| France (1 study) | -6% | +1% |
| Germany (1 study) | -3% | +9% |
| Sweden (4 studies) | -12% | +3% |
| UK (1 study) | -5% | +9% |
| US (10 studies) | -9% | +8% |
| **Time period** | | |
| 1990-1999 (4 studies) | -8% | +12% |
| 2000-2009 (14 studies) | -8% | +6.5% |
| *2000-2004 (9 studies)* | *-9%* | *+7%* |
| *2005-2009 (5 studies)* | *-7%* | *+6%* |
| **Marital status of partnered heterosexuals** | | |
| Married (13 estimates for gay men, 13 estimates for lesbians) | -14% | +8% |
| Both married and unmarried (5 estimates for gay men, 5 estimates for lesbians) | -5% | +7% |
| Unmarried (8 estimates for gay men, 12 estimates for lesbians) | -1% | +6% |

*Source*: Table A7 in the Appendix.

235. Again, these results may be in large part driven by the household specialization bias (Ozeren (2014)).[140] As an illustration, based on the 2000 US Census, Daneshvary, Waddoups, and Wimmer (2009) study the impact of previous marriage on the lesbian wage premium. They find that this premium is much lower when partnered lesbians report a previous marriage with a man, rather than no such union: expectations about future household roles may have undermined investment in market-oriented characteristics for previously married lesbians relative to those who presumably expected to be with female partners in the future. Table 5.4 further illustrates the household specialization bias: the individual earnings penalty for gay men and premium for lesbians (i) reach their maximum when partnered homosexuals are compared to married partnered heterosexuals; (ii) show intermediate levels when the sample of partnered heterosexuals is composed of both married and unmarried individuals; and (iii) are at their minimum when partnered homosexuals are compared to unmarried partnered heterosexuals.

140 In theory, these results may also derive from occupational sorting. Gay men and lesbians indeed choose gender-atypical occupations (Black, Sanders and Taylor (2007) and Ueno, Roach and Pena-Talamantes (2013)) in which they are less discriminated against (Plug, Webbink and Martin (2014)). In this context, gay men are overrepresented in female-dominated occupations characterized by lower wages, while lesbians are overrepresented in male-dominated occupations characterized by higher wages. As an illustration, Elmslie and Tebaldi (2007) show that gay men's wage penalty is particularly strong in male-dominated occupations: building and grounds cleaning and maintenance, construction and extraction, management, production, as well as transportation and material moving. Also consistent with occupational sorting, Ahmed, Andersson and Hammarstedt (2011b) find that homosexual men have a lower probability of working in a management profession than heterosexual men. By contrast, homosexual women are more likely than heterosexual women to work in such professions. (Results obtained from Swedish couples-based data.) Yet, occupational sorting is unlikely to bias the estimates provided in Tables 5.4 and 5.5 since, as already stressed, most of the studies they refer to control for occupation and/or industry.

236. It is worthwhile noting that the pervasiveness of the household specialization bias in Table 5.4 might explain the slight decrease of the earnings penalty for gay men and of the earnings premium for lesbians over the time (a trend also identified by Cushing-Daniels and Yeung (2009) in the US and Klawitter (2015) in her meta-analysis). This finding might be driven by the convergence in specialization between homosexual and heterosexual households documented by Giddings et al. (2014), based on US data.

237. To overcome the household specialization bias, one should rely on individuals-based data. These data indeed allow controlling for individuals' partnership status. They even permit researchers to focus on *non-partnered* individuals only, which turns out being the best strategy to counter this bias. Indeed, as already stressed, the partnership status effect differs across homosexuals and heterosexuals, with household specialization being stronger in opposite-sex than in same-sex couples. In this setting, simply controlling for the partnership status may not be enough to mitigate the household specialization bias.

238. Table 5.5 reports the mean individual earnings gap between homosexuals and heterosexuals, based on the 20 studies which have so far relied on individuals-based survey data (see Table A8 of the Appendix for a summary of these studies).

239. Contrary to expectations, the mean estimates calculated over these studies do *not* point to a lower penalty for gay men and to a lower premium for lesbians (as compared to the information reported in Table 5.4). This is probably because only a minority of these papers (8 out of 20) control for individuals' partnership status and/or perform the analysis on non-partnered gay men and lesbians.

240. But these studies suffer from a more serious problem. As already stressed, no census includes direct questions on sexual orientation thus far. Therefore, these studies are based on rather small samples. Contrary to the those using couples-based data (which nearly all satisfy the roughly "N=650 gay men (or lesbians)" condition to be able to measure a 8% gap), only two of the 20 studies using individuals-based data fulfill this requirement: Carpenter (2008a) for Canada (1,017 gay men and 657 lesbians) and Aksoy, Carpenter and Frank (2016) for the UK (1,220 gay men and 839 lesbians). The remaining 18 studies rely, on average, on only 134 gay men and 95 lesbians. These sample sizes are much too small to allow being confident about the magnitude of the estimated earnings gap.

**Table 5.5. General summary of studies using individuals-based data to test for an individual earnings gap between homosexuals and heterosexuals, as of 2016**

| | Gay men | Lesbians |
|---|---|---|
| All studies (20 studies: 39 estimates for gay men and 25 estimates for lesbians) | **-12%** | **+7%** |
| Only studies with at least 650 observations for gay men and 650 observations for lesbians (2 studies: 6 estimates for gay men and 6 estimates for lesbians) | **-8%** | **+16%** |
| *Only partnered individuals (2 estimates for gay men and 2 estimates for lesbians)* | *-12%* | *+33%* |
| *Both partnered and non-partnered individuals, controlling for their partnership status (2 estimates for gay men and 2 estimates for lesbians)* | *-7.5%* | *+15.5%* |
| *Only non-partnered individuals (2 estimates for gay men and 2 estimates for lesbians)* | *-5.5%* | *0%* |

*Source*: Table A8 in the Appendix.

241. Focusing on the two trustworthiest studies using individuals-based data (Carpenter (2008a) and Aksoy, Carpenter and Frank (2016)) confirms the pervasiveness of the household specialization bias and demonstrates the capacity of an approach that focuses on non-partnered individuals to solve it.

242. As shown in Table 5.5, the gay man penalty and lesbian premium are at their maximum among partnered individuals, decrease in an analysis that combines both partnered and non-partnered individuals but controls for their partnership status, and are at their minimum among non-partnered individuals. In this case, the results point to a 5.5% earnings penalty for single gay men (not statistically significant) and to no earnings gap between single lesbians and single heterosexual women. Put differently, the most compelling studies that rely on individuals-based data do not support that gay men and lesbians suffer an individual earnings penalty once the household specialization bias is solved. But this does not mean that homosexual workers do not face substantial hurdles. Indeed, although the household specialization bias is solved, many other biases inherent to observational data remain, which by and large run against finding an LGBTI penalty (see Section 4.2).

243. It is important to stress that combining the information of Tables 5.4 and 5.5 yields an average individual earnings penalty for gay men equal to 10% and an average individual earnings premium for lesbians equal to 7%. These estimates slightly differ from those found by Klawitter (2015) in her meta-analysis of 31 studies on sexual orientation and labour earnings: this author documents an individual earnings penalty of 11% for gay men and an individual earnings premium of 9% for lesbians. Two reasons can account for this difference. First, the "meta-analysis" reported in Tables 5.4 and 5.5 relies on eight more studies,[141] but it discards Carpenter (2004) (included by Klawitter (2015)), given that this study focuses on household, not individual earnings. Second, Klawitter (2015) does not exploit all the estimates reported in the 31 studies she reviews. Her meta-analysis relies on 34 estimates for men and 29 estimates for women, as opposed to 65 estimates for men and 55 estimates for women in Tables 5.4 and 5.5.

244. It is also worth emphasizing that the earnings penalty for gay men seems to be lower in the public than in the private sector (see Klawitter (2011) in the US and Waite and Denier (2015) in Canada). This result might reflect that, contrary to the private sector where promotions and rewards are mainly at the discretion of bosses who may be biased in assessing the productivity of an employee, the public sector heavily relies on centralized wage determination practices. This finding may also be due to more firmly entrenched equity legislation in terms of hiring and promotion in the public sector. As an illustration, Ahmed, Andersson and Hammarstedt (2013b) find that hiring discrimination in Sweden against gay and lesbian fictive applicants is concentrated in the private sector.

245. As for the correlation between working in the public (or private) sector and the earnings premium for lesbians, different forces may be at work. Lower wage discrimination against sexual minorities in the public sector might lead to an increase in the lesbian premium (in case lesbians face a negative wage discrimination in the private sector), or to a decrease in this premium (in case lesbians face a positive wage

[141] Humpert (2012), Ahmed, Andersson and Hammarstedt (2013a), Hammarstedt, Ahmed and Anderssson (2015) and Waite and Denier (2015) for studies using couples-based data; Sabia (2014), Sabia and Wooden (2015), Aksoy, Carpenter and Frank (2016) and Bryson (2016) for studies using individuals-based data.

discrimination in the private sector). Moreover, a lower gender pay gap in the public sector should contribute to reducing this premium. Klawitter (2011) and Waite and Denier (2015) document a lower lesbian premium in the public as compared to the private sector.

- Bisexuals

246. Surprisingly, results regarding the individual earnings gap between bisexuals and heterosexuals are the opposite of those found regarding their employment probability (see Table A9 in the Appendix for a summary of the eleven studies using individuals-based data to test for this earnings gap). They point to a penalty for bisexuals that is, this time, greater for men: male bisexuals suffer an average earnings penalty of 12%, against 1% for female bisexuals.

247. Running a separate analysis for partnered and non-partnered bisexuals and heterosexuals, as Aksoy, Carpenter and Frank (2016) do, also yields inconsistent results. While the employment penalty is driven by non-partnered bisexuals (supposed to be less masked than partnered bisexuals), the earnings penalty, when it exists, is driven by partnered bisexuals. The earnings of partnered male bisexuals are 22% lower than those of their heterosexual counterparts (no statistically significant difference between single male bisexuals and heterosexuals). As for women, the authors find no statistically significant difference between partnered female bisexuals and heterosexuals, but they identify a 16% individual earnings premium for single female bisexuals (compared to their heterosexual counterparts).

248. Further research is therefore needed to illuminate the discrepancies in the pattern of the bisexual-heterosexual gap, depending on whether one focuses on employment status, or on individual earnings. In this regard, a cross-country survey devoted to measuring the stereotypes attached to sexual and gender minorities in the workplace (based on interviews among employers, workers and LGBT themselves) could be very helpful.

- Transgender people

249. Due to the scarcity of large population-based surveys that include direct measures of gender identity, no study has analysed so far the gap in *individual* earnings between transgender and cisgender people. However, it is worth mentioning two studies that focus on the relationship between gender transition and individual earnings.

250. Relying on worker fixed effects, Schilt and Wiswall (2008) investigate the labour earnings of transsexuals before and after their gender transitions in the US. The authors find that individuals who transition from male to female experience a large earnings decline (of the order of 30%), while individuals who transition from female to male experience a non-significant earnings increase. However, their results rely on a small and selective sample of transgender workers: constructed based on three different transgender conferences and a transgender website, it consists of only 18 transsexual workers who change from male-to-female and 25 transsexual workers who change from female-to-male.

251. Geijtenbeek and Plug (2015) apply the same worker fixed-effects approach, but use a much larger administrative dataset from the Netherlands. With information on transsexual individuals and the year of their administrative gender change available from 2006 onwards, this dataset contains 502 transsexuals, of which 344 changed

from male to female and 158 from female to male. In addition, the authors draw a 1% sample of all other individuals (N=98,821). The authors find that hourly earnings fall by about 12% for biological men who become women, against no change in hourly earnings among biological women who become men. Put differently, this finding reveals a "traditional" gender gap of about 6%, while transsexuals experience an earnings loss of 6% after their gender transition: the transition penalty offsets the earnings gain of women who become men but amplifies the earnings loss of men who become women.

- Intersex people

252. Individual earnings among the Australian convenience sample of intersex adults interviewed by Jones et al. (2016) are very modest: their median value is twice as low as among the general Australian population.

## Experimental data

253. Identifying an individual earnings penalty for sexual and gender minorities with observational data is a challenge, due to the scarcity of nationwide population-based surveys that include direct questions on sexual and gender minority status, as well to a wide range of biases inherent to survey-based information. By contrast, experimental data would allow both for testing for a LGBTI penalty and identifying its cause. However, producing such data with real subjects is *not* an option.

254. One could nevertheless provide suggestive experimental evidence on anti-LGBTI wage discrimination, by organizing follow-ups of correspondence studies. Such a strategy has only been implemented by Drydakis (2009, 2011 and 2014b) thus far. More precisely, this author trains two auditors playing the role of the homosexual and heterosexual fictive applicants respectively to ask in a similar fashion informal questions regarding monthly wage offers, whenever the employer calls these candidates to invite them to a job interview.

255. Drydakis (2009) and Drydakis (2011) measure a wage penalty in Athens, especially for female homosexual applicants: the monthly wage offer is lower by 1.6% for gay men (not statistically significant) and by 6.1% for lesbians. Drydakis (2014b) also reports substantial wage discrimination against homosexual applicants in Cyprus: the monthly wage offer is lower by 10% for gay men and by 6% for lesbians. It is worthwhile noting that Drydakis (2016) also provides evidence of wage discrimination in the UK, although its extent is lower than in Greece or in Cyprus, potentially because the UK-based correspondence study focuses on high-skilled rather than lower skilled candidates: the sexual-orientation salary difference disadvantages gay men by 2% and lesbians by 1.4%. These findings must be taken with caution however. Drydakis (2016) indeed does not rely on fictitious but on *real* applicants (young men and women who have just graduated from university). Therefore, although the difference in callback rates is measured between homosexual and heterosexual job seekers who sent *similar* applications, these subjects were not trained to act alike at the job interview, since their objective, as *real* job seekers, is to get hired, not to have an audit study succeed. It is therefore possible that the wage difference between the homosexual and heterosexual applicants reflects differences in unobservable characteristics detected by the recruiter during the job interview, rather than discrimination.



For Official Use

256. While observational data generate inconclusive results, Drydakis' experimental approach provides compelling evidence that *both* gay men and lesbians suffer wage discrimination. It would be enlightening to extend Drydakis' approach to other countries, in the context of correspondence studies that involve not only fictitious gay men and lesbians, but also fictitious bisexual, transgender and intersex people.

257. One should keep in mind, however, that this experimental set-up is only informative about differences in wages offered by the recruiter *before* the job interview. It remains silent about a potential wage discrimination against LGBTI at the hiring stage, as well as during their stay in the firm.

### *5.3.2. Living conditions/Poverty*

258. Survey-based evidence on the living conditions of gay men and lesbians remains inconclusive, in particular due to a wide range of biases specific to this group. But it suggests a disadvantage for gay men and lesbians when these biases are at least partly addressed. Evidence on the living conditions of bisexuals, transgender and intersex people reveal a more clear-cut penalty, although this conclusion is only tentative: studies that focus on poverty rates among these subpopulations are still scarce and, in the case of intersex people, lack representativeness.

#### *Gay men and lesbians*

259. Evidence on the living conditions of homosexuals is ambiguous: individual-based results suffer from the household specialization bias, while household-based findings are plagued by a gender wage differential bias. To solve these estimation problems, one should compare single homosexuals with single heterosexuals. But this strategy has only rarely been implemented to date. More research is also needed to identify the mechanisms through which sexual orientation discrimination affects the living conditions of gay men and lesbians.

#### Individual-based results on the living conditions of gay men and lesbians

260. On average, couples- and individuals-based data show that gay men are at an individual earnings disadvantage compared with heterosexual men, while lesbians earn more than heterosexual women, in large part due to the household specialization bias. It is therefore not surprising that Uhrig (2015) finds a greater incidence of poverty among men who self-identify as gay but a lower incidence of poverty among women who self-identify as lesbian, based on the 2011-2012 wave of the UK Household Longitudinal Study (UKHLS).

261. More precisely, gay men are significantly more likely to receive certain state benefits: Income Support or Housing Benefit compared to heterosexual men. Were it not for state income transfers, gay men who already show higher poverty rates[142] (although the difference is not statistically significant) might well appear as being at a significantly greater risk of poverty than heterosexual men. By contrast, lesbians are materially advantaged compared to heterosexual women. In particular, they are significantly more likely to report not being behind with rent or mortgage payments, or council tax payments.

[142] Poverty rates are defined on household equivalized income before housing costs using both 50% and 60% of median household income as thresholds.

### Household-based results on the living conditions of gay men and lesbians

262. But the conclusions for gay men and lesbians obtained at the individual level do not necessarily hold at the household level, due to a gender wage differential bias (Klawitter and Flatt (1998), Black, Sanders and Taylor (2007), Klawitter (2011) in the US, Ahmed, Andersson, Hammarstedt (2011a) in Sweden, or Humpert (2012) in Germany). These studies reveal that, even if a gay man earns less than a male heterosexual counterpart, he still earns more than a woman – and that the latter effect dominates the former (this pattern is especially true since the early 2000s, as shown by Clarke and Sevak (2013) based on an analysis of the US National Health and Examination Survey (NHANES) data). Consequently, two gay men earn *more* than a married couple of a man and a woman. Similarly, these studies show that even if a lesbian earns more than a female heterosexual counterpart, she still earns less than a man. It appears in fact that two lesbians earn *less* money than a married couple of a man and a woman.[143] Therefore, as compared to heterosexual couples, poverty rates appear to be lower among same-sex male couples but higher among same-sex female couples (see Albelda et al. (2009) and Badgett, Durso and Schneebaum (2013a)).

### Comparing single homosexuals with single heterosexuals

263. A wide range of biases (including the household specialization bias and the gender wage differential bias) prevents scholars from identifying whether gay men's and lesbians' living conditions are worse than that of heterosexuals. To overcome them, one should compare poverty rates among non-partnered homosexuals and non-partnered heterosexuals.

264. The Gallup daily tracking poll in the US allows restricting the analysis to single adults without children. Relying on this subsample, Badgett, Durso and Schneebaum (2013a) show that, for both women and men, one in five LGB people who live alone report an income at or below the poverty level. The poverty rate for heterosexual people living alone is lower, although the difference is only statistically significant for men. Unfortunately, this difference-of-means approach is not completed by a multivariate analysis.

### From sexual orientation discrimination to poverty

265. A handful of studies test for some of the channels through which sexual orientation discrimination may lead to higher poverty rates among homosexuals. As already noted, Dunne, Prendergast and Telford (2002) or Rew, Fouladi and Yockey (2002) show that disclosure of sexual minority status results in a housing crisis for a sizeable fraction of LGB adolescents. Consistent with these findings, the 2014 US LGBTQ Homeless Youth Provider Survey[144] indicates an overrepresentation of LGB youth among homeless people (close to 30%). A majority of them (55%) point to "being forced out of home or running away from home because of their sexual orientation" as the reason for their homelessness (Choi et al. (2015)).[145]

---

143 Carpenter (2004) is the only study whose findings depart from these results. Using data from the US Center for Disease Control, he finds no statistically significant difference between household incomes of same-sex and opposite-sex couples.

144 This survey was conducted among a non-random sample of 138 youth homelessness human service agency providers, from March 2014 through June 2014.

145 This survey reveals that transgender youth is also at high risk of homelessness. They are 12 percentage points more likely than LGB youth (67% *vs* 55%) to report rejection by their family as the reason for their homelessness.

266. Moreover, homosexual applicants are discriminated against in the rental market. Relying on a correspondence study, Ahmed and Hammarstedt (2009) find that homosexual male couples get fewer responses and invitations to showings from the landlords than heterosexual couples in Sweden. Ahmed, Andersson, and Hammarstedt (2008) do not find, however, that homosexual female and heterosexual couples are treated differently on the Swedish housing market (see Lauster and Easterbrook (2011) for similar results in Vancouver (Canada) but see Friedman (2013) for experimental evidence of housing discrimination against *both* female and male same-sex couples in 50 US cities). The absence (or lower magnitude) of discrimination against female same-sex couples might be related to landlords' preference for female rather male tenants (Ahmed and Hammarstedt (2008)), thereby potentially leading the gender effect to compensate the sexual orientation discrimination effect.

267. There is also suggestive evidence that homosexual couples might be discriminated against in the mortgage market. Relying on observational data in the US, Jepsen and Jepsen (2009) show that same-sex couples are less likely to own a home than are married couples (see Leppel (2007a, 2007b) for similar findings). Moreover, conditional on owning, same-sex couples are less likely to have a mortgage compared to married couples. To the extent that home ownership constitutes an important savings device, discrimination in the mortgage market may constrain same-sex couples' capacity to build wealth, in particular to secure their old age.[146] But the possibility of discrimination against gay men and lesbians in the mortgage market is only speculative. In particular, no correspondence study has ever tested for its extent. More research is therefore needed to better understand how discrimination based on sexual orientation affects gay men's and lesbians' living conditions.

### *Bisexual, transgender and intersex people*

268. The UK Household Longitudinal Study reveals that bisexuals face poorer economic conditions than heterosexuals, irrespective of their gender (Uhrig (2015)). Bisexual men are significantly more likely to receive income support. Moreover, bisexual women are significantly more likely to report being behind with council tax payments and in paying some or all household bills. They also show a significantly greater probability of lacking certain consumer durables as well as access to (broadband) Internet, than heterosexual women.

269. Evidence on the living conditions of transgender individuals from population-based samples is scarce but clear-cut. Carpenter, Eppink and Gonzales (2016) find that self-identified transgender people report significantly lower household income and display significantly higher poverty rates than do their cisgender counterparts (see Conron et al. (2012) for similar findings). The difference in annual household income for transgender adults is large, at around 12%, and the household income penalty is much larger for male-to-female than for female-to-male transgender individuals. This result is in in line with higher wage discrimination identified by Schilt and Wiswall

146 Yet, countervailing forces may be at work. For instance, lower fertility may allow same-sex couples to divert more resources into savings. Additionally, they may be more prone to financially prepare for retirement due to the many pitfalls they face. Unfortunately, very little is known about household financial management of same-sex versus opposite-sex couples. Negrusa and Oreffice (2011) constitute an exception though. Relying on the 2000 US Census, they show that same-sex households (be they female or male) have significantly more retirement income than heterosexual ones. Specifically, homosexual couples receive 25% more annual retirement income than married couples.

(2008) and Geijtenbeek and Plug (2015) against male workers who become women[147] (see also the US National Center for Transgender Equality (2016) for survey-based evidence that nearly one-third (29%) of transgender respondents are living in poverty, more than twice the rate in the US population (14%)).

270. Intersex people also appear at greater risk of poverty. In particular, Jones et al. (2016) report that half of their Australian convenience sample earns less than the Australian minimum wage.

## 5.4. Health

271. Evidence reveals a positive relationship between perceived discrimination and poor mental and physical health, both when discrimination is defined in general (Pascoe and Richman (2009)) or, more specifically, on grounds of sexual orientation (Meyer (1995, 2003), Mays and Cochran (2001), D'Augelli et al. (2002), Huebner, Rebchook and Kegeles (2004), Fedewa and Ahn (2011), Frost, Lehavot and Meyer (2015)). In a context where LGBTI are more likely to expect rejection and to report actual experiences of discrimination and violence, this relationship should lead to observing poorer health outcomes among sexual and gender minorities.

272. This section first investigates whether, indeed, LGBTI show higher rates of physical and mental health problems. It then examines the possibility of a "minority stress" effect, whereby LGBTI perception of being socially rejected impairs their health outcomes. Finally, additional channels potentially leading to an LGBTI health penalty are explored.

### *5.4.1. Physical and mental health among LGBTI*

273. Studies relying on population-based surveys that include direct questions on sexual orientation by and large confirm an LGB health deficit. This result is confirmed both for adolescents (Ortiz-Hernandez, Gomez Tello and Valdes (2009) in Mexico, Oswalt and Wyatt (2011) and Rosario et al. (2014) in the US) and adults (Conron, Mimiaga and Landers (2010), Dilley et al. (2010) or Conron et al. (2012) in the US).

274. Oswalt and Wyatt (2011) report substantial mental health issues among LGB youth in the US: they are more likely to feel hopeless, exhausted, lonely, sad, depressed, anxious and angry. They also report "more than average" or "tremendous" stress more frequently than do their heterosexual counterparts. Finally, they are more likely to have hurt themselves and considered/attempted suicide in the twelve months prior to the interview (see Almeida et al. (2009), Haas et al. (2011), Robison and Espelage (2011) or Russel et al. (2011) in the US for additional evidence on the relationship between at-school victimization and suicide attempts among LGB youth).

275. Additionally, Rosario et al. (2014) document greater substance abuse in the US among LGB students, as do Ortiz-Hernandez, Gomez Tello and Valdes (2009) in Mexico: they are more likely to report smoking of cigarettes, drinking alcohol and binge drinking (see Faulkner and Cranston (1998), Bontempo and D'Augelli (2012) and Goldbach et al. (2014) for additional evidence on the relationship between at-

[147] These results are in line with Figure 3.9 that reveals more negative attitudes toward male-to-female than female-to-male transgender people.

school victimization and substance abuse among LGB youth). This finding suggests that sexual minorities are at greater risk of developing cancers, although the lack of cancer surveillance among LGBTI precludes scholars from testing whether this population is indeed characterized by higher cancer prevalence, beyond HIV-related morbidity.[148]

276. Similar results are found among LGB adults. Relying on aggregated data from the 2001-2008 Massachusetts Behavioral Risk Factor Surveillance surveys, Conron, Mimiaga and Landers (2010) show that sexual minorities are more likely to display high cardiovascular disease risk, to report having seriously considered suicide over the last 12 months (driven by bisexuals), and to engage in substance abuse (see Bostwick et al. (2010) for similar findings from the US National Epidemiologic Survey on Alcohol and Related Conditions; see also Dilley et al. (2010) for consistent results based on aggregated data from the 2003-2006 Washington State Behavioral Risk Factor Surveillance System).[149] It is important to emphasize that bisexuals of both genders show the largest health deficit among the LGB population (Bostwick et al. (2010), Dilley et al. (2010), Oswalt and Wyatt (2011), Veenstra (2011) and Gorman et al. (2015)). Further research is needed to elucidate this strong health penalty among bisexuals.

277. Transgender people also show worse health outcomes than their cisgender counterparts. Relying on a meta-analysis of studies based on convenience samples, Reisner et al. (2016) identifies higher mental health distress among transgender individuals. This result is confirmed by the US National Center for Transgender Equality (2016): 39% of transgender respondents experience serious psychological distress in the month before completing the survey, compared with only 5% of the US population, and 40% have attempted suicide in their lifetime, nearly nine times the rate in the US population (4.6%). Based on a large administrative dataset from Sweden, Dhejne et al. (2011) show, besides, that transgender individuals exhibit particularly poor health outcomes after sex reassignment: they display substantially higher rates of overall mortality, death from cardiovascular disease and suicide, suicide attempts, and psychiatric hospitalizations. Transgender people also seem at higher risk of substance abuse: relying on the 2007 to 2009 rounds of the Massachusetts Behavioral Risk Factor Surveillance surveys, Conron et al. (2012) show that they are more likely to engage in smoking.[150]

278. Finally, intersex people seem characterized by poorer health outcomes too. Among the convenience sample interviewed by Jones et al. (2016) in Australia, more than one fifth (21%) assess their physical health negatively. This proportion is larger than that obtained from convenience samples of Australian transgender people and, hence, from the Australian general public (see Couch et al. (2007), Smith et al. (2014) and Jones et al. (2015)). Additionally, 60% of the intersex respondents had thought

148 Boehmer, Miao and Ozonoff (2011) constitute an exception. Using population-based data collected in California, the authors document a significantly stronger prevalence of cancers among gay men (as compared to heterosexual men), due to a higher likelihood of "other" cancers (on top of melanoma, prostate cancer and colon cancer). Moreover, lesbians show a higher prevalence of uterine cancers and bisexual women a higher prevalence of cervical cancers. Yet, their average probability of reporting a diagnosis of cancer is similar to that of heterosexual women, despite the fact that lesbian and bisexual female cancer survivors report poorer health than heteorosexual women who experienced cancer.

149 Opposite results are found for gay men and lesbians regarding obesity: gay men (resp. lesbians) are less (resp. more) likely to be overweight as compared to their heterosexual counterparts (Carpenter (2003), Conron, Mimiaga and Landers (2010)).

150 Additionally, male-to-female transgender individuals report greater prevalence of diabetes (see Pouwer, Kupper and Adriaanse (2010) for evidence that different forms of emotional stress (such as depression, anxiety and sleeping problems) are associated with an increased risk for the development of type-2 diabetes).

about suicide, and 19% had attempted it. This compares to less than 3% of Australians who consider or attempt suicide.

### *5.4.2. A "minority stress" effect?*

279. The LGBTI health penalty may derive from a "minority stress" effect, whereby LGBTI perception of being socially rejected impairs their health outcomes. But the relationship beween higher perception of discrimination and poor health among sexual and gender minorities may also be purely correlational: LGBTI might be more prone to pessimism (irrespective of the discrimination they experience), which would lead them to report both lower health status and higher perceived discrimination.

280. Longitudinal studies (Brown et al. (2000), Pavalko, Mossakowski and Hamilton (2003)) and laboratory experiments (Armstead et al. (1989), Mc Neilly et al. (1995) and Merrit et al. (2006)) suggest that a minority stress effect on health *does* exist among women and ethnic minorities. As an illustration, the lab experiments reveal that exposure of African-American participants to racist provocations increases their emotional distress (anxiety, on top of cynicism, resentment and anger) and cardiovascular activity (blood pressure and heart rate).

281. Are these findings among women and ethnic minorities generalizable to LGBTI? Recent US-based studies allow for a positive answer.

282. These studies first provide compelling population-based evidence of a strong relationship beween anti-LGBTI discrimination and poor health among sexual and gender minorities. Combining the US General Social Survey and the National Death Index, Hatzenbuehler et al. (2014) find that gay men, lesbians and bisexuals living in communities with high levels of anti-gay prejudice experience a greater probability of mortality than those living in low-prejudice communities, controlling for individual and community-level covariates. A deeper analysis reveals that suicide, homicide/violence, and cardiovascular diseases are higher among LGB who live in these communities. Strikingly, the authors report a 18-year difference in average age of completed suicide between sexual minorities in the high-prejudice (age 37.5) and low-prejudice (age 55.7) communities.

283. These studies also reveal that this correlation is at least partly causal, based on empirical strategies that take advantage of the sequential adoption (or ban) of same-sex marriage across US states. Riggle, Rostosky and Horne (2009) show that LGB residing in Arizona, the only state with an antigay marriage amendment on the ballot in 2006 that did not pass, had significantly fewer depressive symptoms than those living in the seven states that passed the amendments. Relying on a longitudinal nationally representative survey, Hatzenbuehler et al. (2010) provide similar findings: LGB living in states that passed constitutional amendments banning same-sex marriage during the 2004 elections had significant increases in mood, anxiety, and substance disorders. By contrast, LGB living in states without these amendments did not experience an overall increase in psychiatric disorders. Hatzenbuehler et al. (2012) complete this result by focusing on health care use. They find that, in the twelve months after the enactment of laws permitting same-sex marriage in Massachusetts in 2003, sexual minority men (women are absent from the sample) had a statistically significant decrease in medical care visits and mental health care visits and costs.

284. One could argue, however, that these findings are not compelling enough to conclude that a "minority stress" effect exists. The level or variation over time of



For Official Use

LGB health outcomes across states that banned same-sex marriage and the others may indeed be driven by confounding factors. More precisely, a control group (heterosexuals) allowing for a comparative analysis of LGB health outcomes over time would be needed. [151] Raifman et al. (2017) meet this requirement, thereby confirming that anti-LGBTI attitudes contribute to undermining LGBTI health: the reduction in the number of suicide attempts between LGBs and heterosexuals is substantially higher in states that adopted same-sex marriage than in others (a trend that was not apparent before the implementation of LGB-inclusive policies). Same-sex marriage policies cause a reduction by 14% of suicide attempts among individuals who self-identify as gay, lesbian or bisexual (from 29% to 25%).

### *5.4.3. Exploring other channels*

285. An LGBTI health penalty might not be only caused by a "minority stress" effect. It could also stem from discriminatory practices on the side of medical practitioners themselves. As an illustration, FRA (2014) indicates that 10% of LGBT living in the EU who accessed healthcare in the year before the survey felt personally discriminated against by healthcare personnel. Moreover, according to the 2010 US National Transgender Discrimination Survey, 19% of the respondents report being refused care due to their transgender or gender-non-conforming status, and 28% declare having been subjected to verbal harassment in medical settings (Grant et al. (2011)). Intersex people are also resentful of their experience with health and medical services. In particular, Jones et al. (2016) reveal that most of the respondents in their convenience sample were given no information on the option of declining or deferring the surgical and hormonal interventions they underwent. Even worse, a fifth were given no information at all about any of the medical treatments they received. Unfortunately, to date, no correspondence or audit study has ever tested for anti-LGBTI discrimination in access to healthcare. No experimental data are therefore available to confirm LGBTI perception of being unfairly treated by the healthcare system.

286. LGBTI can also be discriminated against in their access to healthcare through other channels. In particular, it has already been noted that health insurance coverage is more likely to include an employee's opposite-sex spouse than same-sex partner or even spouse. Ponce et al. (2010) confirm that this unequal treatment is highly detrimental to partnered gay men's and lesbians' health insurance outcomes. Relying on the California Health Interview Survey (2001, 2003 and 2005 rounds), they show that same-sex couples are more than twice as likely to be uninsured as married heterosexuals. In this setting, requiring private employers to treat employees in committed same-sex relationships similarly to employees in opposite-sex marriages should improve LGBTI access to healthcare, as suggested by Buchmueller and Carpenter (2012). These authors estimate the impact of a 2005 law in California that extended health benefit eligibility to same-sex partners of employees and find that this legislation increased health insurance coverage, at least among lesbians (they could not discern an effect among gay men, potentially due to their low rate of partnership).

[151] Hatzenbuehler et al. (2010) do have information on health outcomes among heterosexuals. However, they do not use it to run a triple-difference analysis that would allow identifying whether LGB *relative* health deficit is significantly stronger in states where same-sex marriage is banned. *A fortiori*, the authors do not perform a test of the parallel-trend assumption to ensure that LGB relative health deficit is constant over time prior to the ban.

287. The LGBTI health deficit may also stem from their reluctance to see a doctor due to their fear of being stigmatized. This surmise might be particularly true for transgender people, 14% of whom report foregoing treatment for fear of discrimination or intolerant reactions (FRA (2014)). Yet, population-based evidence provides only mixed support for this hypothesis. According to Buchmueller and Carpenter (2010), while gay men are more likely to have had a checkup in the past year than straight men, lesbians are less likely to have had a recent mammogram or Pap test than straight women. But Conron, Mimiaga and Landers (2010) provide findings that are quite the opposite: gay men are less likely to obtain prostate-specific antigen tests than heterosexual men, but lesbians show a similar likelihood of being screened for breast or cervical cancer as heterosexual women. Moreover, Conron et al. (2012) estimate a significantly higher probability of medical check-up in the past twelve months among transgender than among cisgender respondents (likely due to transgender people's strong health deficit which may counterbalance their reluctance to see a doctor).

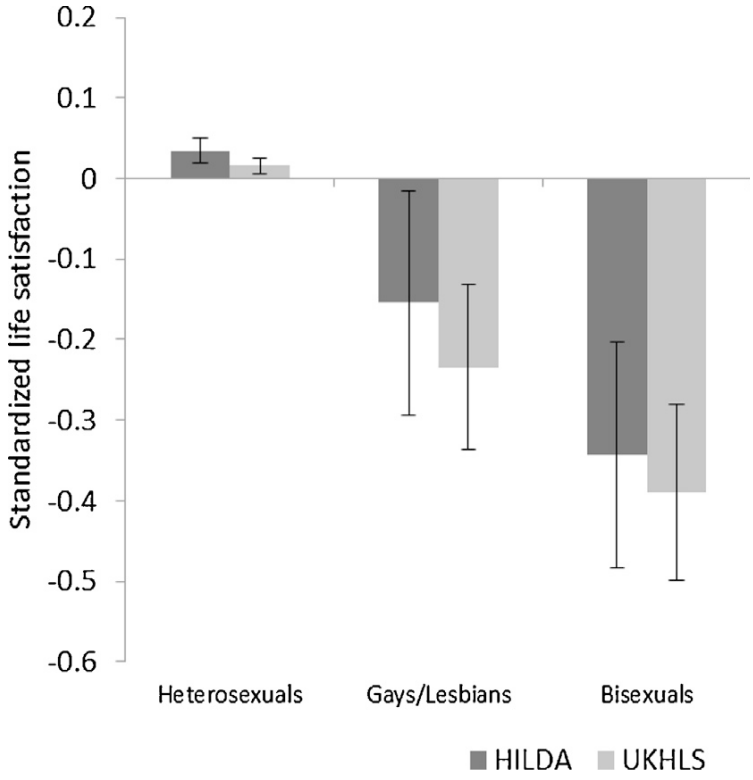
288. Finally, poorer health outcomes among LGBTI and, notably, a higher HIV prevalence rate, might partly stem from their discrimination on the labour market emphasized in Section 5.3. This may be particularly true for transgender people whose labour market outcomes are consistently worse than those of their cisgender counterparts, judging from observational or experimental evidence. As an illustration, relying on a convenience sample of 106 transgender people in Italy, Botti and D'Ippoliti (2016) find that past experiences of discrimination in the labour market are strongly positively correlated with transgender people's decision to become sex workers. Consistent with this finding, transgender people are overrepresented in this population. They stand for 6% of sex workers across European countries and for an even larger share (between 15% and 25%) in Belgium, France, Greece, Italy or Luxembourg (see Tampep (2009)).

## 5.5. Well-being

289. Sexual and gender minorities are known to report lower well-being (see Perales (2016) for a review and evidence based on Australian data). As an illustration, just 18% of LGBT adults in the US describe themselves as "very happy," compared with 30% of adults in the general public (Pew Research Centre (2013)).

**Figure 5.1. Average (standardized) life satisfaction by sexual identity**

4-standard-error bands (95% confidence interval) are reported: two standard errors above and two below




*Source*: Powdthavee and Wooden (2015)

290. This well-being deficit may obviously capture a direct negative relationship between sexual/gender minority status and happiness. But this relationship can also be indirect, through the association of being LGBTI with negative socio-economic outcomes detrimental to well-being. Powdthavee and Wooden (2015) document these correlations, based on the UK Household Longitudinal Study (UKHLS) and on the Household, Income and Labour Dynamics in Australia (HILDA) Survey (see Figure 5.1). Relying on a simultaneous equation model, they find that being LGB is negatively related to self-reported life satisfaction. But these two dimensions are also negatively linked in a more distant manner: LGB report a lower probability of being married (or in a *de facto* relationship), a lower number of children, and a lower health status, all three dimensions being associated with lower life satisfaction. Bisexuals appear, again, as particularly disadvantaged: they also declare lower employment probability and household income, which further strengthens their higher odds of being dissatisfied with their life. Feedback effects are obviously likely: poor subjective well-being of sexual and gender minorities certainly contributes to perpetuate their lower socio-economic outcomes.

# 6. Combating anti-LGBTI discrimination

291. Despite important knowledge gaps, the most compelling evidence to date on the socio-economic life of sexual and gender minorities points to a substantial LGBTI penalty which is at least partly driven by discrimination. Yet, little is known about the type of anti-discrimination policies that may mitigate this penalty.

292. Are anti-discrimination laws enough to increase individuals' readiness to (professionally) interact with a LGBTI person (e.g. hiring or choosing this person as tenant)? Moreover, information on the source of anti-LGBTI discrimination is critical to devise efficient additional antidiscrimination policies.

293. In this regard, based on Section 5.3, anti-LGBTI discrimination seems to be largely "taste-based", i.e. driven by preconceived unfavourable judgment. Notably, fictive homosexual applicants are less likely to be called back by the recruiter than their heterosexual counterparts in regions showing higher levels of homophobia (Tilcsik (2011) in the US and Weichselbaumer (2015) in Germany). And providing reassuring information about their application (for instance by stressing their excellent academic records, their reliability and work commitment) does not allow for closing the gap in callback rates between fictive heterosexual and homosexual applicants (Drydakis (2014b)). An obvious potential way to combat taste-based discrimination would consist in promoting prejudice-reducing interventions. But what does survey-based and experimental evidence tell us about their efficiency?

## 6.1. Anti-discrimination laws

294. Do anti-discrimination laws deter employers (or landlords, etc.) from discriminating? In the labour market, such laws typically ban discrimination against protected minorities in hiring, wage determination and firing, thereby putting employers at risk of litigation and, eventually, compensatory and punitive damages if intentional discrimination is found.

295. Yet, proving discrimination is much easier for the victims once they are hired than at the hiring stage, unless discrimination at the entry stage is blatant.[152]

296. Anti-discrimination laws that protect sexual and gender minorities should therefore be correlated with LGBTI well-being in the workplace *once they are hired*. As an illustration, based on an exhaustive literature review, Badgett et al. (2013b) find that LGBT employees report lower perceived discrimination and are more comfortable being open about their sexual orientation in firms that ban discrimination based on sexual orientation and gender identity. In fact, LGBT-supportive policies are linked to greater job commitment, improved workplace relationships, increased job satisfaction and improved health outcomes among LGBT employees. In the same vein, other survey-based studies document a negative relationship between sexual minorities' earnings penalty and protection against discrimination on grounds of

[152] As an illustration, Acemoglu and Angrist (2001) recall that, of the claims filed by the Equal Employment Opportunity Commission (EEOC) after the enactement of the Americans with Disabilities Act, the large majority pertained to wrongful termination (less than 10% concerned the hiring stage).

sexual orientation (see Baumle and Poston (2011), Klawitter (2011) and Martell (2013b)[153] in the US and Bryson (2016) in the UK).

297. But anti-discrimination laws may fail to avoid anti-LGBTI *hiring* discrimination. They might even happen to exacerbate such discrimination. Indeed, it is a possibility that they work as a form of employment protection, which reduces not only the risk for minorities of being fired, but also compromises their chances of being hired due to employers' fear of litigation if they terminate their contract (see Scarpetta (2014) for a review of the pros and cons of employment protection policies).

298. Consistent with this intuition, Leppel (2009), reports a positive correlation between laws prohibiting sexual orientation discrimination and gay men's and lesbians' employment penalty in the US. As suggested by Acemoglu and Angrist (2001), this correlation might well reflect causality. More precisely, these authors are the first to estimate the impact of an anti-discrimination law, the Americans with Disabilities Act (ADA), on the employment of the targeted minority. They find this impact to be negative. However, they are not able to identify the component of the ADA that generates this result, since the ADA does not only ban discrimination against persons with a disability but also requires employers to offer adequate facilities for them (e.g. by enabling wheelchair access, purchasing special equipment for disabled employees, restructuring jobs to permit disabled employees to work part-time or from home, etc.). Put differently, their negative finding may stem from a higher cost of firing disabled employees and/or from a higher cost of hiring them.

299. Further research is therefore needed to determine whether banning discrimination against sexual and gender minorities *per se* constitutes an efficient policy against anti-LGBTI *hiring* discrimination. Moreover, given that anti-LGBTI discrimination seems to be largely driven by preconceived unfavourable judgments, prejudice-reducing interventions constitute a necessary supplemental policy.

## 6.2. Prejudice-reducing interventions

300. Two main approaches could theoretically help undermine anti-LGBTI taste-based discrimination: (i) the enactment of LGBTI-inclusive laws (beyond banning discrimination against sexual and gender minorities) and (ii) "diversity training", either among the general public through mass media and/or among a subgroup (e.g. students at junior and senior high-school, employers or workers).

### *6.2.1. LGBTI-inclusive laws*

301. According to Tankard and Paluck (2016a), laws may alter the perception of norms by the general public. It is indeed likely that individuals view them as reflecting the public opinion purposefully, to maintain support, or incidentally, because people who devise them are subject to the same social forces as the public. "For either reason, if individuals believe that an institution's decisions take public opinion into account, they may update their beliefs about where the public stands when the institution issues a decision" (Tankard and Paluck (2016b)). Yet, extensive

[153] More precisely, Martell (2013b) finds that each additional year an Employment Nondiscrimination Act (ENDA) is implemented at the state level is associated with a reduction in the earnings penalty for gay men.

research has shown that a change in the perception of social norms can induce people to conform, in part to avoid social rejection (Cialdini and Goldstein (2004)).

302. Do LGBTI-inclusive laws influence individuals' perception of social acceptance of LGBTI? Do they positively impact, eventually, individual opinion and behaviour toward sexual and gender minorities, beyond self-reported attitudes that are prone to the social desirability bias?

303. Tankard and Paluck (2016b) provide the first experimental evidence on this issue by studying reactions to the June 2015 US Supreme Court ruling in favour of same-sex marriage nationwide. Relying on an online survey conducted before June 2015, they manipulate participants' perception of the likelihood that the Supreme Court would rule in favour of same-sex marriage. More precisely, participants are invited to read a brief article about the likely outcome of the upcoming Supreme Court ruling on gay marriage: they are randomly assigned to read either a version entitled "Supreme Court likely to rule in favour of gay marriage" or a version entitled "Supreme Court unlikely to rule in favour of gay marriage."

304. The authors first find that institutional decisions shape individuals' perception of social norms: participants who read that the Supreme Court is likely to rule in favour of gay marriage perceive Americans' current support for gay marriage to be significantly higher, compared to participants who read that the Court is unlikely to rule in favour of gay marriage. Moreover, these participants show significantly more positive attitudes in support of gay marriage and ratings of gay people on a feeling thermometer. Finally, the authors find that LGBTI-inclusive laws may affect opinion and behaviour, beyond self-reported attitudes. To construct their behavioural measure, they ask participants if they are interested in being mailed a free sticker to show support for an issue of their choice, such as environment conservation or gay marriage. The authors find that participants are significantly more likely to select a free pro-gay marriage sticker as opposed to other free issue stickers or no sticker, in the "likely to rule in favour" than in the "unlikely to rule in favour" condition.

305. Yet, further research is needed to determine whether this behavioural change is robust when the pro-LGBTI action incurs a more significant cost for the participants.

### *6.2.2. Diversity training*

306. Diversity training is also supposed to help combat homo-, trans- and intersexphobia. Based on the review by Paluck and Green (2009), Bartos, Berger and Hegarty (2014) identify twelve types of interventions to reduce prejudice against sexual minorities:

- *education*: information on homosexuality, transgenderism, intersex status, anti-LGBTI prejudice and LGBTI lives, either through lectures, educational films, scientific readings or a combination of these in the form of a course or workshop
- *intergroup contact*: contact with gay men, lesbians, bisexual, transgender or intersex people in an organized setting like a panel presentation
- *norms or expertise*: information on how prejudice is viewed by either experts (e.g. evolutionary psychologists) or a significant group (e.g. public opinion or peers)
- *inducing emotions*: exercises that directly target participants' emotions toward LGBTI people, including the facilitation of empathy (e.g. perspective taking such as writing an essay from the viewpoint of a LGBTI person)



For Official Use

- *priming techniques*: making salient participants' identity or values (e.g. tolerance or self-worth)
- *awareness or suppression:* instruction of participants to either recognize or suppress their prejudice
- *accountability*: prompting of participants to explain their answers, attitudes and/or behaviours
- *entertainment*: recreational books, films, or shows whose content is expected to influence prejudice
- *cooperative learning*: joint studying of participants and LGBTI people, especially in a jigsaw-classroom[154] setting
- *peer debate*: discussion of beliefs and feelings between participants and LGBTI peers
- *cognitive training*: exercises to retrain stereotypes
- *manipulation of categories*: encouragement of participants to change the way they categorize others (e.g. acknowledge that one person belongs to multiple categories).

307. Relying on a meta-analysis composed of 159 studies, Bartos, Berger and Hegarty (2014) first stress the lack of evidence on certain interventions to reduce hostility toward LGBTI: only one study is dedicated to the *accountability technique* (Pereira, Monteiro and Camino (2009)[155]) and none to *cooperative learning*, *cognitive training* or *manipulation of categories*.

308. With regards to the other approaches, *education*, *contact* and *norms or expertise* interventions appear as effective. *Awareness or suppression* as well as *entertainment* also produce promising results, although the studies that implement these techniques are too diverse for the authors to provide a clear-cut conclusion. *Inducing emotions* or *priming specific values* concern only few studies, which may explain why the results are so far ambiguous or incomplete: empathy-reducing exercises do not allow for an effect that is statistically significant, while the priming technique has been mainly implemented in order to identify the values that increase (not decrease) prejudice against sexual minorities (e.g. the importance of family).

309. These conclusions must be taken with a grain of salt however. Many of the studies included in the meta-analysis lack internal validity, meaning that their ability to isolate a causal relationship is questionable: less than a half rely on a randomized control group. Moreover, none of these studies is conducted outside the laboratory, thereby compromising the possibility to generalize their findings, the so-called external validity.

310. In this setting, Brookman and Kalla (2016)[156] provide a path-breaking contribution. They implement a field randomized experiment targeting

154 Created in the early 1970s by Elliot Aronson, an American psychologist, to reduce racial conflict among school children, the jigsaw technique is a method of organizing classroom activity that makes students dependent on each other to succeed: it breaks classes into groups and assignments into pieces that children assemble to complete the (jigsaw) puzzle.

155 In this experiment, Portuguese students were told that they would later have to explain their responses to a set of questions. Participants in this condition expressed less sexually prejudiced attitudes than those in a control group, although one can question whether accountability induces a change in people's attitudes or merely a socially desirable behavior.

156 This study follows the paper by Michael J. LaCour and Donald P. Green published in *Science* in 2014. In this paper, the authors show that people's opinions about same-sex marriage are strongly improved following a conversation with a canvasser, especially if people know the canvasser is gay. But when David Brookman and Joshua Kalla started looking into the canvassing data, hoping to replicate LaCour's results, they realized that LaCour had made it all up. Consequently, the paper by LaCour and Green was retracted by

antitransgender prejudice. More precisely, they randomize whether voters in South Florida are visited by a canvasser to discuss, in a 10-minute conversation, transgender rights or recycling (control group).

311. The intervention mixes a variety of prejudice-reducing techniques. As an introduction, canvassers inform voters that they might face a decision about whether to vote to repeal the law protecting transgender people. Canvassers then ask voters to explain their views and show a video that presents arguments on both sides (*peer debate*). They define the term "transgender" at this point (*education*) and inform the voters about their gender minority status if they are transgender themselves (*intergroup contact*). Canvassers then engage in a series of perspective-taking strategies (*inducing emotion*). They ask voters to talk about a time when they themselves were judged negatively for being different and then encourage them to determine how their own experience may facilitate their ability to take transgender people's perspectives. The intervention ends with canvassers asking voters to explain if and how the exercise changed their mind (*accountability*).

312. The authors find that these conversations between 56 canvassers and 501 voters substantially and durably reduced transphobia, with effects still visible three months after the intervention. Further research is obviously needed to determine which prejudice-reducing technique(s) made the intervention successful. But Brookman and Kalla (2016) provide a first insight by stressing that the intergroup contact hypothesis, according to which contact with a member of a stigmatized group reduces prejudice toward that group, may not be that effective: they indeed do not measure a statistically significant difference between the effect of transgender and nontransgender canvassers.

*Science* in May 2015. See http://www.sciencemag.org/news/2015/05/science-retracts-gay-marriage-paper-without-agreement-lead-author-lacour (last accessed on March 21, 2017).



For Official Use

# 7. Conclusion and avenues for future research

313. This paper presents an overview of the socio-economic situation of LGBTI, primarily in OECD countries. It shows that, despite a shift toward greater acceptance of sexual and gender minorities, and a rise in LGBTI-inclusive laws, homo-, trans- and intersexphobia are still pervasive, leading LGBTI to feel strongly discriminated against. Consistent with this setting, survey-based and experimental evidence points to a substantial penalty for LGBTI in family life, education, labour market outcomes, health and well-being.[157] Notably, (i) low legal recognition of same-sex couples negatively affects their stability and children's well-being; (ii) LGBTI students are bullied at school and suffer academically; (iii) LGBTI face hiring and wage discrimination; (iv) they show higher rates of physical and mental health problems, notably because they feel socially rejected; (v) they report lower levels of happiness and life satisfaction.

314. All subgroups of the LGBTI population fare worse than non-LGBTI individuals on average, but bisexuals, transgender and intersex individuals experience the strongest penalty, at least based on the scarce available evidence. Further research is needed to better measure these subgroups' outcomes and investigate the reasons behind their penalty.

315. This review is the opportunity to stress additional important knowledge gaps and, hence, avenues for further research.

316. First, only few population-based surveys include direct measures of sexual orientation, not to mention gender identity. And none collects information on respondents' intersex status. This shortcoming not only precludes scholars from studying the LGBTI population as a whole, beyond same-sex couples, but also compromises the possibility to isolate an LGBTI penalty, in particular due to the household specialization bias inherent to couples-based data. Besides, the few population-based surveys that allow for a direct identification of homosexual, bisexual and transgender people are typically not large enough for meaningful statistical inference. It is therefore urgent to include *direct* questions on sexual orientation, gender identity and intersex status in *nationwide* surveys such as population censuses. Furthermore, only a minority of surveys is based on a self-administered online questionnaire that grants respondents additional anonymity and privacy and is therefore stuited to curb their tendency to underreport their sexual and gender minority status (and, hence, mitigate the social desirability bias that runs against finding a LGBTI penalty). Finally, no national survey implements data collection tools offering full concealment of the respondents' answer (like the item count technique) and, thus, greater incentive for sexual and gender minorities to disclose who they are, a necessary condition for estimating their size.[158]

[157] The World Bank and the UNDP are also calling for more investment in research and data on lesbian, gay, bisexual, transgender, and intersex (LGBTI) experiences *worldwide* to create a LGBTI inclusivity index that would not only summarize information on their legal, political and social acceptance, but also knowledge on their education, economic well-being and health (Badgett and Crehan (2016)).

[158] See the Austrian Institute for Advanced Studies (2013) for (i) an insightful review on the availability, access and quality of data on LGBs in Europe ; (ii) a set of recommendations for collecting better and more comparable data across European countries.

317. Second, experimental data for identifying anti-LGBTI discrimination in the labour market (as well as in other markets) remain scarce and in need of improvement, a pity given their capacity to solve many of the biases that weaken the internal validity of survey-based evidence. More precisely, only ten countries have thus far run correspondence studies aiming to measure hiring discrimination against sexual and gender minorities, based on different experimental setups conducted at different points in time. This limited geographic scope and lack of homogeneity question the external validity of the results found (i.e. to what extent can they be generalized to other countries?). These limitations also undermine the possibility for a cross-country comparison and, hence, for isolating national and local factors that correlate with anti-LGBTI discrimination (an important step toward identifying some of its determinants). Moreover, these correspondence studies (i) are not linked to surveys among employers, workers and LGBTI job seekers/employees that would help elicit the stereotypes toward sexual and gender minorities that prevail in the workplace, and test for their role in the hiring process; (ii) have never tested for discrimination against bisexuals, transgender people of both sexes or intersex people. These drawbacks further reduce the potential of existing correspondence studies to identify the source(s) of (hiring) discrimination against LGBTI. It is important to note that a survey devoted to measuring the perception of sexual and gender minorities in the workplace would help assess the likelihood of wage discrimination once LGBT are hired, an issue hardly testable in an experimental setting and difficult to address with a standard survey-based earnings analysis.

318. Third, a number of laws feed both direct and indirect discrimination against LGBTI. For instance, legal barriers to same-sex marriage do not only constitute an unfair treatment of sexual minorities. They also prompt indirect discrimination to the extent that marital status is a condition for access to specific advantages (e.g. survivor benefits) in many countries where same-sex marriage is not allowed. Even in countries that have legalized same-sex marriage, some rights may be still restricted to opposite-sex couples. Moreover, in countries where gender or sex reassignment surgery and/or hormone treatment is legal, they are not necessarily subject to the same conditions for reimbursement/funding as standard surgery and medical treatment. Yet, there is no systematic country-by-country record to date of the legal provisions that economically harm homosexual and transgender people. Nor does a quantification of their cost for sexual and gender minorities exist.

319. Fourth, observational data reveal a substantial health deficit among sexual and gender minorities that likely plays a critical role in further impairing their already poor socio-economic outcomes. Unfortunately, the important question whether and to what extent these minorities are discriminated against in access to healthcare has never been addressed in a compelling (experimental) way. In particular, it is critical to evaluate whether older LGBTI face barriers to their access to long-term care, in a context where they typically cannot rely on the same family support as other older people (AGE Platform Europe and ILGA Europe (2012)).

320. The fifth and maybe most worrying caveat concerns the scarcity of evidence on the type(s) of anti-discrimination policies that work. Are prejudice-reducing interventions efficient? Do LGBTI-inclusive laws (such as the legalization of same-sex marriage) improve attitudes and behaviours toward LGBTI by changing (the perception of) social norms? How should one devise the content of diversity training sessions in order to improve their impact? Evaluating the impact of prejudice-reducing intervention among junior high school students should be a priority given



For Official Use

that prejudice is known to develop at a very young age. Specific training for teachers and parents is also a necessity, in order to promote open discussions with children and teenagers about LGBTI-related issues and, hence, reduce the ubiquity of homo-, trans- and intersexphobic bullying at school.

321. All in all, this review highlights important avenues for future research: (i) better identifying LGBTI in *nationwide* surveys, through *direct* questions on sexual orientation, gender identity and intersex status, as well as survey tools offering enough privacy and anonymity to avoid the underreporting of sexual and gender minority status; (ii) improving the measurement of anti-LGBTI discrimination in the labour market and beyond (by also focusing on the housing or mortgage markets) and the identification of its cause(s), ideally through a standardized cross-country correspondence study; (iii) pinpointing the legal provisions conducive to direct and indirect anti-LGBTI discrimination (such as legal barriers to same-sex marriage) and quantifying their economic cost for LGBTI; (iv) testing for anti-LGBTI discrimination in access to healthcare; (v) evaluating the impact of policies aiming to reduce anti-LGBTI prejudice[159].

[159] This objective might not only entail eliciting whether andidiscrimination policies do reduce discrimination, but also identifying their impact on other outcomes, including economic performance. As an illustration, Li and Nagar (2012) show that US firms that extended benefits primarily reserved for employees' opposite-sex partneres to employees's same-sex partners grew faster.

# Bibliography


Acemoglu, Daron and Joshua D. Angrist. 2001. "Consequences of employment protection? The case of the Americans with Disabilities Act." *Journal of Political Economy* 109(5): 915-957.

Acquisti, Alessandro and Christina M. Fong. 2015. "An experiment in hiring discrimination via online social networks." Unpublished manuscript.

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.

Adams, Jeffrey M. and Warren H. Jones. 1997. "The conceptualization of marital commitment: An integrative analysis." *Journal of Personality and Social Psychology* 72(5): 1177-1196.

Adida, Claire L., David D. Laitin and Marie-Anne Valfort. 2016. *Why Muslim integration fails in christian-heritage societies*. Harvard University Press.

AGE Platform Europe and ILGA Europe. 2012. *Equality for older lesbian, gay, bisexual, trans and intersex people in Europe*.

Ahmed, Ali M. and Mats Hammarstedt. 2008. "Discrimination in the rental housing market: A field experiment on the Internet." *Journal of Urban Economics* 64(2): 362-372.

Ahmed, Ali M. and Mats Hammarstedt. 2009. "Detecting discrimination against homosexuals: Evidence from a field experiment on the Internet." *Economica* 76(303): 588-597.

Ahmed, Ali M. and Mats Hammarstedt. 2010. "Sexual orientation and earnings: A register data-based approach to identify homosexuals." *Journal of Population Economics* 23(3): 835-849.

Ahmed, Ali M., Lina Andersson and Mats Hammarstedt. 2008. "Are lesbians discriminated against in the rental housing market? Evidence from a correspondence testing experiment." *Journal of Housing Economics* 17(3): 234-238.

Ahmed, Ali M., Lina Andersson and Mats Hammarstedt. 2011a. "Inter- and intra-household earnings differentials among homosexual and heterosexual couples." *British Journal of Industrial Relations* 49(2): s258-s278.

Ahmed, Ali M., Lina Andersson and Mats Hammarstedt. 2011b. "Sexual orientation and occupational rank." *Economics Bulletin* 31(3): 2422-2433.

Ahmed, Ali M., Lina Andersson and Mats Hammarstedt. 2013a. "Sexual orientation and full-time monthly earnings, by public and private sector: Evidence from Swedish register data." *Review of Economics of the Household* 11(1): 83-108.

Ahmed, Ali M, Lina Andersson and Mats Hammarstedt. 2013b. "Are gay men and lesbians discriminated against in the hiring process?" *Southern Economic Journal* 79(3): 565-585.

Aksoy, Cevat G., Christopher S. Carpenter and Jeff Frank. 2016. "Sexual orientation and earnings: New evidence from the UK." Forthcoming in *Industrial and Labor Relations Review*.

Albelda, Randy, M. V. Lee Badgett, Gary J. Gates and Alyssa Schneebaum. 2009. "Poverty in the lesbian, gay, and bisexual community." The Williams Institute.

Alden, Lina, Lena Edlund, Mats Hammarstedt and Michael Mueller-Smith. 2015. "Effect of registered partnership on labor earnings and fertility for same-sex couples: Evidence from Swedish register data." *Demography* 52(4): 1243-1268.

Allegretto, Sylvia A. and Michelle M. Arthur. 2001. "An empirical analysis of homosexual/heterosexual male earnings differentials: Unmarried and Unequal?" *Industrial and Labor Relations Review* 54(3): 631-646.

Alesina, Alberto, Johann Harnoss and Hillel Rapoport. 2016. "Birthplace diversity and economic prosperity." *Journal of Economic Growth* 21(2): 101-138.

Allegretto, Sylvia A. and Michelle M. Arthur. 2001. "An empirical analysis of homosexual/heterosexual male earnings differentials: Unmarried and unequal?" *Industrial and Labor Relations Review* 54(3): 631-646.

Almeida, Joanna, Renee M. Johnson, Heather L. Corliss, Beth E. Molnar and Deborah Azrael. 2009. "Emotional distress among lgbt youth: The influence of perceived discrimination based on sexual orientation." *Journal of Youth and Adolescence* 38(7): 1001-1014.

Andersson, Gunnar, Turid Noack, Ane Seierstad and Harald Weedon-Fekjær. 2006. "The Demographics of Same-Sex Marriages in Norway and Sweden." *Demography* 43(1): 79-98.

Andersen, Robert and Tina Fetner. 2008a. "Cohort differences in tolerance of homosexuality : Attitudinal change in Canada and the United States, 1981–2000." *Public Opinion Quarterly* 72(2) : 311-330.

Andersen, Robert and Tina Fetner. 2008b. "Economic Inequality and Intolerance: Attitudes toward Homosexuality in 35 Democracies." *American Journal of Political Science* 52(4): 942-958.

Antecol, Heather, Anneke Jong and Michael Steinberger. 2008. "The sexual orientation wage gap: The role of occupational sorting and human capital." *Industrial and Labor Relations Review* 61(4): 518-543.

Antecol, Heather and Michael D. Steinberger. 2013. "Labor supply differences between married heterosexual women and partnered lesbians: A semi-parametric decomposition approach." *Economic Inquiry* 51(1): 783-805.

Arabsheibani, G. Reza, Alan Marin and Jonathan Wadsworth. 2004. "In the pink: Homosexual-heterosexual wage differentials in the UK." *International Journal of Manpower* 25(3-4): 343-354.

Arabsheibani, G. Reza, Alan Marin and Jonathan Wadsworth. 2005. "Gay pay in the UK." *Economica* 72(286): 333-347.

Armstead, Cheryl A., Kathleen A. Lawler, Gloria Gorden, John Cross and Judith Gibbons. 1989. "Relationship of racial stressors to blood pressure responses and anger expression in black college students." *Health Psychology* 8(5): 541-556.

Arrow, Kenneth J. 1973. "The theory of discrimination." Pp 3-33 *In Discrimination in Labor Markets*, edited by Orley Ashenfelter and Albert Rees. Princeton University, Princeton, NJ.

Austrian Institute of Advanced Studies. 2013. *European LGB Data Project. A compilation of statistical data on sexual orientation and an application to research on the economic status of LGBs*.

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, Laura E. Durso and Alyssa Schneebaum. 2013a. "New patterns of poverty in the lesbian, gay, and bisexual community." The Williams Institute.

Badgett, M. V. Lee, Laura E. Durso, Christy Mallory and Angeliki Kastanis. 2013b. "The business impact of LGBT-supportive workplace policies." The Williams Institute.

Badgett, M. V. Lee, Sheila Nezhad, Kees Waaldijk and Yan van der Meulen Rodgers. 2014. "The relationship between LGBT inclusion and economic development: An analysis of emerging economies." USAID and The Williams Institute.

Badgett, M. V. Lee and Philip R. Crehan. 2016. "Investing in a research revolution for LGBTI inclusion." World Bank Group.

Baert, Stijn. 2014. "Career lesbians: Getting hired for not having kids?" *Industrial Relations Journal* 45(6): 543-561.

Baert, Stijn, Sarah De Visschere, Koen Schoors, Désirée Vandenberghe and Eddy Omey. 2016. First depressed, then discriminated against? *Social Science & Medicine* 170: 247-254.

Baggaley, Rebecca F, Richard G. White and Marie-Claude Boily. 2010. "HIV transmission risk through anal intercourse: Systematic review, meta-analysis and implications for HIV prevention." *International Journal of Epidemiology* 39(4): 1048-1063.

Bailey, John, Michael Wallace and Bradley Wright. 2013. "Are gay men and lesbians discriminated against when applying for jobs? A four-city, Internet-based field experiment." *Journal of Homosexuality* 60(6): 873-894.

Balsam Kimberly F., Theodore P. Beauchaine, Esther D. Rothblum and Sondra E. Solomon. 2008. "Three-year follow-up of same-sex couples who had civil unions in Vermont, same-sex couples not in civil unions, and heterosexual married couples." *Developmental Psychology* 44(1): 102-116.

Banens, Maks and Eric Le Penven. 2016. "Sex miscoding in the Census and its effects on the enumeration of same-sex Couples." *Population* 71(1): 131-144.

Bardales, Nujavi. 2013. "Finding a job in "a beard and a dress": Evaluating the effectiveness of transgender anti-discrimination laws." Unpublished manuscript.

Barrett, Donald C. and Lance M. Pollack. 2005. "Whose gay community? Social class, sexual self-expression, and gay community involvement." *Sociological Quarterly* 46(3): 437-456.

Bartos, Sebastian E., Israel Berger and Peter Hegarty. 2014. "Interventions to reduce sexual prejudice: A study-space analysis and meta-analytic review." *Journal of Sex Research* 51(4): 363-382.

Bauer, Gerrit. 2016. "Gender roles, comparative advantages and the life course: The division of domestic labor in same-sex and different-sex couples." *European Journal of Population* 32(1): 99-128.

Baumle, Amanda K. and Dudley L. Poston. 2011. "The economic cost of homosexuality: Multilevel analyses." *Social Forces* 89(3): 1005-1031.

Bayer, Ronald. 1981. *Homosexuality and American Psychiatry: The Politics of Diagnosis*. New York: Basic Books.

Becker, Gary S. 1957. *The Economics of Discrimination*. University of Chicago Press.

Becker, Gary S. 1993. *A Treatise on the Family*. Harvard University Press.

Bem, Sandra L. 1974. "The measurement of psychological androgyny." *Journal of Consulting and Clinical Psychology* 42(2): 155-162.

Bem, Sandra L. 1981. *Bem Sex Role Inventory: Professional Manual*. Palo Alto, CA: Consulting Psychologists Press.

Bendick, Marc Jr., Charles W. Jackson and J. Horacio Romero. 1997. "Employment discrimination against older workers: An experimental study of hiring practices." *Journal of Aging & Social Policy* 8(4): 25-46.

Berg, Nathan and Donald Lien. 2002. "Measuring the effect of sexual orientation on income: Evidence of discrimination?" *Contemporary Economic Policy* 20(4): 394-414.

Berg, Nathan and Donald Lien. 2009. "Sexual orientation and self-reported lying." *Review of Economics of the Household* 7(1): 83-104.

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.

Bertrand, Marianne and Esther Duflo. 2016. "Field experiments on discrimination." Forthcoming in the *Handbook of Field Experiments*.

Biddle, Jeff E. and Daniel Hamermesh. 2013. "Wage discrimination over the business cycle." *IZA Journal of Labor Policy* 2(7): 1-19.

Black, Dan, Gary Gates, Seth G. Sanders and Lowell Taylor. 2000. "Demographics of the gay and lesbian population in the United States: Evidence from available systematic data sources." *Demography* 37(2): 139-154.

Black, Dan, Gary Gates, Seth G. Sanders and Lowell Taylor. 2002. "Why do gay men live in San Francisco?" *Journal of Urban Economics* 51(1): 54-76. x

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, Seth G. Sanders and Lowell Taylor. 2007. "The economics of lesbian and gay families." *Journal of Economic Perspectives* 21(2): 53-70.

Blackless, Melanie, Anthony Charuvastra, Amanda Derryck, Anne Fausto-Sterling, Karl Lauzanne and Ellen Lee. 2000. "How sexually dimorphic are we? Review and synthesis." *American Journal of Human Biology* 12(2): 151-166.

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.

Blinder, Alan S. 1973. "Wage discrimination: reduced form and structural estimates." *Journal of Human Resources* 8(4): 436-455.

Bloom, David E. and Sherry Glied. 1989. "The evolution of AIDS economic research." *Health Policy* 11(2): 187-196.

Blumstein, Philip and Pepper Schwartz. 1983. *American couples: Money, work, sex*. New York: William Morrow.

Boehmer, Ulrike, Xiaopeng Miao and Al Ozonoff. 2011. "Cancer survivorship and sexual orientation." *Cancer* 117(16): 3796-3804.

Bogaert, Anthony F. 2015. *Understanding asexuality*. Rowman & Littlefield Publishers

Bontempo Daniel E. and Anthony R. D'Augelli. 2002. "Effects of at-school victimization and sexual orientation on lesbian, gay, or bisexual youths' health risk behavior." *Journal of Adolescent Health* 30(5): 364-374.

Bostwick, Wendy B., Carol J. Boyd, Tonda L. Hughes and Sean Esteban McCabe. 2010. "Dimensions of sexual orientation and the prevalence of mood and anxiety disorders in the United States." *American Journal of Public Health* 100(3): 468-475.

Botti, Fabrizio and Carlo D'Ippoliti. 2016. "Sex work among trans people. Evidence from Southern Italy." Forthcoming in *Feminist Economics*.

Bridges, F. Stephen. 1996. "Altruism toward deviant persons in cities, suburbs, and small towns." *Psychological Reports* 79(1): 313-314.

Bridges, F. Stephen, C. Bennett Williamson and Donna Rae Jarvis. 2001. "Differences in lost-letter responses from a seaside city." *Psychological Reports* 88(3): 1194-1198.

Bridges, F. Stephen, Debra A. Anzalone, Stuart W. Ryan and Fanacy L. Anzalone. 2002. "Extensions of the lost-letter technique to divisive issues of creationism, Darwinism, sex education, and gay and lesbian affiliations." *Psychological Reports* 90(2): 391-400.

Broockman, David and Joshua Kalla. 2016. "Durably reducing transphobia: A field experiment on door-to-door canvassing." *Science* 352(6282): 220-224.

Brooks, Virgnia. R. 1981. *Minority stress and lesbian women*. Lexington, MA: Lexington Books.

Brown, Susan L. 2000. "The effect of union type on psychological well-being: Depression among cohabitors versus marrieds." *Journal of Health and Social Behaviour* 41(3): 241-255.

Bryson, Alex. 2016. "Pay equity after the Equality Act 2010: Does sexual orientation still matter?" Forthcoming in *Work, Employment & Society*.

Buchmueller, Thomas and Christopher S. Carpenter. 2010. "Disparities in health insurance coverage, access, and outcomes for individuals in same-sex versus different-sex relationships, 2000-2007." *American Journal of Public Health* 100(3): 489-495.

Buchmueller, Thomas and Christopher S. Carpenter. 2012. "The effect of requiring private employers to extend health benefit eligibility to same-sex partners of employees: Evidence from California." *Journal of Policy Analysis and Management* 31(2): 388-403.

Buser, Thomas, Lydia Geijtenbeek and Erik Plug. 2015. "Do gays shy away from competition? Do lesbians compete too much?" Unpublished manuscript.

Carlsson, Magnus, Luca Fumarco and Dan-Olof Rooth. 2014. "Does the design of correspondence studies influence the measurement of discrimination?" *IZA Journal of Migration* 3:11.

Carpenter, Christopher S. 2003. "Sexual orientation and body weight: Evidence from multiple surveys." *Gender Issues* 21(3) : 60-74.

Carpenter, Christopher S. 2004. "New evidence on gay and lesbian household incomes." *Contemporary Economic Policy* 22(1): 78-94.

Carpenter, Christopher S. 2005. "Self-reported sexual orientation and earnings: Evidence from California." *Industrial and Labor Relations Review* 58(2): 258-273.

Carpenter, Christopher S. 2007. "Revisiting the income penalty for behaviorally gay men: Evidence from NHANES III." *Labour Economics* 14(1): 25-34.

Carpenter, Christopher S. 2008a. "Sexual orientation, work, and income in Canada." *Canadian Journal of Economics* 41(4): 1239-1261.

Carpenter, Christopher S. 2008b. "Sexual orientation, income, and non-pecuniary economic outcomes: New evidence from young lesbians in Australia." *Review of Economics of the Household* 6(4): 391-408.

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

Carpenter, Christopher S., Samuel T. Eppink and Gilbert Gonzales. 2016. "Transgender status, employment, and income." Unpublished manuscript.

Carpenter, Christopher S. and Gary J. Gates. 2008. "Gay and lesbian partnership: Evidence from California." *Demography* 45(3): 573-590.

Carter, Prudence L. 2005. *Keepin' it real: School success beyond black and white*. New York City, NY: Oxford University Press.

Cédiey, Eric and Fabrice Foroni. 2008. "Discrimination in access to employment on grounds of foreign origin in France. A national survey of discrimination based on the testing methodology of the International Labour Office." International Labour Organization.

Chandra, Anjani, William D. Mosher, Casey Copen and Catlainn Sionean. 2011. "Sexual behavior, sexual attraction, and sexual identity in the United States: Data from the 2006–2008 National Survey of Family Growth." *National Health Statistics Reports* 36: 1-36.

Choi, Soon Kyu, Bianca D.M. Wilson, Jama Shelton and Gary J. Gates. 2015. "Serving our youth 2015: The needs and experiences of Lesbian, Gay, Bisexual, Transgender, and Questioning youth experiencing homelessness." The Williams Institute with True Colors Fund.

Cialdini, Robert B. and Noah J. Goldstein. 2004. "Social influence: compliance and conformity." *Annual Review of Psychology* 55(1): 591-621.

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.

Clarke, Geoffrey and Purvi Sevak. 2013. "The disappearing gay income penalty." *Economics Letters* 121(3): 542-545.

Coffman, Katherine Baldiga, Lucas C. Coffman and Keith M. Marzilli Ericson. 2016. "The size of the LGBT population and the magnitude of anti-gay sentiment are substantially underestimated." Forthcoming in *Management Science*.

Conron, Kerith J., Matthew J. Mimiaga and Stewart J. Landers. 2010. "A population-based study of sexual orientation identity and gender differences in adult health." *American Journal of Public Health* 100(10): 1953-1960.

Conron, Kerith J., Gunner Scott, Grace Sterling Stowell and Stewart J. Landers. 2012. "Transgender health in Massachusetts: Results from a household probability sample of adults." *American Journal of Public Health* 102(1): 118-122.

Couch, Murray, Marian Pitts, Hunter Mulcare, Samantha Croy, Anne Mitchell and Sunil Patel. 2007. "Tranznation: A report on the health and wellbeing of transgendered people in Australia and New Zealand." Melbourne: Australian Research Centre in Sex Health and Society.

Cooper, Carey E., Cynthia A. Osborne, Audrey N. Beck and Sara S. McLanahan. 2011. "Partnership instability, school readiness, and gender disparities." *Sociology of Education* 84(3): 246-259.

Copen, Casey E., Anjani Chandra and Isaedmarie Febo-Vazquez. 2016. "Sexual behavior, sexual attraction, and sexual orientation among adults aged 18-44 in the United States: Data from the 2011–2013 National Survey of Family Growth." *National Health Statistics Reports* 88: 1-13.

Cortina, Clara and Patrick Festy. 2014. "Identification of same-sex couples and families in censuses, registers and surveys." Families and Societies Working Papers Series (European Union).

Costa, Pedro Alexandre and Michelle Davies. 2012. "Portuguese adolescents' attitudes toward sexual minorities: transphobia, homophobia, and gender role beliefs." *Journal of Homosexuality* 59(10): 1424-1442.

Couper, Mick P. and Linda L. Stinson. 1999. "Completion of self‐administered questionnaires in a sex survey." *Journal of Sex Research* 36(4): 321-330.

Craigie, Terry-Ann L., Jeanne Brooks-Gunn and Jane Waldfogel. 2012. "Family structure, family stability and outcomes of five-year-old children." *Families, Relationships and Societies* 1(1): 43-61.

Cross, Harry, Genevieve Kenney, Jane Mell and Wendy Zimmerman. 1990. *Employer hiring practices: differential treatment of Hispanic and Anglo job seekers*. Washington, DC: Urban Institute Press.

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.

D'Augelli, Anthony R., Scott L. Hershberger and Neil W. Pilkington. 1998. "Lesbian, gay, and bisexual youth and their families: Disclosure of sexual orientation and its consequences." *American Journal of Orthopsychiatry* 68(3): 361-371.

D'Augelli Anthony R., Pilkington Neil W. and Hershberger Scott L. 2002. "Incidence and mental health impact of sexual orientation victimization of lesbian, gay, and bisexual youths in high school." *School Psychology Quarterly* 17(2): 148-167.

D'Augelli Anthony R. 2006. "Developmental and contextual factors and mental health among lesbian, gay, and bisexual youths." Pp. 37-53. *In Sexual orientation and mental health: Examining identity and development in lesbian, gay, and bisexual people*, edited by Allen M. Omoto and Howard S. Kurtzman. Washington D.C: American Psychological Association.

Daneshvary, Nasser C., Jeffrey Waddoups and Bradley S. Wimmer. 2008. "Educational attainment and the lesbian wage premium." *Journal of Labor Research* 29(4): 365-379.

Daneshvary, Nasser, C. 2009. "Previous marriage and the lesbian wage premium." *Industrial Relations* 48(3): 432-453.

Das, Aniruddha and Edward O Laumann. 2010. "How to get valid answers from survey questions: what we learned from asking about sexual behavior and the measurement of sexuality." Pp 9-26. *In The Sage Handbook of Measurement*, edited by Geoffrey Walford, Eric Tucker and Madhu Viswanathan. Sage Pubs, London.

Dean, Laura, Ilan H. Meyer, Kevin Robinson, Randall L. Sell, Robert Sember, Vincent M.B. Silenzio, Deborah J. Bowen, Judith Bradford, Esther Rothblum, Jocelyn White, Patricia Dunn, Anne Lawrence, Daniel Wolfe and Jessica Xavier. 2000. "Lesbian, gay, bisexual, and transgender health: Findings and concerns. *Journal of the Gay and Lesbian Medical Association* 4(3): 101-151.

Dhejne, Cecilia, Paul Lichtenstein, Marcus Boman, Anna L. V. Johansson, Niklas Langstrom and Mikael Landen. 2011. "Long-term follow-up of transsexual persons undergoing sex reassignment surgery: Cohort study in Sweden." *PLoS ONE* 6(2): e16885.

Diaz-Serrano, Luis and Enric Meix-Llop. 2016. "Do schools discriminate against homosexual parents? Evidence from a randomized correspondence experiment." *Economics of Education Review* 53: 133-142.

Dilley, Julia A. Katrina Wynkoop Simmons, Michael J. Boysun, Barbara A. Pizacani and Mike J. Stark. 2010. "Demonstrating the importance and feasibility of including sexual orientation in public health surveys: Health disparities in the Pacific Northwest." *American Journal of Public Health* 100(3): 460-467.

Dohrenwend, Bruce P. 2000. "The role of adversity and stress in psychopathology: Some evidence and its implications for theory and research." *Journal of Health and Social Behavior* 41(1): 1-19.

Dolan, Paul, Tessa Peasgood and Mathew White. 2008. "Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being." *Journal of Economic Psychology* 29(1): 94-122.

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 and labour relations: New evidence from Athens, Greece." *Applied Economics* 44(20): 2653-2665.

Drydakis, Nick. 2014a. "Bullying at school and labour market outcomes." *International Journal of Manpower* 35(8): 1185-1211.

Drydakis, Nick. 2014b. "Sexual orientation discrimination in the Cypriot labour market. Distastes or uncertainty?" *International Journal of Manpower* 35(5): 720-744.

Drydakis, Nick. 2014c. "Sexual orientation and labor market outcomes." *IZA World of Labor*.

Drydakis, Nick. 2015. "Effect of sexual orientation on job satisfaction: Evidence from Greece." *Industrial Relations: A Journal of Economy and Society* 54(1): 109-130.

Drydakis, Nick. 2016. "Sexual orientation discrimination in the United Kingdom's labour market: A field experiment." Forthcoming in *Human Relations*.

Dunne, Gillian A., Shirley Prendergast and David Telford. 2002. "Young, gay, homeless and invisible: A growing population?" *Culture, Health and Sexuality* 4(1): 103-115.

Durso, Laura E. and Ilan H. Meyer. 2013. "Patterns and predictors of disclosure of sexual orientation to healthcare providers among lesbians, gay men, and bisexuals." *Sexuality Research and Social Policy* 10(1): 35-42.

Edwards, Allen L. 1957. *The social desirability variable in personality assessment and research*. Dryden Press.

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.

Ellison, Gavin and Briony Gunstone. 2009. "Sexual orientation explored: A study of identity, attraction, behaviour and attitudes in 2009." Equality and Human Rights Commission. Research Report 35.

Elmslie, Bruce and Edinaldo Tebaldi. 2007. "Sexual orientation and labor market discrimination." *Journal of Labor Research* 28(3): 436-453.

Eurofound. 2016. *Working life experiences of LGBT people and initiatives to tackle discrimination*.

European Commission. 2012. *Discrimination in the EU in 2012: Special Eurobarometer 393*.

European Commission. 2015. *Discrimination in the EU in 2015: Special Eurobarometer 437*.

Faulkner Anne H. and Kevin Cranston. 1998. "Correlates of same-sex sexual behavior in a random sample of Massachusetts high school students." *American Journal of Public Health* 88(2): 262-266.

Fedewa, Alicia L. and Soyeon Ahn. 2011. "The effects of bullying and peer victimization on sexual-minority and heterosexual youths: A quantitative meta-analysis of the literature." *Journal of GLBT Family Studies* 7(4): 398-418.

Fischer, Mirjam M. 2016. "Identifying same-sex couples in cross-national survey data: A comparison of same-sex couples' demographic and socio-economic traits in six European countries." Pp 50-7. *In Nederland in context: verschillen en overeenkomsten*, edited by Roza Meuleman, Gerbert Kraaykamp and Marion Wittenberg. DANS.

Fisher, Robert J. 1993. "Social desirability bias and the validity of indirect questioning." *Journal of Consumer Research* 20(2): 303-315.

Flores, Andrew R. 2015. "Attitudes toward transgender rights: perceived knowledge and secondary interpersonal contact." *Politics, Groups, and Identities* 3(3): 398-416.

Flores, Andrew R. and Scott Barclay. 2016. "Backlash, consensus, legitimacy, or polarization: The effect of same-sex marriage policy on mass attitudes." *Political Research Quarterly* 69(1): 43-56.

Flores, Andrew R., Jody L. Herman, Gary J. Gates and Taylor N. T. Brown. 2016. "How many adults identify as transgender in the United States?" The Williams Institute.

Fomby, Paula and Andrew J. Cherlin. 2007. "Family instability and child well-being." *American Sociological Review* 72(2): 181-204.

FRA (European Union Agency for Fundamental Rights). 2013. *European Union lesbian, gay, bisexual and transgender survey: Results at a glance*.

FRA (European Union Agency for Fundamental Rights). 2014. *European Union lesbian, gay, bisexual and transgender survey: Main results*.

Frank, Jeff. 2006. "Gay glass ceilings." *Economica* 73(291): 485-508.

Friedman, Samantha. 2013. "An estimate of housing discrimination against same-sex couples." US Department of Housing and Urban Development.

Frost, David M., Keren Lehavot and Ilan H. Meyer. 2015. "Minority stress and physical health among sexual minority individuals." *Journal of Behavioral Medicine* 38(1): 1-8.

Furtado, Paulo Sampaio, Felipe Moraes, Renata Lago, Luciana Oliveira Barros, Maria Betania Toralles and Ubirajara Barroso. 2012. "Gender dysphoria associated with disorders of sex development." *Nature Reviews Urology* 9(11): 620-627.

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.

Gabriel, Ute, Gerhard Beyeler, Nora Däniker, Werner Fey, Karin Gutweniger, Margrit Lienhart, Beatrice Luder Gerber. 2001. "Perceived sexual orientation and helping behaviour: The wrong number technique, a Swiss replication." *Journal of Cross-Cultural Psychology* 32(6): 743-749.

Gaertner, Samuel and Leonard Bickman. 1971. "Effects of race on the elicitation of helping behavior: The wrong-number technique." *Journal of Personality and Social Psychology* 20(2): 218-222.

Gates, Gary J. 2011. "How many people are lesbian, gay, bisexual and transgender?" The Williams Institute.

Gates, Gary J. 2014. "LGBT demographics: Comparisons among population-based surveys." The Williams Institute.

Gates, Gary J. 2015. "Marriage and family: LGBT individuals and same-sex couple." *The Future of Children* 25(2): 67-87.

Geijtenbeek, Lydia and Erik Plug. 2015. "Is there a penalty for becoming a woman? Is there a premium for becoming a man? Evidence from a sample of transsexual workers." Unpublished manuscript.

Gerbert, Barbara, Bryan T. Maguire, Thomas Bleecker, Thomas J. Coates and Stephen J. McPhee. 1991. "Primary care physicians and AIDS. Attitudinal and structural barriers to care." *JAMA (Journal of the American Medical Association)* 266(20): 2837-2842.

German Youth Institute. 2015. *Coming out - What next ?!*

Giddings, Lisa, John M. Nunley, Alyssa Schneebaum and Joachim Zietz. 2014. "Birth cohort and the specialization gap between same-sex and different-sex couples." *Demography* 51(2): 509-534.

Gneezy Uri, Kenneth L. Leonard and John A. List. 2009. "Gender differences in competition: evidence from a matrilineal and a patriarchal society." *Econometrica* 77(5): 1637-1664.

Goldbach, Jeremy T., Emily E. Tanner-Smith, Meeredith Bagwell and Shannon Dunlap. 2014. "Minority stress and substance use in sexual minority adolescents: A meta-analysis." *Prevention Science* 15(3): 350-363.

Gore, Kim Y., Michael A. Tobiasen and Wesley A. Kayson. 1997. "Effects of sex of caller, implied sexual orientation of caller, and urgency on altruistic response using the wrong-number technique." *Psychological Reports* 80(3): 927-930.

Gorman, Bridget K., Justin T. Denney, Hilary Dowdy and Rose Anne Medeiros. 2015. "A new piece of the puzzle: Sexual orientation, gender, and physical health status." *Demography* 52(4): 1357-1382.

Grant, Jaime M., Lisa A. Mottet, Justin Tanis, Jack Harrison, Jody L. Herman and Mara Keisling. 2011. "Injustice at every turn: A report of the national transgender discrimination survey." Washington, DC: National Center for Transgender Equality and National Gay and Lesbian Task Force.

Gray, Colin, Phil Russell and Stephanie Blockley. 1991. "The effects upon helping behaviour of wearing a pro-gay identification." *British Journal of Social Psychology* 30(2): 171-178.

Greenwald, Anthony G., Debbie E. McGhee and Jordan L. K. Schwartz. 1998. "Measuring individual differences in implicit cognition: The implicit association test." *Journal of Personality and Social Psychology* 74(6): 1464-1480.

Gulloy, Elisabeth and Tor Morten Normann. 2010. "Sexual identity and living conditions. Evaluation of the relevance of living conditions and data collection." Statistics Norway.

Haas, Ann P., Mickey Eliason, Vickie M. Mays, Robin M. Mathy, Susan D. Cochran, Anthony R. D'Augelli, Morton M. Silverman, Prudence W. Fisher, Tonda Hughes, Margaret Rosario, Stephen T. Russell, Effie Malley, Jerry Reed, David A. Litts, Ellen Haller, Randall L. Sell, Gary Remafedi, Judith Bradford, Annette L. Beautrais, Gregory K. Brown, Gary M. Diamond, Mark S. Friedman, Robert Garofalo, Mason S. Turner, Amber Hollibaugh and Paula J. Clayton. 2010. "Suicide and suicide risk in lesbian, gay, bisexual, and transgender populations: Review and recommendations." *Journal of Homosexuality* 58(1): 10-51.

Habyarimana, James, Bekezela Mbakile and Cristian Pop-Eleches. 2010. "The impact of HIV/AIDS and ARV treatment on worker absenteeism. Implications for African firms." *Journal of Human Resources* 45(4): 809-839.

Hamilton, Laura. 2007. "Trading on heterosexuality college women's gender strategies and homophobia." *Gender & Society* 21(2): 145-172.

Hammarstedt, Mats, Ali M. Ahmed and Lina Andersson. 2015. "Sexual prejudice and labor market outcomes for gays and lesbians: Evidence from Sweden." *Feminist Economics* 21(1): 90-109.

Hatzenbuehler, Mark L., Katie A. McLaughlin, Katherine M. Keyes and Deborah S. Hasin. 2010. "The impact of institutional discrimination on psychiatric disorders in lesbian, gay, and bisexual populations: A prospective study." *American Journal of Public Health* 100(3): 452-459.

Hatzenbuehler, Mark L., Conall O'Cleirigh, Chris Grasso, Kenneth Mayer, Steven Safren and Judith Bradford. 2012. "Effect of same-sex marriage laws on health care use and expenditures in sexual minority men: A quasi-natural experiment." *American Journal of Public Health* 102(2): 285-291.

Hatzenbuehler, Mark L., Anna Bellatorre, Yeonjin Lee, Brian K. Finch, Peter Muennig and Kevin Fiscella. 2014. "Structural stigma and all-cause mortality in sexual minority populations." *Social Science & Medicine* 103: 33-41.

Hayward, Rodney A. and Joel L. Weissfeld. 1993. "Coming to terms with the era of AIDS: Attitudes of physicians in U.S. residency programs." *Journal of General Internal Medicine* 8(1): 10-18.

Heckman, James J. 1998. "Detecting discrimination." *Journal of Economic Perspectives* 12(2): 101-116.

Heckman, James J. and Peter Siegelman. 1993. "The urban institute audit studies: Their methods and findings." Pp. 187-258. *In Clear and convincing evidence: Measurement of discrimination in America*, edited by Michael Fix and Raymond Struyk. The Urban Institute Press, Washington, D.C.

Heineck, Guido. 2009. "Sexual orientation and earnings: Evidence from the ISSP." *Applied Economics Letters* 16(13): 1351-1354.

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.

Herdt, Gilbert and Andrew Boxer. 1993. *Children of horizons: How gay and lesbian teens are leading a new way out of the closet*. Boston, MA: Beacon Press.

Herek, Gregory M. 1986. "On heterosexual masculinity: Some psychical consequences of the social construction of gender and sexuality." *American Behavioral Scientist* 29(5): 563-577.

Herek, Gregory M. 1988. "Heterosexuals' attitudes toward lesbians and gay men: Correlates and gender differences." *Journal of Sex Research* 25(4): 451-477.

Herek, Gregory M. 1992. ''The social context of hate crimes: Notes on cultural heterosexism.'' Pp. 89-104. *In Hate Crimes: Confronting Violence Against Lesbians and Gay Men*, edited by Gregory M. Herek and Kevin T. Berrill. Newbury Park, CA: Sage.

Herek, Gregory M. 2006. "Legal recognition of same-sex relationships in the United States." *American Psychologist* 61(6): 607-621.

Herman, Jody L., Andrew R. Flores, Taylor N.T. Brown, Bianca D.M. Wilson and Kerith J. Conron. 2017. "Age of individuals who identify as transgender in the United States." The Williams Institute.

Hill, Darryl B. and Brian L. B. Willoughby. 2005. "The development and validation of the genderism and transphobia Scale." *Sex Roles* 53(7): 531-544.

Hoogendoorn, Sander and Mirjam van Praag. 2012. "Ethnic diversity and team performance: a field experiment." IZA DP No. 6731.

Hooghe, Marc and Cecil Meeusen. 2013. "Is same-sex marriage legislation related to attitudes toward homosexuality? Trends in tolerance of homosexuality in European countries between 2002 and 2010." *Sexuality Research and Social Policy* 10(4): 258-268.

Huebner, David M., Gregory M. Rebchook and Susan M. Kegeles. 2004. "Experiences of harassment, discrimination, and physical violence among young gay and bisexual men." *American Journal of Public Health* 94(7): 1200-1203.

Humpert, Stefan. 2012. "Somewhere over the rainbow: Sexual orientation discrimination in Germany." University of Lüneburg Working Paper Series in Economics No. 245.

IGLYO. 2013. *The impact of homophobic and transphobic bullying on education and employment*.

ILGA. 2016a. *The ILGA-RIWI 2016 global attitudes survey on LGBTI people in partnership with LOGO*.

ILGA. 2016b. *The personal and the political: Attitudes to LGBTI people around the world*.

ILGA. 2016c. *State-sponsored homophobia: A world survey of sexual orientation laws.*

ILGA. 2016d. *Trans legal mapping report: Recognition before the law.*

ILGA Europe. 2014. *Good practices related to LGBTI asylum applicants in Europe*.

ILGA Europe. 2016. *Annual review of the human rights situation of Lesbian, Gay, Bisexual, Trans and Intersex people in Europe*.

Inglehart, Ronald and Christian Welzel. 2005. *Modernization, cultural change, and democracy : The human development sequence*. Cambridge University Press.

Jans, Matt, Joseph Viana, David Grant, Susan D. Cochran, Annie C. Lee and Ninez A. Ponce. 2015. "Trends in sexual orientation missing data over a decade of the California Health Interview Survey." *American Journal of Public Health* 105(5): e43-e50.

Jaspers, Eva and Ellen Verbakel. 2013. "The division of paid labor in same-sex couples in the Netherlands." *Sex Roles* 68(5): 335-348.

Jepsen, Christopher and Lisa K. Jepsen. 2009. "Does home ownership vary by sexual orientation?" *Regional Science and Urban Economics* 39(3): 307–315

Jepsen, Christopher and Lisa K. Jepsen. 2015. "Labor-market specialization within same-sex and difference-sex couples. *Industrial Relations: A Journal of Economy and Society* 54(1): 109-130.

Jepsen, Lisa K. 2007. "Comparing the earnings of cohabiting lesbians, cohabiting heterosexual women, and married women: Evidence from the 2000 Census." *Industrial Relations: A Journal of Economy and Society* 46(4): 699-727.

Jepsen, Lisa K. and Christopher A. Jepsen. 2002. "An empirical analysis of the matching patterns of same-sex and opposite-sex couples." *Demography* 39(3): 435-453.

Jones, David A. 1996. "Discrimination against same-sex couples in hotel reservation policies." *Journal of Homosexuality* 31(1-2): 153-159.

Jones, Tiffany, Andrea del Pozo de Bolger, Tinashe Dune, Amy Lykins and Gail Hawkes. 2015. *Female-to-Male (FtM) transgender people's experiences in Australia: A national Study*. Springer Publishing.

Jones, Tiffany, Bonnie Hart, Morgan Carpenter, Gavi Ansara, William Leonard, and Jayne Lucke. 2016. *Intersex: Stories and statistics from Australia*. Open Book Publishers

Jowell, Roger and Patricia Prescott-Clarke. 1970. "Racial discrimination and white-collar workers in Britain." *Race & Class* 11(4): 397-417.

Kalmijn, Matthijs, Anneke Loeve and Dorien Manting. 2007. "Income dynamics in couples and the dissolution of marriage and cohabitation." *Demography* 44(1): 159-179.

Kiecolt-Glaser, Janice K., Lynanne McGuire, Theodore F. Robles and Ronald Glaser. 2002. "Psychoneuroimmunology: Psychological influences on immune function and health." *Journal of Consulting and Clinical Psychology* 70(3): 537-547.

Kite, Mary E. and Kay Deaux. 1987. "Gender belief systems: Homosexuality and the implicit inversion theory." *Psychology of Women Quarterly* 11(1): 83-96.

Kite, Mary E. and Bernard E. Whitley. 1996. "Sex differences in attitudes toward homosexual persons, behaviors, and civil rights. A meta-analysis." *Personality and Social Psychology Bulletin* 22(4): 336-353.

Klawitter, Marieka 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.

Klawitter, Marieka M. 2008. "The effects of sexual orientation and marital status on how couples hold their money." *Review of Economics of the Household* 6(4): 423-446.

Klawitter, Marieka M. 2011. "Multilevel analysis of the effects of antidiscrimination policies on earnings by sexual orientation." *Journal of Policy Analysis and Management* 30(2): 334-358.

Klawitter, Marieka M. 2015. "Meta-analysis of the effects of sexual orientation on earnings." *Industrial Relations: A Journal of Economy and Society* 54(1): 4-32.

Kleven, Henrik Jacobsen, Camille Landais and Jakob Egholt Søgaard. 2017. Children and gender inequality: Evidence from Denmark. Unpublished manuscript.

Kosciw, Joseph G., Emily A. Greytak, Neal A. Palmer and Madelyn J. Boesen. 2014. "The 2013 national school climate survey: The experiences of lesbian, gay, bisexual and transgender youth in our nation's schools." New York: GLSEN.

Kreitzer, Rebecca J., Allison J. Hamilton and Caroline J. Tolbert. 2014. "Does policy adoption change opinions on minority rights? The effects of legalizing same-sex marriage." *Political Research Quarterly* 67(4): 795-808.

Kurdek, Lawrence A. 1998. "Relationship outcomes and their predictors: Longitudinal evidence from heterosexual married, gay cohabiting, and lesbian cohabiting couples." *Journal of Marriage and the Family* 60(3): 553-568.

Kurdek, Lawrence A. 2004. "Are gay and lesbian cohabiting couples really different from heterosexual married couples?" *Journal of Marriage and Family* 66(4): 880-900.

Kurdek, Lawrence A., Mark A. Fine and Ronald J. Sinclair. 1995. "School adjustment in sixth graders: Parenting transitions, family climate, and peer norm effects." *Child Development* 66(2): 430-445.

Lau, Charles Q. 2012. "The stability of same-sex cohabitation, different-sex cohabitation, and marriage." *Journal of Marriage and Family* 74(5): 973-988.

Laumann, Edward O., John H. Gagnon, Robert T. Michael and Stuart Michaels. 1994. *The social organization of sexuality: Sexual practices in the United States*. Chicago: University of Chicago Press.

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

Laurent, Thierry and Ferhat Mihoubi. 2016a. "The role of apparent sexual orientation in explaining the heterogeneity of wage penalties among gay employees." Pp 405-428. *In Sexual orientation and transgender issues in organizations: Global perspectives on LGBT workforce diversity*, edited by Thomas Köllen. Springer.

Laurent, Thierry and Ferhat Mihoubi. 2016b. "Sexual Orientation, Unemployment and Participation: Are Gays Less Employable than Straights?" Forthcoming in *Journal of Labor Research*.

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.

Lax, Jeffrey R., Justin H. Phillips and Alissa F. Stollwerk. 2016. "Are survey respondents lying about their support for same-sex marriage? Lessons from a list experiment." *Public Opinion Quarterly* 80(2): 510-533.

Layard, Richard, Andrew E. Clark, Francesca Cornaglia, Nattavudh Powdthavee and James Vernoit. 2014. "What predicts a successful life? A life-course model of well-being." *Economic Journal* 124: F720–F738.

Layte, Richard, Hannah McGee, Amanda Quail, Kay Rundle, Grainne Cousins, Claire Donnelly, Fiona Mulcahy and Ronan Conroy. 2006. "The Irish study of sexual health and relationships." Department of Health and Children.

Lee, Peter A., Christopher P. Houk, S. Faisal Ahmed and Ieuan A. Hughes. 2006. "Consensus Statement on Management of Intersex Disorders." *Pediatrics* 18(2): e488-e500.

Leppel, Karen. 2007a. "Home-ownership among opposite- and same-sex couples in the US." *Feminist Economics* 13(1): 1-30.

Leppel, Karen. 2007b. "Married and unmarried, opposite- and same-sex couples: A decomposition of homeownership differences." *Journal of Housing Research* 16(1): 61-81.

Leppel, Karen. 2009. "Labour force status and sexual orientation." *Economica* 76(301): 197-207.

Leppel, Karen. 2014. "Does job satisfaction vary with sexual orientation?" *Industrial Relations: A Journal of Economy and Society* 53(2): 169-198.

Levy Paluck, Elizabeth and Donald P. Green. 2009. "Prejudice reduction: What works? A review and assessment of research and practice." *Annual Review of Psychology* 60: 339-367.

Leppel, Karen and Suzanne Heller Clain. 2015. "Exploring job satisfaction by sexual orientation, gender, and marital status." *Eastern Economic Journal* 41(4): 547-570.

Li, Feng and Venky Nagar. 2012. "Diversity and performance." *Management Science* 59(3): 529-544.

Lofquist, Daphne A. and Jamie M. Lewis. 2015. "Improving measurement of same-sex couples." SEHSD Working Paper 2015-13.

Maccoby, Eleanor E. and Natahan Maccoby. 1954. "The interview: A tool of social science." Pp. 449-487. *In Handbook of Social Psychology,* edited by Gardner Lindze. Cambridge, MA: Addison Wesley.

MacInnis, Cara C. and Gordon Hodson. 2012. "Intergroup bias toward "Group X": Evidence of prejudice, dehumanization, avoidance, and discrimination against asexuals." *Group Processes & Intergroup Relations* 15(6): 725-743.

Mak, Winnie W.S., Cecilia Y.M. Poon, Loraine Y.K. Pun and Shu Fai Cheung. 2007. "Meta-analysis of stigma and mental health." *Social Science & Medicine* 65(2): 245-261.

Make the Road New York. 2010. *Transgender need not apply: A report on gender identity job discrimination*.

Manning, Wendy D., Marshal Neal Fettro and Esther Lamidi. 2014. "Child well-being in same-sex parent families: Review of research prepared for American Sociological Association Amicus Brief." *Population Research and Policy Review* 33(4): 485-502.

Manning, Wendy D., Susan L. Brown and J. Bart Stykes. 2016. "Same-sex and different-sex cohabiting couple relationship stability." *Demography* 53(4): 937-953.

Martell, Michael E. 2013a. "Differences Do Not Matter: Exploring the Wage Gap for Same-Sex Behaving Men." *Eastern Economic Journal* 39(1): 45-71.

Martell, Michael E. 2013b. "Do ENDAs End Discrimination for Behaviorally Gay Men?" *Journal of Labor Research* 34(2): 147-69.

Mays, Vickie M. and Susan D. Cochran. 2001. "Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States." *American Journal of Public Health* 91(11): 1869-1876.

McNeilly, Maya Dominguez , Elwood L. Robinson, Norman B. Anderson, Carl F. Pieper, Akbar Shah, Paul S. Toth, Pamela Martin, Dreama Jackson, Terrence D. Saulter, Cynthia White, Magaratha Kuchibatla, Shirley M. Collado and William Gerin. 1995. "Effects of racist provocation and social support on cardiovascular reactivity in African American women." *International Journal of Behavioral Medicine* 2(4): 321-338.

Merritt, Marcellus M, Gary G Bennett, Redford B Williams, Christopher L Edwards and John J Sollers. 2006. "Perceived racism and cardiovascular reactivity and recovery to personally relevant stress." *Health Psychology* 25(3): 364-369.

Meyer, Ilan H. 1995. "Minority stress and mental health in gay men." *Journal of Health and Social Behavior* 36(1): 38-56.

Meyer, Ilan H. 2003. "Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence." *Psychological Bulletin* 129(5): 674-697.

Mickelson, Roslyn Arlin. 2003. "Gender, Bourdieu, and the anomaly of women's achievement redux." *Sociology of Education* 76(4): 373-375.

Milgram, Stanley, Leon Mann and Susan Harter. 1965. "The lost-letter technique: A tool of social research." *Public Opinion Quarterly* 29(3): 437-438.

Mitu, Khadija. 2016. "Transgender reproductive choice and fertility preservation." *AMA Journal of Ethics* 18(11): 1119-1125.

Morris, Edward M. 2005. "'Tuck in that shirt!' race, class, gender and discipline in an urban school." *Sociological Perspectives* 48(1): 25-48.

Morris, Edward M. 2008. "'Rednecks,' 'rutters,' and 'rithmetic: Social class, masculinity, and schooling in a rural context." *Gender & Society* 22(6): 728-751.

Morris, Edward M. 2012. *Learning the hard way: Masculinity, place, and the gender gap in education*. New Brunswick, NJ: Rutgers University Press.

Negrusa, Brighita and Sonia Oreffice. 2011. "Sexual orientation and household financial decisions: evidence from couples in the United States." *Review of Economics of the Household* 9(4): 445-463.

Neumark, David. 2012. "Detecting discrimination in audit and correspondence studies". *Journal of Human Resources* 47(4): 1128-1157.

Nierman, Angela J., Suzanne C. Thompson, Angela Bryan and Amanda L. Mahaffey. 2007. "Gender role beliefs and attitudes toward lesbians and gay men in Chile and the U.S." *Sex Roles* 57(1): 61-67.

Norton, Aaron T. and Gregory M. Herek. 2013. "Heterosexuals' attitudes toward transgender people: Findings from a national probability sample of U.S. adults." *Sex Roles* 68(11): 738-753.

Oaxaca, Ronald L. 1973. "Male-female wage differentials in urban labor markets." *International Economic Review* 14(3): 693-709.

OECD. 2017. *Dare to share: Gemany's experience promoting equal partnership in families*.
DOI: http://dx.doi.org/10.1787/9789264259157-en

Office of National Statistics. 2008. *Developing survey questions on sexual identity: Rationale and design of sexual identity questioning on the integrated household survey*.

Ohlander, Julianne, Jeanne Batalova and Judith Treas. 2005. "Explaining educational influences on attitudes toward homosexual relations." *Social Science Research* 34(4): 781-799.

Orr, Amy J. 2011. "Gendered capital: Childhood socialization and the "boy crisis" in education." *Sex Roles* 65(3-4): 271-284.

Ortiz-Hernandez, Luis, Blanco Lilia Gomez Tello and Jesus Valdes. 2009. "The association of sexual orientation with self-rated health, and cigarette and alcohol use in Mexican adolescents and youths." *Social Science & Medicine* 69(1): 85-93.

Osborne, Cynthia and Sara McLanahan. 2007. "Partnership instability and child well-being." *Journal of Marriage and Family* 69(4): 1065-1083.

Oswalt Sarah B. and Tammy J. Wyatt. 2011. "Sexual orientation and differences in mental health, stress, and academic performance in a national sample of U.S. college students." *Journal of Homosexuality* 58(9): 1255-1280.

Ozeren, Emir. 2014. "Sexual orientation discrimination in the workplace: A systematic review of literature." *Procedia - Social and Behavioral Sciences* 109(8): 1203-1215.

Pascoe, C. J. 2007. *Dude, you're a fag: Masculinity and sexuality in high school*. Berkeley, CA: University of California Press.

Pascoe, Elizabeth A. and Laura Smart Richman. 2009. "Perceived discrimination and health: A meta-analytic review." *Psychological Bulletin* 135(4): 531-554.

Pathela, Preeti, Anjum Hajat, Julia Schillinger, Susan Blank, Randall Sell and Farzad Mostashari. 2006. "Discordance between sexual behavior and self-reported sexual identity: A population-based survey of New York city men." *Annals of Internal Medicine* 145(6): 416-425.

Patacchini, Eleonora, Giuseppe Ragusa and Yves Zenou. 2015. "Unexplored dimensions of discrimination in Europe: Homosexuality and physical appearance." *Journal of Population Economics* 28(4): 1045-1073.

Pavalko, Eliza K., Krysia N. Mossakowski and Vanessa J. Hamilton. 2003. "Does perceived discrimination affect health? Longitudinal relationships between work discrimination and women's physical and emotional health." *Journal of Health and Social Behavior* 44(1): 18-33.

Pega, Franck, Alistair Gray and Jaimie Veale. 2010. "Sexual orientation data in probability surveys: improving data quality and estimating core population measures from existing New Zealand survey data." *Official Statistics Research Series* 2010-2.

Pearson, Jennifer, Chandra Muller and Lindsey Wilkinson. 2007. "Adolescent same-sex attraction and academic outcomes: The role of school attachment and engagement." *Social Problems* 54(4): 524-542.

Pearson, Jennifer and Lindsey Wilkinson. 2016. "Same-sex sexuality and educational attainment: The pathway to college." Forthcoming in *Journal of Homosexuality*.

Perales, Francisco. 2016. "The costs of being 'different': Sexual identity and subjective well-being over the life course." *Social Indicators Research* 127(2): 827-849.

Pereira, Annelyse, Maria Benedicta Monteiro and Leoncio Camino. 2009. "Social norms and prejudice against homosexuals." *Spanish Journal of Psychology* 12(2): 576-584.

Pew Research Center. 2010. *The future of the global Muslim population*.

Pew Research Center. 2013. *A survey of LGBT Americans. Attitudes, experiences and values in changing times*.

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.

Plug, Erik, Dinand Webbink and Nick Martin. 2014. "Sexual orientation, prejudice, and segregation." *Journal of Labor Economics* 32(1): 123-159.

Ponce, Ninez A., Susan D. Cochran, Jennifer C. Pizer and Vickie M. Mays. 2010. "The effects of unequal access to health insurance for same-sex couples in California." *Health Affairs* 29(8): 1539-1548.

Potter, Daniel. 2012. "Same-sex parent families and children's academic achievement." *Journal of Marriage and Family* 74(3): 556-571.

Pouwer, Frans, Nina Kupper and Marcel C. Adriaanse 2010. "Does emotional stress cause type 2 diabetes mellitus? A review from the European Depression in Diabetes (EDID) Research Consortium." *Discovery Medicine* 9(45): 112-118.

Powdthavee, Nattavudh and Mark Wooden. 2015. "Life satisfaction and sexual minorities: Evidence from Australia and the United Kingdom." *Journal of Economic Behavior and Organization* 116: 107-126.

Powell, Richard J. 2013. "Social desirability bias in polling on same-sex marriage ballot measures." *American Politics Research* 41(6): 1052-1070.

Prickett, Kate C., Alexa Martin-Storey and Robert Crosnoe. 2015. "A research note on time with children in different- and same-sex two-parent families." *Demography* 52(3): 905-918.

Pride in Diversity and OII Australia. 2014. *Employers' guide to intersex inclusion.*

Quinn, Gwendolyn P., Matthew B. Schabath, Julian Sanchez, Steven K. Sutton and B. Lee Green. 2015. "The importance of disclosure: Lesbian, gay, bisexual, transgender/transsexual, queer/questioning, intersex (LGBTQI) individuals and the cancer continuum." *Cancer* 121(8): 1160-1163.

Raifman, Julia, Ellen Moscoe, S. Bryn Austin and Margaret McConnell. 2017. "Difference-in-differences analysis of the association between state same-sex marriage policies and adolescent suicide attempts." Forthcoming in *JAMA Pediatrics*.

Reczek, Corinne, Russell Spiker, Hui Liu and Robert Crosnoe. 2016. "Family structure and child health: Does the sex composition of parents matter?" *Demography* 53(5): 1605-1630.

Reisner, Sari L., Tonia Poteat, JoAnne Keatley, Mauro Cabral, Tampose Mothopeng, Emilia Dunham, Claire E. Holland, Ryan Max and Stefan D. Baral. 2016. "Global health burden and needs of transgender populations: A review." *The Lancet* 388(10042): 421-436.

Rew, Lynn, Rachel T. Fouladi and Ronald D. Yockey. 2002. "Sexual health practices of homeless youth." *Journal of Nursing Scholarship* 34(2): 139-145.

Riach, Peter A. and Judith Rich. 2004. "Deceptive field experiments of discrimination: are they ethical?" *Kyklos* 57(3): 457-470.

Rich, Alisa L., Laura M. Phipps, Sweta Tiwari, Hemanth Rudraraju and Philip O. Dokpesi. 2016. "The increasing prevalence in intersex variation from toxicological dysregulation in fetal reproductive tissue differentiation and development by endocrine-disrupting chemicals." *Environmental Health Insights* 10: 163-171.

Richters, Juliet, Dennis Altman, Paul B. Badcock, Anthony M. A. Smith, Richard O. de Visser, Andrew E. Grulich, Chris Rissel and Judy M. Simpson. 2014. "Sexual identity, sexual attraction and sexual experience: The Second Australian Study of Health and Relationships." *Sexual Health* 11(5): 451-460.

Riggle, Ellen D. B., Sharon S. Rostosky and Sharon G. Horne. 2010. "Psychological distress, well-being, and legal recognition in same-sex couple relationships." *Journal of Family Psychology* 24(1): 82-86.

Robinson, Joseph P. and Dorothy L. Espelage. 2011. "Inequities in educational and psychological outcomes between LGBTQ and straight students in middle and high school." *Educational Researcher* 40(7): 315-330.

Roelandt, Hanne, Alexis Dewaele, Ann Buysse and Mieke Van Houtte. 2016. "The SOGIE minorities' societal positioning index." Ghent University in association with the Ministry of Education, Culture and Science of the Netherlands.

Rooth, Dan-Olof. 2014. "Correspondence testing studies. What can we learn about discrimination in hiring?" *IZA World of Labor*.

Rosario, Margaret, Heather L. Corliss, Bethany G. Everett, Sari L. Reisner, S. Bryn Austin, Francisco O. Buchting and Michelle Birkett. 2014. "Sexual orientation disparities in cancer-related risk behaviors of tobacco, alcohol, sexual behaviors, and diet and physical activity: Pooled youth risk behavior surveys." *American Journal of Public Health* 104(2): 245-254.

Rosenfeld, Michael J. and Byung-Soo Kim. 2005. "The independence of young adults and the rise of interracial and same-sex unions." *American Sociological Review* 70(4): 541-562.

Rosenfeld, Michael J. 2010. "Nontraditional families and childhood progress through school." *Demography* 47(3): 755-775.

Rosenfeld, Michael J. 2014. "Couple longevity in the era of same-sex marriage in the United States." *Journal of Marriage and Family* 76(5): 905-918.

Rosenfeld, Michael J. 2015. "Revisiting the data from the new family structure study: Taking family instability into account." *Sociological Science* 2: 478-501.

Ross, Helen, Karen Gask and Ann Berrington. 2011. "Civil partnerships five years on." *Population Trends* 145(1): 172-202.

Rosser, B.R. Simon, Enyinnaya Merengwa, Benjamin D. Capistrant, Alex Iantaffi, Gunna Kilian, Nidhi Kohli, Badrinath R. Konety, Darryl Mitteldorf and William West. 2016. "Prostate cancer in gay, bisexual, and other men who have sex with men: A review." *LGBT Health* 3(1): 32-41.

Rothblum, Esther D., Kimberly F. Balsam and Ruth M. Mickey. 2004. "Brothers and sisters of lesbians, gay men, and sisexuals as a demographic comparison group. An innovative research methodology to examine social change." *Journal of Applied Behavioral Science* 40(3): 283-301.

Russell, Stephen T., Hinda Seif and Nhan L. Truong. 2001. "School outcomes of sexual minority youth in the United States: Evidence from a national study." *Journal of Adolescence* 24(1): 111-127.

Russell Stephen T., Caitlin Ryan, Russell B. Toomey, Rafael M. Diaz and Jorge Sanchez. 2011. "Lesbian, gay, bisexual, and transgender adolescent school victimization: Implications for young adult health and adjustment." *Journal of School Health* 81(5): 223-230.

Sabia, Joseph J. 2014. "Sexual orientation and wages in young adulthood: New evidence from Add Health." *Industrial and Labor Relations Review* 67(1): 239-267.

Sabia, Joseph J. and Mark Wooden. 2015. "Sexual identity, earnings, and labour market dynamics: New evidence from longitudinal data in Australia." IZA DP No. 8935.

Sabin, Janice A., Rachel G. Riskind and Brian A. Nosek. "Health care providers' implicit and explicit attitudes toward lesbian women and gay men." *American Journal of Public Health* 105(9): 1831-1841.

Saewyc, Elizabeth M., Greta R. Bauer, Carol L. Skay, Linda H. Bearinger, Michael D. Resnick, Elizabeth Reis and Aileen Murphy. 2004. "Measuring sexual orientation in adolescent health surveys: Evaluation of eight school-based surveys." *Journal of Adolescent Health* 35(4): 345.e1-345.e15.

Scarpetta, Stefano. 2014. "Employment protection." *IZA World of Labor*.

Schilt, Kristen and Matthew Wiswall. 2008. "Before and after: Gender transitions, human capital, and workplace experiences." *The BE Journal of Economic Analysis & Policy* 8(1): article 39.

Sedlovskaya, Alexandra, Valerie Purdie-Vaughns, Richard P. Eibach, Marianne LaFrance, Rainer Romero-Canyas and Nicholas P. Camp. 2013. "Internalizing the closet: concealment heightens the cognitive distinction between public and private selves." *Journal of Personality and Social Psychology* 104(4): 695-715.

Sell, Randall L. 1997. "Defining and measuring sexual orientation: A review." *Archives of Sexual Behavior* 26(6): 643-658.

Seto, Michael C. 2012. "Is pedophilia a sexual orientation?" *Archives of Sexual Behavior* 41(1): 231-236.

Shaw, Jerry I., Hans W. Borough and Mathew I. Fink .1994. "Perceived sexual orientation and helping behavior by males and females: The wrong-number technique." *Journal of Psychology and Human Sexuality* 6(3): 73-81.

Smith, Tom W. 2011. "Cross-national differences in attitudes towards homosexuality. " NORC at the University of Chicago.

Smith, Elizabeth, Tiffany Jones, Roz Ward, Jennifer Dixon, Anne Mitchell and Lynne Hillier. 2014. "From blues to rainbows: The mental health and well-being of gender diverse and transgender young people in Australia." Melbourne: Australian Research Centre in Sex Health and Society.

Smith, Tom W., Jaseok Son and Jibum Kim. 2014. "Public attitudes towards homosexuality and gay rights across time and countries." NORC at the University of Chicago and The Williams Institute.

Soubelet, Andrea and Timothy A. Salthouse. 2011. "Influence of social desirability on age differences in self-reports of mood and personality." *Journal of Personality* 79(4): 741-762.

Steffens, Melanie C., Kai J. Jonas and Lisa Denger. 2015. "Male role endorsement explains negative attitudes toward lesbians and gay men among students in Mexico more than in Germany." *Journal of Sex Research* 52(8): 898-911.

Storms, Michael D., Margaret L. Stivers, Scott M. Lambers and Craig A. Hill. 1981. "Sexual scripts for women." *Sex Roles* 7(7): 699-707.

Stotzer, Rebecca L. 2010. "Sexual orientation-based hate crimes on campus: The impact of policy on reporting rates." *Sexuality Research and Social Policy* 7(3): 147-154.

Takacs, Judit, Ivett Szalma and Tamas Bartus. 2016. "Social attitudes toward adoption by same-sex couples in Europe." *Archives of Sexual Behavior* 45(7): 1787-1798.

Tampep. 2009. *Sex work in Europe. A mapping of the prostitution scene in 25 European Countries*. Amsterdam.

Tankard, Margaret E. and Elizabeth Levy Paluck. 2016a. "Norm perception as a vehicle for social change." *Social Issues and Policy Review* 10(1): 181-211.

Tankard, Margaret E. and Elizabeth Levy Paluck. 2016b. "The effect of a supreme court decision on social norms and personal attitudes regarding gay marriage." Unpublished manuscript.

Tebaldi, Edinaldo and Bruce Elmslie. 2006. "Sexual orientation and labour supply." *Applied Economics* 38(5): 549-562.

The Williams Institute. 2009. *Best practices for asking questions about sexual orientation on surveys*.

The Williams Institute. 2014. *Best practices for asking questions to identify transgender and other gender minority respondents on population-based surveys.*

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

Tolman, Deborah L. 2002. *Dilemmas of desire: Teenage girls and sexuality*. Cambridge, MA: Harvard University Press.

Tsang, Ellen. 1994. "Investigating the effect of race and apparent lesbianism upon helping behavior." *Feminism and Psychology* 4(3): 469-471.

Turner, Margery, Michael Fix and Raymond Struyk. 1991. *Opportunities denied, opportunities diminished: racial discrimination in hiring*. Washington, DC: Urban Institute Press.

Ueno, Koji, Teresa Roach and Abraham E. Pena-Talamantes. 2013. "Sexual orientation and gender typicality of the occupation in young adulthood." *Social Forces* 92(1): 81-108.

Uhrig, S.C. Noah. 2015. "Sexual orientation and poverty in the UK: A review and top-line findings from the UK Household Longitudinal Study." *Journal of Research in Gender Studies* 5(1): 23-72.

UNESCO. 2016. *Out in the open*.

UNHCR. 2008. *UNHCR guidance note on refugee claims relating to sexual orientation and gender identity*.

UNHCR. 2015. *Protecting persons with diverse sexual orientations and gender identities. A global report on UNHCR's efforts to protect Lesbian, Gay, Bisexual, Transgender, and Intersex asylum-seekers and refugees*.

United Nations Human Rights (Office of the High Commissioner). 2012. *Born free and equal. Sexual orientation and gender identity in international human rights law*.

US National Center for Transgender Equality. 2016. *The report of the 2015 US Transgender Survey*.

van Lisdonk, Jantine. 2014. "Living with intersex/dsd. An exploratory study of the social situation of persons with intersex/dsd." Netherlands Institute for Social Research.

Veenstra, Gerry. 2011. "Race, gender, class, and sexual orientation: Intersecting axes of inequality and self-rated health in Canada." *International Journal for Equity in Health* 10(3): 1-11.

Waaldijk, Kees 1994. "Standard sequences in the legal recognition of homosexuality: Europe's past, present and future." *Australasian Gay & Lesbian Law Journal* 4: 50-72.

Waite, Sean and Nicole Denier. 2015. "Gay pay for straight work: Mechanisms generating disadvantage." *Gender & Society* 29(4): 561-588.

Walsemann, Katrina M., Lisa L. Lindley, Danielle Gentile and Shehan V. Welihindha. 2014. "Educational attainment by life course sexual attraction: Prevalence and correlates in a nationally representative sample of young adults." *Population Research and Policy Review* 33(4): 579-602.

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, Brian W., James M. Dahlhamer, Adena M. Galinsky and Sarah S. Joestl. 2014. "Sexual irientation and health among U.S. adults: National Health Interview Survey, 2013." *National Health Statistics Reports* 77: 1-10.

Warne, Garry, Sonia R. Grover, John Hutson, Andrew Sinclair, Sylvia Metcalfe, Elisabeth Northam and Justin Freeman. 2005. "A long-term outcome study of intersex conditions." *Journal of Pediatric Endocrinology & Metabolism* 18(6): 555-567 ·

Weichselbaumer, Doris. 2003. "Sexual orientation discrimination in hiring." *Labour Economics* 10(6): 629-642.

Weichselbaumer, Doris. 2015. "Testing for discrimination against lesbians of different marital status: A field experiment." *Industrial Relations: A Journal of Economy and Society* 54(1): 131-161.

Weinberger, Linda E. and Jim Millham. 1979. "Attitudinal homophobia and support of traditional sex roles." *Journal of Homosexuality* 4(3): 237-246.

Zavodny, Madeline. 2008. "Is there a "marriage premium" for gay men?" *Review of Economics of the Household* 6(4): 369-389.

# Annex

**Annex Table A1. Summary of studies using couples-based data to test for an employment and/or labour supply gap between homosexuals and heterosexuals, as of 2016**

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women |
| **EMPLOYMENT GAP** | | | | | | | | | |
| **FRANCE** | 1. 1996-2009 French Labour Force Survey (midpoint: 2002-2003) | Laurent and Mihoubi (2016b, *Journal of Labor Research*) | **Homosexuals:** unmarried individuals who report living both (i) in a two-person household; (ii) with a same-sex *friend* (information on same-sex partner not collected before 2003) **Heterosexuals**: (married or unmarried) individuals who report living with an opposite-sex partner | Men between 28 and 60 (non-French people as well as couples where one member is a student, apprentice, farmer or retired person excluded from the analysis) | **Homosexuals:** N=409 **Heterosexuals:** N=106,342 | Not studied | Whether the respondent is employed | -1.5%** | Not studied |
| **SWEDEN** | 2. 2007 LISA database at Statistics Sweden | Hammarstedt, Ahmed and Andersson (2015, *Feminist Economics*) | **Homosexuals:** individuals living with a same sex partner in a civil union **Heterosexuals**: married individuals living with an opposite-sex partner | Men and women between 25 and 64 | **Homosexuals:** N=1,972 **Heterosexuals:** N=1,043,141 | **Homosexuals:** N=1,943 **Heterosexuals:** N=1,116,048 | Whether the respondent is employed | -7%*** | +1% |

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women |
| **EMPLOYMENT GAP** | | | | | | | | | |
| **US** | 3. 2000 Census | Antecol and Steinberger (2013, *Economic Inquiry*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner<br>**Heterosexuals:** married individuals who report living with an opposite-sex partner | Women between 25 and 54 who are non-Hispanic White and who have a non-Hispanic White partner | Not studied | **Homosexuals:** N=6,502<br>**Heterosexuals:** N=965,469 | Whether the respondent is employed | Not studied | +14% (unknown stat sig)<br><br>(results obtained from a "DiNardo, Fortin, and Lemieux" decomposition and amounting to the "unexplained" gap once the following variables have been controlled for: education, age, presence of children in the household, respondent's and partner's hourly wage, non wage income, urban/rural status and regional fixed effects) |
| | 4. 2000 Census | Leppel (2009, *Economica*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner<br>**Heterosexuals 1:** married individuals who report living with an opposite-sex partner<br>**Heterosexuals 2:** unmarried individuals who report living with an opposite-sex partner | Men and women between 25 and 54 | **Homosexuals:** N=18,778<br>**Heterosexuals 1:** N=100,000<br>**Heterosexuals 2**: N=100,000 | **Homosexuals:** N=20,154<br>**Heterosexuals 1:** N=100,000<br>**Heterosexuals 2**: N=100,000 | Whether the respondent is employed | -5% (unknown stat sig)<br>(homo vs hetero 1)<br><br>-1% (unknown stat sig)<br>(homo vs hetero 2)<br><br>(results for Caucasian, non-Hispanic, 40-year-old with no children under 5. The person has $5000 in non-wage income; a partner with total income of $35,000; a service occupation; does not have a disability, and lives in a metropolitan area in a southern state without a law prohibiting employment discrimination on the basis of sexual orientation) | +4% (unknown stat sig)<br>(homo vs hetero 1)<br><br>+7% (unknown stat sig)<br>(homo vs hetero 2)<br><br>(results for Caucasian, non-Hispanic, 40-year-old with no children under 5. The person has $5000 in non-wage income; a partner with total income of $35,000; a service occupation; does not have a disability, and lives in a metropolitan area in a southern state without a law prohibiting employment discrimination on the basis of sexual orientation) |
| | 5. 2001 Current Population Survey (CPS) | Tebaldi and Elmslie (2006, *Applied Economics*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner (N=1,656)<br>**Heterosexuals 1:** married individuals who report living with an opposite-sex partner (N=3,609)<br>**Heterosexuals 2:** unmarried individuals who report living with an opposite-sex partner (N=37,192) | Men and women between 25 and 55 | Not reported | Not reported | Whether the respondent is employed | -1%<br>(homo vs hetero 1)<br><br>+1% (unknown stat sig)<br>(homo vs hetero 2)<br><br>(results for individuals who do not have children and who did not experience unemployment in the past) | +13%***<br>(homo vs hetero 1)<br><br>+8% (unknown stat sig)<br>(homo vs hetero 2)<br><br>(results for individuals who do not have children and who did not experience unemployment in the past) |



For Official Use

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women |
| **LABOUR SUPPLY GAP** | | | | | | | | | |
| US | 1. 2000 Census | Antecol and Steinberger (2013, *Economic Inquiry*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner<br>**Heterosexuals:** married individuals who report living with an opposite-sex partner | Women between 25 and 54 who are non-Hispanic White and who have a non-Hispanic White partner. | Not studied | **Homosexuals:** N=6,502<br>**Heterosexuals:** N=965,469 | Number of hours worked per year | Not studied | +29% (unknown stat sig)<br><br>(results obtained from a "DiNardo, Fortin, and Lemieux" decomposition and amounting to the "unexplained" gap once the following variables have been controlled for: education, age, presence of children in the household, respondent's and partner's hourly wage, non wage income, urban/rural status and regional fixed effects) |
| | 2. 2001 Current Population Survey (CPS) | Tebaldi and Elmslie (2006, *Applied Economics*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner (N=1,656)<br>**Heterosexuals 1:** married individuals who report living with an opposite-sex partner (N=3,609)<br>**Heterosexuals 2:** unmarried individuals who report living with an opposite-sex partner (N=37,192) | Men and women between 25 and 55 | Not reported | Not reported | Number of hours worked per week | -8%***<br>(homo vs hetero 1)<br><br>-6% (unknown stat sig)<br>(homo vs hetero 2)<br><br>(results for individuals who do not have children and who did not experience unemployment in the past) | +7%***<br>(homo vs hetero 1)<br><br>+3% (unknown stat sig)<br>(homo vs hetero 2)<br><br>(results for individuals who do not have children and who did not experience unemployment in the past) |

*Source*: Author's calculation. *, ** and *** indicate statistical significance at the 90%, 95% and 99% confidence levels.

## Annex Table A2. Summary of studies using individuals-based data to test for an employment and/or labour supply gap between homosexuals and heterosexuals, as of 2016

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals (the "first best" option to solve the household specialization bias)? | If "no" to the previous question, is the partnership status of both homosexuals and heterosexuals controlled for (the "second best" option to solve the household specialization bias)? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| **EMPLOYMENT GAP** | | | | | | | | | | | |
| **AUSTRALIA** | 1. 2012 Household, Income and Labour Dynamics in Australia (HILDA) Survey | Sabia and Wooden (2015, unpublished manuscript) | **Homosexuals:** individuals who self-identify as "gay or lesbian"<br>**Heterosexuals:** individuals who self-identify as "heterosexuals or straight" | Men and women between 18 and 64 | **Homosexuals:** N=83<br>**Heterosexuals:** N=4,387 | **Homosexuals**: N=81<br>**Heterosexuals:** N=5,148 | Whether the respondent is employed | -14.5%** | +6% | NO | NO |
| **CANADA** | 2. 2003 and 2005 Canadian Community Health Survey (midpoint: 2004) | Carpenter (2008a, *Canadian Journal of Economics*) | **Homosexuals:** individuals who self-identify as "homosexual"<br>**Heterosexuals:** individuals who self-identify as "heterosexual" | Men and women between 18 and 55 | **Homosexuals:** N=1,017<br>**Heterosexuals:** N=65,840 | **Homosexuals:** N=657<br>**Heterosexuals:** N=74,800 | Whether the respondent is a full-time worker | -2% | +11%*** | NO | YES (control for an indicator for being either married legally or in a *de facto* relationship) |
| **UK** | 3. 2012-2014 UK Integrated Household Surveys (IHS) (midpoint: 2013) | Aksoy, Carpenter and Frank (2016, *Industrial and Labor Relations Review*) | **Homosexuals 1:** individuals who self-identify as "gay" or "lesbian"<br>**Homosexuals 2:** individuals who self-identify as "gay" or "lesbian" and who report being partnered<br>**Homosexuals 3:** individuals who self-identify as "gay" or "lesbian" and who report being non-partnered<br>**Heterosexuals 1:** individuals who self-identify as "heterosexual"<br>**Heterosexuals 2:** individuals who self-identify as "heterosexual" and who report being partnered<br>**Heterosexuals 3:** individuals who self-identify as "heterosexual" and who report being non-partnered | Men and women above 25 | **Homosexuals 1:** N=1,220<br>**Homosexuals 2:** N=unknown<br>**Homosexuals 3:** N=unknown<br>**Heterosexuals 1**: N=73,318<br>**Heterosexuals 2:** N=unknown<br>**Heterosexuals 3:** N=unknown | **Homosexuals 1:** N=839<br>**Homosexuals 2:** N=unknown<br>**Homosexuals 3:** N=unknown<br>**Heterosexuals 1**: N=94,810<br>**Heterosexuals 2:** N=unknown<br>**Heterosexuals 3:** N=unknown | Whether the respondent is a full-time worker | -5%*** (homo 1 vs hetero 1)<br>-7%*** (homo 2 vs hetero 2)<br>-1% (homo 3 vs hetero 3) | +14.5%*** (homo 1 vs hetero 1)<br>+27%*** (homo 2 vs hetero 2)<br>-9%* (homo 3 vs hetero 3) | YES (control for an indicator for being either married legally or in a *de facto* relationship for the "homo 1 vs hetero 1" comparison, and separate analysis for partnered and non-partnered individuals in the other comparisons) | |
| **US** | 4. 2007 National Longitudinal Study of Adolescent Health (Add Health) | Sabia (2014, *Industrial and Labor Relations Review*) | **Homosexuals:** individuals who self-identify as "100% homosexual"<br>**Heterosexals:** individuals who self-identify as "100% heterosexual" | Men and women between 26 and 34 | **Homosexuals:** N=132<br>**Heterosexuals**: N=6,783 | **Homosexuals:** N=77<br>**Heterosexuals**: N=6,164 | Whether the respondent is employed | +3% | -1% | NO | YES (control for an indicator for being in (or having experienced) a live-in romantic relationship) |



For Official Use

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals (the "first best" option to solve the household specialization bias)? | If "no" to the previous question, is the partnership status of both homosexuals and heterosexuals controlled for (the "second best" option to solve the household specialization bias)? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| **LABOUR SUPPLY GAP** | | | | | | | | | | | |
| **AUSTRALIA** | 1. 2012 Household, Income and Labour Dynamics in Australia (HILDA) Survey | Sabia and Wooden (2015, unpublished manuscript) | **Homosexuals:** individuals who self-identify as "gay or lesbian"<br>**Heterosexuals:** individuals who self-identify as "heterosexuals or straight" | Men and women between 18 and 64 | **Homosexuals:** N=83<br>**Heterosexuals:** N=4,387 | **Homosexuals**: N=81<br>**Heterosexuals:** N=5,148 | Number of hours worked per week | +1% | +19%*** | NO | NO |
| **CANADA** | 2. 2003 and 2005 Canadian Community Health Survey (midpoint: 2004) | Carpenter (2008a, *Canadian Journal of Economics*) | **Homosexuals:** individuals who self-identify as "homosexual"<br>**Heterosexuals:** individuals who self-identify as "heterosexual" | Men and women between 18 and 55 | **Homosexuals:** N=1,017<br>**Heterosexuals:** N=65,840 | **Homosexuals:** N=657<br>**Heterosexuals:** N=74,800 | Number of hours worked per week | -4%*** | +7.5%** | NO | YES (control for an indicator for being either married legally or in a *de facto* relationship) |

*Source*: Author's calculation. *, ** and *** indicate statistical significance at the 90%, 95% and 99% confidence levels.

## Annex Table A3. Summary of studies using individuals-based data to test for an employment and/or labour supply gap between bisexuals and heterosexuals, as of 2016

| Country | Survey | Study | Definition of bisexuals/ heterosexuals | Sample description | Sample size (bisexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Bisexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals? | If "no" to the previous question, is the partnership status of both bisexuals and heterosexuals controlled for? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| **EMPLOYMENT GAP** | | | | | | | | | | | |
| **AUSTRALIA** | 1. 2012 Household, Income and Labour Dynamics in Australia (HILDA) Survey | Sabia and Wooden (2015, unpublished manuscript) | **Bisexuals:** individuals who self-identify as "bisexual"<br>**Heterosexuals:** individuals who self-identify as "heterosexuals or straight" | Men and women between 18 and 64 | **Bisexuals:** N=43<br>**Heterosexuals:** N=4,387 | **Bisexuals**: N=107<br>**Heterosexuals:** N=5,148 | Whether the respondent is employed | +5.5% | -13%* | NO | NO |
| **UK** | 2. 2012-2014 UK Integrated Household Surveys (IHS) | Aksoy, Carpenter and Frank (2016, *Industrial and Labor Relations Review*) | **Bisexuals 1:** individuals who self-identify as "bisexual"<br>**Bisexuals 2:** individuals who self-identify as "bisexual" and who report being partnered<br>**Bisexuals 3:** individuals who self-identify as "bisexual" and who report being non-partnered<br>**Heterosexuals 1:** individuals who self-identify as "heterosexual"<br>**Heterosexuals 2:** individuals who self-identify as "heterosexual" and who report being partnered<br>**Heterosexuals 3:** individuals who self-identify as "heterosexual" and who report being non-partnered | Men and women above 25 | **Bisexuals 1:** N=176<br>**Bisexuals 2:** N=unknown<br>**Bisexuals 3:** N=unknown<br>**Heterosexuals 1**: N=73,318<br>**Heterosexuals 2:** N=unknown<br>**Heterosexuals 3:** N=unknown | **Bisexuals 1:** N=429<br>**Bisexuals 2:** N=unknown<br>**Bisexuals 3:** N=unknown<br>**Heterosexuals 1**: N=94,810<br>**Heterosexuals 2:** N=unknown<br>**Heterosexuals 3:** N=unknown | Whether the respondent is a full-time worker | -13%***<br>(bi 1 vs hetero 1)<br>-3%<br>(bi 2 vs hetero 2)<br>-13%***<br>(bi 3 vs hetero 3) | -10%***<br>(bi 1 vs hetero 1)<br>-2.5%<br>(bi 2 vs hetero 2)<br>-26%***<br>(bi 3 vs hetero 3) | YES<br>(control for an indicator for being either married legally or in a *de facto* relationship for the "bi 1 vs hetero 1" comparison and separate analysis for partnered and non-partnered individuals in the other comparisons) | YES |
| **US** | 3. 2007 National Longitudinal Study of Adolescent Health (Add Health) | Sabia (2014, *Industrial and Labor Relations Review*) | **Bisexuals:** individuals who self-identify as "mostly heterosexual", or "bisexual", or "mostly homosexual"<br>**Heterosexals:** individuals who self-identify as "100% heterosexual" | Men and women between 26 and 34 | **Bisexuals:** N=354<br>**Heterosexuals**: N=6,783 | **Bisexuals:** N=1,465<br>**Heterosexuals**: N=6,164 | Whether the respondent is employed | -1.5% | -3%** | NO | YES<br>(control for an indicator for being in (or having experienced) a live-in romantic relationship) |



For Official Use

| Country | Survey | Study | Definition of bisexuals/ heterosexuals | Sample description | Sample size (bisexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Bisexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals? | If "no" to the previous question, is the partnership status of both bisexuals and heterosexuals controlled for? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| **LABOUR SUPPLY GAP** | | | | | | | | | | | |
| **AUSTRALIA** | 2012 Household, Income and Labour Dynamics in Australia (HILDA) Survey | Sabia and Wooden (2015, unpublished manuscript) | **Bisexuals:** individuals who self-identify as "bisexual" **Heterosexuals:** individuals who self-identify as "heterosexuals or straight" | Men and women between 18 and 64 | **Bisexuals:** N=43 **Heterosexuals:** N=4,387 | **Bisexuals**: N=107 **Heterosexuals:** N=5,148 | Number of hours worked per week | -6% | +8.5% | NO | NO |

*Source*: Author's calculation. *, ** and *** indicate statistical significance at the 90%, 95% and 99% confidence levels.

**Annex Table A4. Summary of the study using individuals-based data to test for an employment gap between transgenders and cisgenders, as of 2016**

| Country | Survey | Study | Definition of trangender/ cisgender individuals | Sample description | Sample size (focus on the sample used to conduct the multivariate Ordinary Least Squares analysis) | | | Dependent variable | Transgenders-cisgenders gap | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | All | Men | Women | | All | Men | Women |
| US | 2014 and 2015 Behavioral Risk Factor Surveillance System (BRFSS) | Carpenter, Eppink and Gonzales (2016, unpublished manuscript) | **Transgender:** individuals who self-identify as "transgender"<br>**Cisgender:** individuals who do not self-identify as "transgender" | Men and women between 18 and 64 | **Transgenders:** N=990<br>**Cisgenders:** N=237,732 | **Transgenders:** N=302<br>**Cisgenders:** N=104,659 | **Transgenders:** N=506<br>**Cisgenders:** N=132,891 | Whether the respondent is employed | -9%** | +4%<br>(comparison between transmen and male cisgenders) | -24%***<br>(comparison between transwomen and female cisgenders) |

*Source:* Author's calculation. *, ** and *** indicate statistical significance at the 90%, 95% and 99% confidence levels.



For Official Use

## Annex Table A5. Summary of correspondence studies testing for hiring discrimination against gay men and lesbians, as of 2016

| Country and study | Year and location | Candidates' gender | Recruitment channel, occupation(s) and qualification(s) | Experimental setup and sample size | Signal for same-sex sexual orientation | Ratio of the callback rates |
|---|---|---|---|---|---|---|
| 1. **Austria**<br>Weichselbaumer (2003, *Labour Economics*) | 1998-2000<br>Greater Vienna area | F | Application to all job advertisements published in the Sarturday issue of the Austrian **newspaper** "Kurier" (the largest provider of job announcements from the Greater Vienna area, the biggest Austrian labor market).<br>Accountant and secretary.<br>**Low- and middle-skilled profiles**<br>(the applications are designed to match the average employee in the clerical profession). | The experiment is conducted in three steps:<br>- round 1 (early to late 1998): the applications of the feminine straight woman and of the masculine straight woman are sent to each job posting (272 job postings amounting to 544 applications)<br>- round 2 (late 1998 to mid-1999): the applications of the feminine straight woman and of the masculine lesbian woman are sent to each job posting (171 job postings amounting to 342 applications)<br>- round 3 (mid-1999 to early 2000): the applications of the masculine straight woman and of the feminine lesbian woman are sent to each job posting (170 job postings amounting to 340 applications)<br>This procedure leads to the treatment of **613 job postings** amounting to 1,226 job applications.<br>A difference-in-difference approach between round 2 and round 1 allows for identifying discrimination against the masculine lesbian woman.<br>A difference-in-difference approach between round 3 and round 1 allows for identifying discrimination against the feminine lesbian woman. | **Resume: Engagement in a gay or lesbian organization for the lesbian woman ("1996-1998: Managerial activity for the Viennese Gay People's Alliance")**; volunteering for a nonprofit organization assisting school children with learning disabilities for the feminine straight woman; volunteering for a nonprofit cultural center for the masculine straight woman.<br>The sexual orientation signal and the femininity/masculinity signal are crossed to create the profiles of the feminine and masculine lesbian and heterosexual woman.<br><br>*Remark:* The feminity or masculinity of the applicants are signaled by the applicant's photograph, CV layout and hobbies. While the masculine woman depicted in the photo has short, dark hair, broad shoulders and is wearing a business jacket, the feminine one has long, blond hair and is in elegant, flowing clothes. The layout of the feminine applicant's CV is nice and playful, the design of the masculine appears rather plain. The feminine female's hobbies is drawing, designing and making of clothes, while the masculine enjoys rock-climbing, canoeing, playing drums and motorcycling. | Masculine heterosexual-to-homosexual:<br>**1.4****<br>Feminine heterosexual-to-homosexual:<br>**1.4**** |

| Country and study | Year and location | Candidates' gender | Recruitment channel, occupation(s) and qualification(s) | Experimental setup and sample size | Signal for same-sex sexual orientation | Ratio of the callback rates |
|---|---|---|---|---|---|---|
| 2. **Belgium** Baert (2014, *Industrial Relations Journal*) | October 2012-March 2013 Flanders | F | Randomly selected job advertisements from the database of the **Public Employment Service of Flanders**, the major job search channel in Flanders. The applications are spread equally across six occupations differing by required skill level, gender dominance and customer contact: (i) secretary (low-skilled, female-dominated, low level of customer contact); (ii) nanny (low-skilled, female-dominated, high level of customer contact); (iii) manual worker (low-skilled, male-dominated, low level of customer contact); (iv) management assistant (high- skilled, female-dominated, low level of customer contact); (v) ergotherapist (high-skilled, female-dominated, high level of customer contact); and (vi) engineer (high-skilled, male-dominated, low level of customer contact). A mix of **low- and high-skilled profiles**. | One of the following four pairs of candidates is randomly sent to each job advertisement: - 25-year-old married straight woman and married lesbian with no children (144 job postings amounting to 288 job applications) - 25-year-old married straight woman and married lesbian with one child (144 job postings amounting to 288 job applications) - 37-year-old married straight woman and married lesbian with no children (144 job postings amounting to 288 job applications) - 37-year-old married straight woman and married lesbian with one child (144 job postings amounting to 288 job applications) This procedure leads to the treatment of **576 job posting**s amounting to 1,152 job applications. | **Resume: Marital status and spouse's name for the lesbian woman (e.g. "Married to Julie Van Damme")** and marital status ("Married") for the straight woman. | 25-year-old married heterosexual-to-homosexual with no children: **0.9** 25-year-old married heterosexual-to-homosexual with one child: **0.8*** 37-year-old married heterosexual-to-homosexual with no children: **1.0** 37-year-old married heterosexual-to-homosexual with one child: **1.0** |
| 3. **Canada** Adam (1981, *Canadian Review of Sociology and Anthropology*) | Somewhere between 1979 and 1981 Ontario | F and M | **Unsolicited application** (by mail) to every Ontario law firms listed in the Law Directory of 1979. The candidates apply to an "articling" position, i.e. an internship or apprenticeship of "in-the-field" work with a legal firm, pior to admission to the bar. **High-skilled profiles**. | One of the following four candidates is randomly sent to each law firm: the straight man (42 applications), the straight woman (41 applications), the gay man (39 applications) and the lesbian woman (41 applications). This procedure leads to the treatment of **163 job postings** amouting to 163 applications. | **Resume: Engagement in a gay or lesbian organization for the homosexual applicant (e.g. "Active in (local) Gay People's alliance")** and no involvement in a control organization for the straight applicant. | Heterosexual-to-homosexual (male): **1.6** (unknown stat sig) Heterosexual-to-homosexual (female): **2.0** (unknown stat sig) |



For Official Use

| Country and study | Year and location | Candidates' gender | Recruitment channel, occupation(s) and qualification(s) | Experimental setup and sample size | Signal for same-sex sexual orientation | Ratio of the callback rates |
|---|---|---|---|---|---|---|
| 4. **Cyprus**<br>Drydakis (2014b, *International Journal of Manpower*) | January 2011<br>January 2012<br>South Cypriot Cities: Larnaca, Limassol, Nicosia and Paphos. | F and M | Randomly selected job advertisements from the six Greek Cyprus-based **Internet job search sites**. Office jobs, industry jobs, café and restaurant services and shop sales.<br>**Low-skilled profiles**<br>(the applicants have only completed high school). | One of the following four pairs of candidates is randomly sent to each job advertisement:<br>- less informative straight man and gay man (1,223 job postings amounting to 2,446 applications)<br>- less informative straight woman and lesbian woman (1,040 job postings amounting to 2,080 applications)<br>- more informative straight man and gay man (1,200 job postings amounting to 2,400 applications)<br>- more informative straight woman and lesbian woman (1,068 job postings amounting to 2,136 applications)<br>This procedure leads to the treatment of **4,531 job postings** amounting to 9,062 job applications. | **Resume: Engagement in gay or lesbian organization for the homosexual applicant (e.g."member volunteer in the Cypriot Homosexual Association (from 2005 to 2008)")** and involvement in a control organization for the straight applicant (e.g. "Volunteer in the Nature: Environmental Union from 2005-2008").<br><br>*Remark*: The more-informative applicants mention their high school diplomas grading scale (very good); their first degrees in English grade (A); and their certificates of P/C knowledge grade (A). Moreover, the CVs are more informative regarding applicants' previous responsibilities and job tasks. Furthermore, they mention some personal characteristics to emphasize their extroversion (sociable, amiable, energetic, enthusiastic) and conscientiousness (efficient, organized, productive). Finally, to enhance applicants' reliability and work commitment, the more-informative applicants attach letters of reference from previous employers stating positive information about the applicants' traits such as affability, capacity for teamwork, efficiency, conscientiousness, responsibility, loyalty to the firm, willingness to exert effort on behalf of the firm, no absenteeism from work and agreeableness. | Less informative heterosexual-to-homosexual (male): **3.7*****<br>Less informative heterosexual-to-homosexual (female): **4.5*****<br>More informative heterosexual-to-homosexual (male): **3.7*****<br>More informative heterosexual-to-homosexual (female): **4.6***** |

| Country and study | Year and location | Candidates' gender | Recruitment channel, occupation(s) and qualification(s) | Experimental setup and sample size | Signal for same-sex sexual orientation | Ratio of the callback rates |
|---|---|---|---|---|---|---|
| 5. **Germany** Weichselbaumer (2015, *Industrial Relations*) | May 2011-August 2012 Germany: Berlin and Munich | F | Randomly selected job advertisements from **Internet job search sites**. Secretaries, clerical assistants and accountants. **Low- and middle-skilled profiles.** | One of the following four candidates is randomly sent to each job advertisement: the single straight woman, the married straight woman, the single lesbian woman and the partnered lesbian woman. This procedure leads to the treatment of **1,066 job postings** amounting to 1,066 applications (384 in Berlin and 682 in Munich). | **Resume:** "single" family status and **engagement in a gay or lesbian organization (e.g. "bookkeeping and accounting at the Lesben- und Schwulenverband in Deutschland") for the single lesbian woman**; "single" family status and involvement in a control organization (e.g. "bookkeeping and accounting in a nonprofit cultural center") for the straight woman; **"in a registered partnership with Katharina Krause" family status and "bookkeeping and accounting in a nonprofit cultural center" for the partnered lesbian woman**; "married to Andreas Krause" family status and "bookkeeping and accounting in a nonprofit cultural center" for the married straight woman. | Heterosexual-to-homosexual ratio: Single women **1.4**** (Munich) and **0.9** (Berlin). Partnered women **1.3*** (Munich) and **1.1** (Berlin). |
| 6. **Greece** Drydakis (2009, *Labour Economics*) | December 2006-September 2007 Athens | M | Randomly selected job advertisements from **newspaper websites**. Office jobs, industry jobs, café and restaurant services and shop sales. **Low-skilled profiles** (the applicants have only completed high school). | The straight man/gay man pair of candidates is randomly sent to each job advertisement. This procedure leads to the treatment of **1,714 job postings** amounting to 3,428 job applications. | **Resume: Engagement in gay or lesbian organization for the gay man (e.g."former member volunteer in the Athenian Homosexual Community")** and involvement in a control organization for the straight man (e.g. former volunteer in an environmental community). | Heterosexual-to-homosexual: **2.9***** |
| 7. **Greece** Drydakis (2011, *Feminist Economics*) | September 2007-July 2008 Athens | F | Randomly selected job advertisements from **newspaper websites**. Office jobs, industry jobs, café and restaurant services and shop sales. **Low-skilled profiles** (the applicants have only completed high school). | The straight woman/lesbian woman pair of candidates is randomly sent to each job advertisement. This procedure leads to the treatment of **1,057 job postings** amounting to 2,114 job applications. | **Resume: Engagement in gay or lesbian organization for the homosexual applicants (e.g."Member volunteer in the Athenian Homosexual Association (from 2001 to 2005)")** and involvement in a control organization for the straight applicants (e.g. "Volunteer in the Olympus: Environmental Union from 1999–2003"). | Heterosexual-to-homosexual: **2.2***** |



For Official Use

| Country and study | Year and location | Candidates' gender | Recruitment channel, occupation(s) and qualification(s) | Experimental setup and sample size | Signal for same-sex sexual orientation | Ratio of the callback rates |
|---|---|---|---|---|---|---|
| 8. **Italy** Patacchini, Ragusa and Zenou (2015, *Journal of Population Economics*) | January-February 2012 Milan and Rome | F and M | Randomly selected job advertisements from **Internet job search sites**. Administrative clerk, accountant, call center operator, receptionist, sales clerk, secretary, and shop assistant. **Low- and middle-skilled profiles.** | The following quadruplet of candidates is sent to each job advertisement: the straight man, the gay man, the straight woman and the lesbian woman (sometimes, an additional candidate from the control (straight) or the treatment (homosexual) group is sent). Overall, **531 job postings** are treated (336 in Milan and 195 in Rome), amounting to 2,320 job applications. | **Resume:** **Periods of internship in well-known city-specific pro-gay advocacy groups (e.g. "Arcilesbica Roma," "Centro di Iniziativa Gay-Arcigay," or "DGP–Di Gay Project") for the homosexual applicants** and periods of internship in a nongay/nonlesbian cultural association or in a company for the straight applicants. | Heterosexual-to-homosexual (male): **1.5*** Heterosexual-to-homosexual (female): **1.0** |
| 9. **Sweden** Ahmed, Andersson, and Hammarstedt (2013b, *Southern Economic Journal*) | August to December 2010 Sweden | F and M | Randomly selected job advertisements from the Web site of the **Swedish Public Employment Service** (the main channel for job searches in Sweden). 5 female-dominated occupations (shop sales assistant, preschool teacher, cleaner, restaurant worker, and nurse), 4 male-dominated occupations (construction worker, motor vehicle driver, sales person, and mechanic worker), and one gender-neutral occupation (high school teacher). **Low- and middle-skilled profiles.** | One of the following four candidates is randomly sent to each job advertisement: the straight man, the straight woman, the gay man and the lesbian woman. This procedure leads to the treatment of **3,990 job postings** (995 for the straight man, 1,009 for the straight woman, 980 for the gay man and 1,006 for the lesbian woman), amounting to 3,990 applications. | **Application letter:** The sexual orientation of the homosexual applicants is signaled in three ways: - the gay man (the lesbian woman) writes: **"In my spare time I enjoy spending time with my husband (wife)**." - they are **"engaged in the Swedish Federation for Lesbian, Gay, Bisexual, and Transgender Rights (RSFL)."** - they had been actively **engaged in the organization of Stockholm Pride Festival**. By contrast, the heterosexual man (woman) writes: "In my spare time, I enjoy spending time with my wife (husband)." Moreover, they mention that they are "engaged in the Swedish Red Cross." | Married heterosexual-to-homosexual (male): **1.1*** Married heterosexual-to-homosexual (female): **1.2***** |
| 10. **UK** Drydakis (2016, Forthcoming in *Human Relations*) | February 2013-April 2013 United Kingdom | F and M | Randomly selected job advertisements from the 15 leading UK-based **Internet job search sites.** Accounting, banking, finance and management (38.4%), education and teaching (26.1%) and social care, social services and charities (35.3%). **High-skilled profiles** (the candidates hold a college degree in economics, education (primary) or psychology). | One of the following two pairs of candidates is randomly sent to each job advertisement: - the straight man and the gay man - the straight woman and the lesbian woman This procedure leads to the treatment of **5,549 job postings** (2,814 for the straight man/gay man pair and 2,735 for the straight woman/lesbian woman pair) amounting to 11,098 job applications. | **Resume:** the author matches the resumes of real homosexual and heterosexual students who are in charge of the budget of their: - **university's gay and lesbian unions for the homosexual profile**; - university's human rights union for the heterosexual profile **Application letter:** **"I have gained organizational and financial skills by administrating my university's (gay and lesbian/human rights) union. I was responsible for the budget, and I also had fundraising responsibilities"**, with the "gay and lesbian/human rights" descriptor distinguishing the groups of homosexual and heterosexual profiles. | Heterosexual-to-homosexual (male): **1.1***** Heterosexual-to-homosexual (female): **1.1***** |

| Country and study | Year and location | Candidates' gender | Recruitment channel, occupation(s) and qualification(s) | Experimental setup and sample size | Signal for same-sex sexual orientation | Ratio of the callback rates |
|---|---|---|---|---|---|---|
| 11. **US** Tilcsik (2011, *American Journal of Sociology*) | 6 months in 2005 7 States (California, Florida, Nevada, New York, Ohio, Pennsylvania and Texas) | M | Randomly selected job advertisements from **Internet job search sites**. Customer service representatives, sales representatives (in all sectors), administrative assistants (including secretaries), managers (all "management occupations") and analysts (including management, financial, and budget analysts). **High-skilled profiles** (the candidates hold a college degree). | The following straight man/gay man pair of candidates is randomly sent to each job advertisement. This procedure leads to the treatment of **1,769 job postings** amounting to 3,538 job applications. | **Resume: Elected treasurer for the gay and lesbian campus organization for the gay man** and elected treasurer for the "Progressive and Socialist Alliance" (a small left-wing campus organization) for the straight man. | Heterosexual-to-homosexual: **1.6***** |
| 12. **US** Bailey, Wallace, and Wright (2013, *Journal of Homosexuality*) | March-May 2010 Chicago, Dallas, Philadelphia and San Francisco. | F and M | Randomly selected job advertisements from the **Internet job search site CareerBuilder.com**. Accountants and secretaries. **High-skilled profiles** (the candidates are college graduates from prominent public universities in the region of the target cities). | The following three profiles are sent to each job posting: the straight man, the straight woman and either the gay man or the lesbian woman. This procedure leads to the treatment of **1,536 job postings** (1,536 straight men, 1,536 straight women, 768 gay men, and 768 lesbian women), amounting to 4,608 applications. | **Resume: Engagement in a gay or lesbian organization for the homosexual applicants (e.g. "President, University of Wisconsin Gay–Lesbian Association")** and involvement in a control organization for the straight applicants (e.g. "Publicity Manager, Community Students United, Indiana University"). | Heterosexual-to-homosexual (male): **0.9** Heterosexual-to-homosexual (female): **1.0** |
| 13. **US** Acquisti and Fong (2015, unpublished manuscript) | Early 2013-Summer 2013 US | M | Randomly selected job advertisements from the **Internet job search site Indeed.com** (which aggregates job ads from several other sites). Web development, software development, quality assurance, project or product management, medical/healthcare information, information systems, information security, business intelligence, business development, and analytics. **High-skilled profiles** (the candidates hold a bachelor's degree in computer science and a master's degree in information systems). | One of the following four candidates is randomly sent to each job advertisement: the straight man, the gay man, the Christian man and the Muslim man. This procedure leads to the treatment of **4,173 job postings** (1,025 for the straight man, 1,066 for the gay man, 1,060 for the Christian man and 1,022 for the Muslim man), amounting to 4,173 job applications. | **Facebook profile: The candidates' sexual orientation** and religious affiliation are manipulated by **filling out the field "interested in" (either male interested in females or interested in males)** and the "religion" field (either Christian or Muslim), respectively. | Heterosexual-to-homosexual: **1.0** |

*Source*: Author's calculation. *, ** and *** indicate statistical significance at the 90%, 95% and 99% confidence levels. "Low-skilled profiles" refers to individuals who have, at most, completed high school. "High-skilled profiles" refers to individuals who hold at least a college degree. "Middle-skilled profiles" refers to the remaining individuals.



For Official Use

**Annex Table A6. Summary of the correspondence study testing for hiring discrimination against transgender people, as of 2016**

| Country and study | Year and location | Candidates' gender | Recruitment channel, occupation(s) and qualification(s) | Experimental setup and sample size | Signal for being transgender | Ratio of the callback rates |
|---|---|---|---|---|---|---|
| **US**<br>Bardales (2013, unpublished manuscript) | February-March 2013<br>Texas (Houston and San Antonio) | F | Randomly selected job advertisements from the **Internet job search sites Indeed.com, Careerbuilder.com and Monster.com.**<br>Restaurant management and customer service<br>**High-skilled profiles**<br>(the candidates hold a bachelor's degree). | The cisgender woman/transgender woman pair of candidates is randomly sent to each job advertisement.<br>This procedure leads to the treatment of **150 job posting**s amounting to 300 job applications. | **Resume:** the gender identity of the candidate is conveyed in three ways:<br>- **"Female Name" (Legal Name: "Male Name") for the transgender woman** and "Female Name" for the cisgender woman;<br>- **"Transgender Women's Support Group at UT San Antonio**. I organize events and serve as a counselor for other transgender women." for the transgender woman and "Women's Health Center at UT San Antonio. I serve as a counselor and organizer of various events." for the cisgender woman;<br>- **"Male-to-Female Youth Peer Counseling**. I contributed as a peer counselor" for the transgender woman and "Young Girls Peer Counseling and Mentorship. Local group for young girls where I served as one of the peer mentors/counselors" for the cisgender woman. | Cisgender-to-transgender:<br>**1.5*** ** |

*Source*: Author's calculation. *, ** and *** indicate statistical significance at the 90%, 95% and 99% confidence levels. "Low-skilled profiles" refers to individuals who have, at most, completed high school. "High-skilled profiles" refers to individuals who hold at least a college degree. "Middle-skilled profiles" refers to the remaining individuals.

## Annex Table A7. Summary of studies using couples-based data to test for an individual earnings gap between homosexuals and heterosexuals, as of 2016

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women |
| **CANADA** | 1. 2006 Census | Waite and Denier (2015, *Gender & Society*) | **Homosexuals:** (married or unmarried) individuals who report living with a same-sex partner (same-sex marriage is legal in Canada since July 20, 2005)<br>**Heterosexuals**: (married or unmarried) individuals who report living with an opposite-sex partner | Full-time or part-time workers, between 25 and 64 (visible minorities, immigrants and arboriginal populations excluded from the analysis) | **Homosexuals:** N=4,780<br>**Heterosexuals:** N=592,710 | **Homosexuals:** N=4,665<br>**Heterosexuals:** N=568,405 | Individual yearly earnings | -5%*** | +8%*** |
| **FRANCE** | 2. 1996-2007 French Labour Force Survey (midpoint: 2001-2002) | Laurent and Mihoubi (2012, *Journal of Labor Research*) | **Homosexuals:** unmarried individuals who report living both (i) in a two-person household; (ii) with a same-sex *friend* (information on same-sex partner not collected before 2003)<br>**Heterosexuals**: (married or unmarried) individuals who report living with an opposite-sex partner | Full-time or part-time workers, between 27 and 60 (non-French people as well as couples where one member is a student, apprentice, farmer or retired person excluded from the analysis) | **Homosexuals:** N=461<br>**Heterosexuals:** N=119,645 | **Homosexuals:** N=327<br>**Heterosexuals:** N=115,875 | Individual monthly earnings | -6%***<br>(both in the private and public sector) | +2%*** in the private sector<br><br>+0% in the public sector |
| **GERMANY** | 3. 2009 Mikrozensus | Humpert (2012, unpublished manuscript) | **Homosexuals 1:** individuals who report living with a same-sex partner in an unregistered union<br>**Homosexuals 2:** individuals who report living with a same-sex partner in a registered union (same-sex registered unions are legal in Germany since 2001)<br>**Heterosexuals 1**: married individuals who report living with an opposite-sex partner<br>**Heterosexuals 2:** unmarried individuals who report living with an opposite-sex partner | Full-time or part-time workers between 18 and 65 | **Homosexuals 1:** N=101<br>**Homosexuals 2:** N=40<br>**Heterosexuals 1:** N=23,830<br>**Heterosexuals 2:** N=5,489 | **Homosexuals 1:** N=70<br>**Homosexuals 2:** N=29<br>**Heterosexuals 1:** N=24,833<br>**Heterosexuals 2:** N=6,216 | Individual monthly earnings | -10%**<br>(homo 1 vs hetero 1)<br><br>-2% (unknown stat sig)<br>(homo 1 vs hetero 2)<br><br>-4%<br>(homo 2 vs hetero 1)<br><br>+5% (unknown stat sig)<br>(homo 2 vs hetero 2) | +12%**<br>(homo 1 vs hetero 1)<br><br>+3% (unknown stat sig)<br>(homo 1 vs hetero 2)<br><br>+16%**<br>(homo 2 vs hetero 1)<br><br>+6% (unknown stat sig)<br>(homo 2 vs hetero 2) |



For Official Use

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women |
| **SWEDEN** | 4. 2003 LOUISE database at Statistics Sweden (the LOUISE database was recalled the LISA database in 2004) | Ahmed and Hammarstedt (2010, *Journal of Population Economics*) | **Homosexuals:** individuals living with a same sex partner in a civil union<br>**Heterosexuals**: married individuals living with an opposite-sex partner | Full-time or part-time workers between 25 and 64 | **Homosexuals:** N=1,318<br>**Heterosexuals:** N=1,192<br><br>**NB:** heterosexuals are randomly selected from the 2003 LOUISE database to match the number of homosexuals | **Homosexuals:** N=925<br>**Heterosexuals:** N=1,090<br><br>**NB:** heterosexuals are randomly selected from the 2003 LOUISE database to match the number of homosexuals | Individual yearly earnings | -12%*** | +3% |
| | 5. 2007 LISA database at Statistics Sweden | Ahmed, Andersson and Hammarstedt (2011a, *British Journal of Industrial Relations*) | **Homosexuals:** individuals living with a same sex partner in a civil union<br>**Heterosexuals**: married individuals living with an opposite-sex partner | Full-time or part-time workers between 25 and 64 | **Homosexuals:** N=1,882<br>**Heterosexuals:** N=1,029,420 | **Homosexuals**: N=1,936<br>**Heterosexuals:** N=1,029,420 | Individual yearly earnings | -17%*** | +5%** |
| | 6. 2007 LISA database at Statistics Sweden | Ahmed, Andersson and Hammarstedt (2013a, *Review of Economics of the Household*) | **Homosexuals:** individuals living with a same sex partner in a civil union<br>**Heterosexuals**: married individuals living with an opposite-sex partner | Full-time or part-time workers between 25 and 64 | **Homosexuals:** N=944<br>**Heterosexuals:** N=420,998 | **Homosexuals:** N=1,067<br>**Heterosexuals:** N=603,175 | **Dep var 1:** Individual yearly earnings<br>**Dep var 2:** Individual full-time monthly earnings | **Dep var 1:** -10%***<br><br>**Dep var 2:** -6%*** | **Dep var 1:** +6.5%***<br><br>**Dep var 2:** +0% |
| | 7. 2007 LISA database at Statistics Sweden | Hammarstedt, Ahmed and Andersson (2015, *Feminist Economics*) | **Homosexuals:** individuals living with a same sex partner in a civil union<br>**Heterosexuals**: married individuals living with an opposite-sex partner | Full-time or part-time workers between 25 and 64 | **Homosexuals:** N=1,661<br>**Heterosexuals:** N=938,141 | **Homosexuals:** N=1,752<br>**Heterosexuals:** N=949,099 | Individual yearly earnings | -17%*** | +1% |
| **UK** | 8. 1996-2001 UK Labour Force Survey (midpoint: 1998-1999) | Arabsheibani, Marin and Wadsworth (2004, *International Journal of Manpower*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner<br>**Heterosexuals:** married or unmarried individuals who report living with an opposite-sex partner | Full-time or part-time workers between 16 and 64 | **Homosexuals:** N=498<br>**Heterosexuals:** N=127,285 | **Homosexuals:** N=297<br>**Heterosexuals:** N=124,869 | Individual hourly earnings | -5%** | +9%** |

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women |
| US | 9. 1990 Census | Klawitter and Flatt (1998, *Journal of Policy Analysis and Management*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner<br>**Heterosexuals 1:** married individuals who report living with an opposite-sex partner<br>**Heterosexuals 2:** unmarried individuals who report living with an opposite-sex partner | Full-time or part-time male workers between 18 and 64 | **Homosexuals:** N=4,293.<br>**Heterosexuals 1:** N=6,937<br>**Heterosexuals 2:** N=8,931<br><br>**NB:** heterosexuals are randomly selected from the 1990 Census to match the number of homosexuals | **Homosexuals:** N=3,493.<br>**Heterosexuals 1:** N=5,675<br>**Heterosexuals 2:** N=8,323<br><br>**NB:** heterosexuals are randomly selected from the 1990 Census to match the number of homosexuals | Individual yearly earnings | -26%***<br>(homo vs hetero 1)<br><br>-1% (unknown stat sig)<br>(homo vs hetero 2)<br><br>(results for homosexuals who live (i) in rural areas; (ii) in states without sodomy laws (laws that prohibit certain sexual acts such as anal sex); (iii) in states without public opposition to employment protections based on sexual orientation. Interaction terms between the "homosexual" dummy and each of these three variables not statistically significant) | +18%***<br>(homo vs hetero 1)<br><br>+9% (unknown stat sig)<br>(homo vs hetero 2)<br><br>(results for homosexuals who live (i) in rural areas; (ii) in states without sodomy laws (laws that prohibit certain sexual acts such as anal sex); (iii) in states without public opposition to employment protections based on sexual orientation. Interaction terms between the "homosexual" dummy and each of these three variables not statistically significant) |
| | 10. 1990 Census | Alegretto and Arthur (2001, *Industrial and Labor Relations Review*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner<br>**Heterosexuals 1**: married individuals who report living with an opposite-sex partner<br>**Heterosexuals 2:** unmarried individuals who report living with an opposite-sex partner<br>**Heterosexuals 3:** married or unmarried individuals who report living with an opposite-sex partner | Full-time or part-time male workers between 20 and 64 | **Homosexuals:** N=4,427<br>**Heterosexuals 1:** N=59,477<br>**Heterosexuals 2**: N=86,128<br>**Heterosexuals 3:** N=145,605 | Not studied | Individual hourly earnings | -14%**<br>(homo vs hetero 1)<br><br>-2%**<br>(homo vs hetero 2)<br><br>-2%<br>(homo vs hetero 3) | Not studied |
| | 11. 1990 Census | Clain and Leppel (2001, *Applied Economics*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner<br>**Heterosexuals:** married or unmarried individuals who report living with an opposite-sex partner | Full-time workers between 18 and 64 | **Homosexuals:** N=91<br>**Heterosexuals:** N=31,153 | **Homosexuals:** N=58<br>**Heterosexuals:** N=18,367 | Individual yearly earnings | Impossible to compute the order of magnitude based on the information provided by the paper | Impossible to compute the order of magnitude based on the information provided by the paper |



For Official Use

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women |
| US | 12. 2000 Census | Jepsen (2007, *Industrial Relations*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner<br>**Heterosexuals 1:** married individuals who report living with an opposite-sex partner<br>**Heterosexuals 2:** unmarried individuals who report living with an opposite-sex partner | Full-time female workers between 18 and 65 | Not studied | **Homosexuals:** N=14,528<br>**Heterosexuals 1:** N=89,457<br>**Heterosexuals 2:** N=9,787 | Individual yearly earnings | Not studied | +11%***<br>(homo vs hetero 1)<br><br>+13%***<br>(homo vs hetero 2) |
| | 13. 2000 Census | Antecol, Jong and Steinberger (2008, *Industrial and Labour Relations Review*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner<br>**Heterosexuals 1:** married individuals who report living with an opposite-sex partner<br>**Heterosexuals 2:** unmarried individuals who report living with an opposite-sex partner | Full-time or part-time workers, between 25 and 59 (non-white individuals excluded from the analysis) | **Homosexuals:** N=5,785<br>**Heterosexuals 1:** N=814,153<br>**Heterosexuals 2:** N=57,825 | **Homosexuals:** N=6,205<br>**Heterosexuals 1:** N=701,900<br>**Heterosexuals 2:** N=55,872 | Individual hourly earnings | -12% (unknown stat sig) (homo vs hetero 1)<br><br>+2% (unknown stat sig) (homo vs hetero 2)<br><br>(results from an Oaxaca-Blinder decomposition that amount to the "unexplained" earnings gap once the following variables have been controlled for: education, potential work experience, part-time/full-time, urban/rural, regional fixed effects and industry/occupation) | -0% (unknown stat sig) (homo vs hetero 1)<br><br>+4% (unknown stat sig) (homo vs hetero 2)<br><br>(results from an Oaxaca-Blinder decomposition that amount to the "unexplained" earnings gap once the following variables have been controlled for: education, potential work experience, part-time/full-time, urban/rural, regional fixed effects and industry/occupation) |
| | 14. 2000 Census | Daneshvary, Waddoups, and Wimmer (2008, *Journal of Labor Research*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner<br>**Heterosexuals:** married or unmarried individuals who report living with an opposite-sex partner, as well as singles | Full-time workers, between 18 and 65 (self-employed individuals excluded from the analysis) | Not studied | **Homosexuals:** N=6,777<br>**Heterosexuals:** N=91,906 | Individual hourly earnings | Not studied | +15%*** |

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women |
| US | 15. 2000 Census | Daneshvary, Waddoups, and Wimmer (2009, *Industrial Relations*) | **Homosexuals 1:** unmarried individuals who report living with a same-sex partner and who were not previously married with an opposite-sex person<br>**Homosexuals 2:** unmarried individuals who report living with a same-sex partner and who were previously married with an opposite-sex person<br>**Heterosexuals 1:** unmarried individuals who report living with an opposite-sex partner and who were not previously married with an opposite-sex person<br>**Heterosexuals 2:** unmarried individuals who report living with an opposite-sex partner and who were previously married with an opposite-sex person | Full-time workers, between 18 and 65 (self-employed individuals excluded from the analysis) | Not studied | **Homosexuals 1:** N=4,974<br>**Homosexuals 2:** N=1,811<br>**Heterosexuals 1:** N=40,035<br>**Heterosexuals 2:** N=40,418 | Individual hourly earnings | Not studied | +6%***<br>(homo 1 vs hetero 1)<br>+9.5%***<br>(homo 1 vs hetero 2)<br>+0%<br>(homo 2 vs hetero 1)<br>+3%***<br>(homo 2 vs hetero 2) |
| | 16. 2000 Census | Baumle and Poston (2011, *Social Forces*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner<br>**Heterosexuals 1:** married individuals who report living with an opposite-sex partner<br>**Heterosexuals 2:** unmarried individuals who report living with an opposite-sex partner | Full-time or part-time workers | **Homosexuals:** N=20,694<br>**Heterosexuals 1:** N=1,877,963<br>**Heterosexuals 2:** N=167,862 | **Homosexuals:** N=21,797<br>**Heterosexuals 1:** N=1,493,409<br>**Heterosexuals 2:** N=130,792 | Individual yearly earnings | -11%***<br>(homo vs hetero 1)<br>+2%***<br>(homo vs hetero 2) | +4%***<br>(homo vs hetero 1)<br>+8%***<br>(homo vs hetero 2) |
| | 17. 2000 Census | Klawitter (2011, *Journal of Policy Analysis and Management*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner<br>**Heterosexuals 1:** married individuals who report living with an opposite-sex partner<br>**Heterosexuals 2:** unmarried individuals who report living with an opposite-sex partner | Full-time or part-time workers | **Homosexuals:** N=6,135<br>**Heterosexuals 1:** N=10,512<br>**Heterosexuals 2:** N=19,180<br>**NB:** heterosexuals are randomly selected from the 1990 Census to match the number of homosexuals | **Homosexuals:** N=6,356<br>**Heterosexuals 1:** N=8,839<br>**Heterosexuals 2:** N=17,882<br>**NB:** heterosexuals are randomly selected from the 1990 Census to match the number of homosexuals | Individual yearly earnings | -20%***<br>(homo vs hetero 1)<br>-3% (unknown stat sig)<br>(homo vs hetero 2) | +27%***<br>(homo vs hetero 1)<br>+14% (unknown stat sig)<br>(homo vs hetero 2) |



For Official Use

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women |
| **US** | 18. 2004 Current Population Survey (CPS) | Elmslie and Tebaldi (2007, *Journal of Labor Research*) | **Homosexuals:** unmarried individuals who report living with a same-sex partner<br>**Heterosexuals 1:** married individuals who report living with an opposite-sex partner<br>**Heterosexuals 2:** unmarried individuals who report living with an opposite-sex partner | Full-time or part-time workers above 25 | **Homosexuals:** N=1,120<br>**Heterosexuals 1**: unknown<br>**Heterosexuals 2:** unknown | **Homosexuals:** N=678<br>**Heterosexuals 1**: unknown<br>**Heterosexuals 2:** unknown | Individual hourly earnings | -24%***<br>(homo vs hetero 1)<br><br>-10.5% (unknown stat sig) (homo vs hetero 2)<br><br>(results for white individuals with no children and living in metropolitan areas) | -3%<br>(homo vs hetero 1)<br><br>+2% (unknown stat sig) (homo vs hetero 2)<br><br>(results for white individuals with no children and living in metropolitan areas) |

*Source*: Author's calculation. *, ** and *** indicate statistical significance at the 90%, 95% and 99% confidence levels. Compared to the meta-analysis performed by Klawitter (2015) regarding the gap in individual earnings between homosexuals and heterosexuals, Table A7 includes 4 more studies using couples-based data: Humpert (2012), Ahmed, Andersson and Hammarstedt (2013a), Hammarstedt, Ahmed and Anderssson (2015) and Waite and Denier (2015).

## Annex Table A8. Summary of studies using individuals-based data to test for an individual earnings gap between homosexuals and heterosexuals, as of 2016

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals (the "first best" option to solve the household specialization bias)? | If "no" to the previous question, is the partnership status of both homosexuals and heterosexuals controlled for (the "second best" option to solve the household specialization bias)? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| **AUSTRALIA** | 1. 2000 Australian Longitudinal Study on Women's Health (ALSWH) | Carpenter (2008b, *Review of Economics of the Household*) | **Homosexuals:** individuals who self-identify as "mainly homosexual" or "exclusively homosexual"<br>**Heterosexuals:** individuals who self-identify as "mainly heterosexual" or "exclusively heterosexual" | Full-time or part-time female workers between 22 and 27 | Not studied | **Homosexuals:** N=69<br>**Heterosexuals:** N=7,031 | Individual weekly earnings | Not studied | -25%* | NO | YES (control for an indicator for being either married legally or in a *de facto* relationship) |
| | 2. 2012 Household, Income and Labour Dynamics in Australia (HILDA) Survey | Sabia and Wooden (2015, unpublished manuscript) | **Homosexuals:** individuals who self-identify as "gay" or lesbian"<br>**Heterosexuals:** individuals who self-identify as "heterosexual or straight" | Full-time workers between 18 and 64 | **Homosexuals:** N=83<br>**Heterosexuals:** N=4,387 | **Homosexuals**: N=81<br>**Heterosexuals:** N=5,148 | Individual hourly earnings | -11%** | +2% | NO | NO |
| **CANADA** | 3. 2003 and 2005 Canadian Community Health Survey (midpoint: 2004) | Carpenter (2008a, *Canadian Journal of Economics*) | **Homosexuals 1:** individuals who self-identify as "homosexual"<br>**Homosexuals 2:** individuals who self-identify as "homosexual" and who report being partnered<br>**Homosexuals 3:** individuals who self-identify as "homosexual" and who report being non-partnered<br>**Heterosexuals 1:** individuals who self-identify as "heterosexual"<br>**Heterosexuals 2:** individuals who self-identify as "heterosexual" and who report being partnered<br>**Heterosexuals 3:** individuals who self-identify as "heterosexual" and who report being non-partnered | Full-time workers between 18 and 55 | **Homosexuals 1:** N=1,017<br>**Homosexuals 2:** N=unknown<br>**Homosexuals 3:** N=unknown<br>**Heterosexuals 1:** N=65,840<br>**Heterosexuals 2:** N=unknown<br>**Heterosexuals 3:** N=unknown | **Homosexuals 1:** N=657<br>**Homosexuals 2:** N=unknown<br>**Homosexuals 3:** N=unknown<br>**Heterosexuals 1:** N=74,800<br>**Heterosexuals 2:** N=unknown<br>**Heterosexuals 3:** N=unknown | Individual yearly earnings | -11%***<br>(homo 1 vs hetero 1)<br>-19%***<br>(homo 2 vs hetero 2)<br>-8%<br>(homo 3 vs hetero 3) | +17%***<br>(homo 1 vs hetero 1)<br>+43%***<br>(homo 2 vs hetero 2)<br>+1%<br>(homo 3 vs hetero 3) | YES (control for an indicator for being either married legally or in a *de facto* relationship for the "homo 1 vs hetero 1" comparison, and separate analysis for partnered and non-partnered individuals in the other comparisons) | |



For Official Use

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals (the "first best" option to solve the household specialization bias)? | If "no" to the previous question, is the partnership status of both homosexuals and heterosexuals controlled for (the "second best" option to solve the household specialization bias)? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| **GREECE** | 4. 2008–2009 Athens Area Study (AAS) | Drydakis (2012, *Applied Economics*) | **Homosexuals:** individuals who self-identify as "homosexual"<br>**Heterosexuals:** individuals who self-identify as "heterosexual" | Full-time and part-time male workers between 18 and 65 | **Homosexuals:** N=277<br>**Heterosexuasl:** N=6,305 | Not studied | Individual hourly earnings | -4%*** | Not studied | NO | NO |
| **INTERNATIONAL** | 5. 1994 International Social Survey Programme (ISSP) Survey on "Family and Gender Roles" (Australia, Bulgaria, Ireland, Poland and USA) | Heineck (2009, *Applied Economics Letters*) | **Homosexuals:** individuals who report only same-sex sexual partners in the past 5 years<br>**Heterosexuals:** individuals who report only opposite-sex sexual partners in the past 5 years | Full-time and part-time workers between 18 and 60 | **Homosexuals:** N=60.<br>**Heterosexuals**: unknown (but N=3,969 for both male and female heterosexuals) | **Homosexuals:** N=32.<br>**Heterosexuals:** unknown (but N=3,969 for both male and female heterosexuals) | Individual monthly earnings | -15%* | +11% | NO | NO |
| **NETHERLANDS** | 6. Representative cohort of students who graduated from tertiary education in the years 1998/1999 and 1999/2000 and that the authors follow for their first 20 months in the labor market (midpoint: 2001) | Plug and Berkhout (2004, *Journal of Population Economics*) | **Homosexuals:** individuals who describe their sexual preference as being "only men" for men and "only women" for women<br>**Heterosexuals:** individuals who describe their sexual preference as being "only women" for men and "only men" for women | Full-time and part-time workers in their late 20s | **Homosexuals:** N=241<br>**Heterosexuals:** N=4,869 | **Homosexuals:** N=198<br>**Heterosexuals:** N=6,117 | Individual hourly earnings | -2%* | +6%*** | NO | YES<br>(control for an indicator for being either married legally or in a *de facto* relationship) |

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals (the "first best" option to solve the household specialization bias)? | If "no" to the previous question, is the partnership status of both homosexuals and heterosexuals controlled for (the "second best" option to solve the household specialization bias)? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| UK | 7. 2000-2001 Association of University Teachers Survey | Frank (2006, *Economica*) | **Homosexuals/bisexuals:** individuals who self-identify as "gay", "lesbian" or "bisexual" (homosexuals not disentangled from bisexuals in the analysis)<br>**Heterosexuals:** individuals who self-identify as heterosexual | Individuals holding an academic position in a sample of British universities | **Homosexuals/ bisexuals:** N=59 (49 gay men and 10 male bisexuals)<br>**Heterosexuals**: N=319 | **Homosexuals/ bisexuals:** N=51 (33 lesbians and 18 female bisexuals)<br>**Heterosexuals:** N=355 | Individual yearly earnings | +7% | +10.5%* | NO | NO |
| | 8. 2011 Workplace Employment Relations Survey | Bryson (2016, *Work, Employment and Society*) | **Homosexuals:** individuals who self-identify as "gay or lesbian"<br>**Heterosexuals:** individuals who self-identify as "heterosexual or straight" | Full-time and part-time workers | **Homosexuals:** N=190<br>**Heterosexuals:** N=8,156 | **Homosexuals:** N=120<br>**Heterosexuals:** N=10,405 | Individual hourly earnings | -1% | -5% | NO | YES (control for an indicator for being either married legally or in a de facto relationship) |
| | 9. 2012-2014 UK Integrated Household Surveys (IHS) | Aksoy, Carpenter and Frank (2016, Industrial and Labor Relations Review) | **Homosexuals 1:** individuals who self-identify as "gay" or "lesbian"<br>**Homosexuals 2:** individuals who self-identify as "gay" or "lesbian" and who report being partnered<br>**Homosexuals 3:** individuals who self-identify as "gay" or "lesbian" and who report being non-partnered<br>**Heterosexuals 1:** individuals who self-identify as "heterosexual"<br>**Heterosexuals 2:** individuals who self-identify as "heterosexual" and who report being partnered<br>**Heterosexuals 3:** individuals who self-identify as "heterosexual" and who report being non-partnered | Full-time and part-time workers | **Homosexuals 1:** N=1,220<br>**Homosexuals 2:** N=unknown<br>**Homosexuals 3:** N=unknown<br>**Heterosexuals 1**: N=73,318<br>**Heterosexuals 2:** N=unknown<br>**Heterosexuals 3:** N=unknown | **Homosexuals 1:** N=839<br>**Homosexuals 2:** N=unknown<br>**Homosexuals 3:** N=unknown<br>**Heterosexuals 1**: N=94,810<br>**Heterosexuals 2:** N=unknown<br>**Heterosexuals 3:** N=unknown | Individual weekly earnings | -4%** (homo 1 vs hetero 1)<br>-5% (homo 2 vs hetero 2)<br>-3% (homo 3 vs hetero 3) | +14%*** (homo 1 vs hetero 1)<br>+22%*** (homo 2 vs hetero 2)<br>-1% (homo 3 vs hetero 3) | YES (control for an indicator for being either married legally or in a *de facto* relationship for the "homo 1 vs hetero 1" comparison, and separate analysis for partnered and non-partnered individuals in the other comparisons) | |



For Official Use

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals (the "first best" option to solve the household specialization bias)? | If "no" to the previous question, is the partnership status of both homosexuals and heterosexuals controlled for (the "second best" option to solve the household specialization bias)? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| US | 10. 1989-1991 General Social Survey (midpoint: 1990) | Badgett (1995, *Industrial and Labor Relations Review*) | **Homosexuals/bisexuals:** individuals who report at least as many same-sex sexual partners as opposite-sex sexual partners since the age of 18<br>**Heterosexuals**: individuals who report less same-sex sexual partners as opposite-sex sexual partners since the age of 18 | Full-time and part-time workers | **Homosexuals/ bisexuals:** N=47<br>**Heterosexuals:** N=901<br><br>(descriptive statistics based on a slightly different (less stringent) definition of homosexuals than the one used in the regressions, whereby homosexuals are individuals who report at least one same-sex sexual partner since the age of 18 (by contrast, heterosexuals are individuals who report no same-sex sexual partner since the age of 18) | **Homosexuals/ bisexuals:** N=34<br>**Heterosexuals:** N=698<br><br>(descriptive statistics based on a slightly different (less stringent) definition of homosexuals than the one used in the regressions, whereby homosexuals are individuals who report at least one same-sex sexual partner since the age of 18 (by contrast, heterosexuals are individuals who report no same-sex sexual partner since the age of 18) | Individual yearly earnings | -27%** | -27%<br><br>(results for women with no work experience) | NO | NO |
| | 11. 1989-1996 US General Social Survey (midpoint: 1991) | Black et al. (2003, *Industrial and Labor Relations Review*) | **Homosexuals:** individuals who report only same-sex sexual partners in the past 5 years<br>**Heterosexuals:** individuals who report at least one opposite-sex sexual partner in the past 5 years | Full-time workers | **Homosexuals:** N=47<br>**Heterosexuals:** N=1,798 | **Homosexuals:** N=28<br>**Heterosexuals:** N=1,529 | Individual yearly earnings | -11% | +32%** | NO | NO |

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals (the "first best" option to solve the household specialization bias)? | If "no" to the previous question, is the partnership status of both homosexuals and heterosexuals controlled for (the "second best" option to solve the household specialization bias)? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| US | 12. 1989-1996 US General Social Survey (midpoint: 1991) | Blandford (2003, *Industrial and Labor Relations Review*) | **Homosexuals/bisexuals:** individuals who report at least one same-sex sexual partner in the past year and who are not "masked" (i.e. married with an opposite-sex person)<br>**Heterosexuals 1:** individuals who report no same-sex sexual partner in the past year and who are married with an opposite-sex person<br>**Heterosexuals 2:** individuals who report no same-sex sexual partner in the past year and who are unmarried | Full-time workers between 18 and 64 | **Homosexuals/ bisexuals:** N=78<br>**Heterosexuals 1:** N=1,828<br>**Heterosexuals 2:** N=1,115<br><br>(descriptive statistics based on a slightly different (less stringent) sample than the one used in the regressions since it includes part-time workers) | **Homosexuals/ bisexuals:** N=61<br>**Heterosexuals 1:** N=1,567<br>**Heterosexuals 2:** N=1,316<br><br>(descriptive statistics based on a slightly different (less stringent) sample than the one used in the regressions since it includes part-time workers) | Individual yearly earnings | -30%***<br>(homo/bi vs hetero 1)<br><br>-19% (unknown stat sig)<br>(homo/bi vs hetero 2) | +17%*<br>(homo/bi vs hetero 1)<br><br>+15% (unknown stat sig)<br>(homo/bi vs hetero 2) | NO | NO |
| | 13. 1988-1994 National Health and Nutrition Examination Surveys (NHANES III) (midpoint: 1991) | Carpenter (2007, *Labour Economics*) | **Homosexuals/bisexuals 1:** unmarried non-partnered individuals who report at least one lifetime same-sex sexual partner<br>**Homosexuals/bisexuals 2:** unmarried non-partnered individuals who report at least as many lifetime same-sex as opposite-sex sexual partners<br>**Homosexuals/bisexuals 3:** unmarried non-partnered individuals who report more lifetime same-sex than opposite-sex sexual partners<br>**Heterosexuals 1:** unmarried non-partnered individuals who report no lifetime same-sex sexual partner<br>**Heterosexuals 2:** unmarried non-partnered individuals who report less lifetime same-sex than opposite-sex sexual partners<br>**Heterosexuals 3:** unmarried non-partnered individuals who report at most as many lifetime same-sex as opposite-sex sexual partners | Full-time and part-time male workers between 18 and 59 | **Homosexuals/ bisexuals 1:** N=37<br>**Homosexuals/ bisexuals 2:** N=26<br>**Homosexuals/ bisexuals 3:** N=21<br>**Heterosexuals 1:** N=554<br>**Heterosexuals 2:** N=565<br>**Heterosexuals 3:** N=570 | Not studied | Individual yearly earnings | -17%<br>(homo/bi 1 vs hetero 1)<br><br>-20%*<br>(homo/bi 2 vs hetero 2)<br><br>-26%***<br>(homo/bi 3 vs hetero 3) | Not studied | YES<br>(the analysis focuses on non-partenered individuals) | |



For Official Use

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals (the "first best" option to solve the household specialization bias)? | If "no" to the previous question, is the partnership status of both homosexuals and heterosexuals controlled for (the "second best" option to solve the household specialization bias)? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| US | 14. 1991-1996 US General Social Survey (midpoint: 1993) | Berg and Lien (2002, *Contemporary Economic Policy*) | **Homosexuals/bisexuals:** individuals who report at least one same-sex sexual partner in the past 5 years<br>**Heterosexuals:** individuals who report no same-sex sexual partner in the past 5 years | Full-time workers | **Homosexuals/ bisexuals:** N=64<br>**Heterosexuals:** N=1,513 | **Homosexuals/ bisexuals:** N=52<br>**Heterosexuals:** N=1,258 | Individual yearly earnings | -22%*** | +30%** | NO | NO |
| | 15. 1988-2006 General Social Survey (midpoint: 1994) | Cushing-Daniels and Yeung (2009, *Contemporary Economic Policy*) | **Homosexuals 1:** individuals who report only same-sex sexual partner in the past year and who are not "masked" (i.e. married with an opposite-sex person - no possibility of being married to a same-sex person)<br>**Homosexuals 2:** individuals who report only same-sex sexual partner in the past 5 years and who are not "masked" (i.e. married with an opposite-sex person - no possibility of being married to a same-sex person)<br>**Heterosexuals 1:** individuals who report no same-sex sexual partner in the past year and who are married with an opposite-sex person<br>**Heterosexuals 2:** individuals who report no same-sex sexual partner in the past year and who are unmarried<br>**Heterosexuals 3:** individuals who report no same-sex sexual partner in the past 5 years and who are married with an opposite-sex person<br>**Heterosexuals 4:** individuals who report no same-sex sexual partner in the past 5 years and who are unmarried | Full-time workers between 18 and 64 | **Homosexuals:** N=155<br>**Heterosexuals:** N=4,692<br><br>("homosexuals" includes individuals who report only same-sex sexual partners in the past year who are both masked (i.e. married with an opposite-sex person) and unmasked (i.e. unmarried); "heterosexuals" includes both married and unmarried individuals who report no same-sex sexual partner in the past year) | **Homosexuals:** N=109<br>**Heterosexuals:** N=3,950<br><br>("homosexuals" includes individuals who report only same-sex sexual partners in the past year who are both masked (i.e. married with an opposite-sex person) and unmasked (i.e. unmarried); "heterosexuals" includes both married and unmarried individuals who report no same-sex sexual partner in the past year) | Individual yearly earnings | -17%***<br>(homo 1 vs hetero 1)<br><br>-1% (unknown stat sig)<br>(homo 1 vs hetero 2)<br><br>-18%***<br>(homo 2 vs hetero 3)<br><br>-2% (unknown stat sig)<br>(homo 2 vs hetero 4) | +12%<br>(homo 1 vs hetero 1)<br><br>+9% (unknown stat sig)<br>(homo 1 vs hetero 2)<br><br>+11%<br>(homo 2 vs hetero 3)<br><br>+9.5% (unknown stat sig)<br>(homo 2 vs hetero 4) | NO | NO |

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals (the "first best" option to solve the household specialization bias)? | If "no" to the previous question, is the partnership status of both homosexuals and heterosexuals controlled for (the "second best" option to solve the household specialization bias)? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| US | 16. 1988–2004 General Social Survey (GSS) and 1992 National Health and Social Life Survey (NHSLS). (midpoint: 1994) | Zavodny (2008, *Review of Economics of the Household*) | **Homosexuals 1:** unmarried partnered (with a same-sex person) individuals who report only same-sex sexual partners in the past year<br>**Homosexuals 2:** unmarried non-partnered individuals who report only same-sex sexual partners in the past year<br>**Heterosexuals 1:** married partnered (with an opposite-sex person) individuals who report only opposite-sex sexual partners in the past year<br>**Heterosexuals 2**: unmarried partnered (with an opposite-sex person) individuals who report only opposite-sex sexual partners in the past year<br>**Heterosexuals 3:** unmarried non-partnered individuals who report only opposite-sex sexual partners in the past year | Full-time male workers between 18 and 64 | **Homosexuals 1:** N=33<br>**Homosexuals 2:** N=78<br>**Heterosexuals 1:** N=3,213<br>**Heterosexuals 2:** N=290<br>**Heterosexuals 3:** N=1,299 | Not studied | Individual yearly earnings | -17%***<br>(homo 1 vs hetero 1)<br>-2%<br>(homo 1 vs hetero 2)<br>-4%<br>(homo 2 vs hetero 3) | Not studied | YES<br>(partnered and non-partnered individuals are analyzed separately) | |
| | 17. 1994-2008 General Social Survey (midpoint: 2000) | Martell (2013a, *Eastern Economic Journal*) | **Homosexuals 1:** individuals who report at least one same-sex sexual partner in the past year<br>**Homosexuals 2:** individuals who report at least one same-sex sexual partner in the past 5 years<br>**Homosexuals 3:** individuals who report at least one same-sex sexual partner since 18<br>**Homosexuals 4:** individuals who report more than half of sex partners since 18 to be of the same sex<br>**Heterosexuals 1:** individuals who report only opposite-sex sexual partner in the past year<br>**Heterosexuals 2:** individuals who report only opposite-sex sexual partner in the past 5 years<br>**Heterosexuals 3:** individuals who report only opposite-sex sexual partner since 18<br>**Heterosexuals 4**: individuals who report less than half of sex partners since 18 to be of the same sex | Full-time workers above 18 | **Homosexuals 1:** N=11 in 2008, which would yield N=11*8=88 between 1994 and 2008<br>**Homosexuals 2:** N=13*8=104<br>**Homosexuals 3:** N=37*8=296<br>**Homosexuals 4:** N=11*8=88<br>**Heterosexuals 1**: N=415*8=3,320<br>**Heterosexuals 2:** N=413*8=3,304<br>**Heterosexuals 3:** N=389*8=3,112<br>**Heterosexuals 4:** N=415*8=3,320 | Not studied | Individual hourly earnings | -15%**<br>(homo 1 vs hetero 1)<br>-15%**<br>(homo 2 vs hetero 2)<br>-9.5%*<br>(homo 3 vs hetero 3)<br>-12.5%*<br>(homo 4 vs hetero 4) | Not studied | NO | NO |
| | 18. 2001 California Health Interview Survey | Carpenter (2005, *Industrial and Labor Relations Review*) | **Homosexuals:** individuals who self-identify as "gay" or "lesbian"<br>**Heterosexuals:** individuals who do not self-identify as "gay", "lesbian", or "bisexual" | Full-time workers between 18 and 64 (self-employed individuals excluded) | **Homosexuals:** N=578<br>**Heterosexuals:** N=15,968 | **Homosexuals:** N=335<br>**Heterosexuals:** N=21,515 | Individual hourly earnings | -2% | -3% | NO | NO |



For Official Use

| Country | Survey | Study | Definition of homosexuals/ heterosexuals | Sample description | Sample size (homosexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Homosexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals (the "first best" option to solve the household specialization bias)? | If "no" to the previous question, is the partnership status of both homosexuals and heterosexuals controlled for (the "second best" option to solve the household specialization bias)? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| US | 19. 1994-2010 General Social Survey (midpoint: 2002) | Martell (2013b, *Journal of Labor Research*) | **Homosexuals 1:** individuals who report at least one same-sex sexual partner in the past year<br>**Homosexuals 2:** individuals who report at least one same-sex sexual partner in the past 5 years<br>**Homosexuals 3:** individuals who report at least one same-sex sexual partner since 18<br>**Homosexuals 4:** individuals who report more than half of sex partners since 18 to be of the same sex<br>**Heterosexuals 1:** individuals who report only opposite-sex sexual partner in the past year<br>**Heterosexuals 2:** individuals who report only opposite-sex sexual partner in the past 5 years<br>**Heterosexuals 3:** individuals who report only opposite-sex sexual partner since 18<br>**Heterosexuals 4**: individuals who report less than half of sex partners since 18 to be of the same sex | Full-time workers above 18 | **Homosexuals 1:** N=11*9=99<br>**Homosexuals 2:** N=13*9=117<br>**Homosexuals 3:** N=37*9=333<br>**Homosexuals 4:** N=11*9=99<br>**Heterosexuals 1**: N=415*9=3,735<br>**Heterosexuals 2:** N=413*9=3,717<br>**Heterosexuals 3:** N=389*9=3,501<br>**Heterosexuals 4:** N=415*8=3,735<br><br>(approximations based on Martell (2013a)) | Not studied | Individual hourly earnings | -18.5%**<br>(homo 1 vs hetero 1)<br><br>-17%**<br>(homo 2 vs hetero 2)<br><br>-12.5%*<br>(homo 3 vs hetero 3)<br><br>-14%<br>(homo 4 vs hetero 4)<br><br>(results for homosexuals who live in states with no ENDA (Employment Nondiscrimination Act)) | Not studied | NO | NO |
| | 20. 2007 National Longitudinal Study of Adolescent Health (Add Health) | Sabia (2014, *Industrial and Labor Relations Review*) | **Homosexuals 1:** individuals who self-identify as "100% homosexual"<br>**Homosexuals 2:** individuals who report only same-sex sexual partners since 17<br>**Homosexuals 3:** individuals who report being romantically attracted to same-sex individuals only<br>**Heterosexals 1:** individuals who self-identify as "100% heterosexual"<br>**Heterosexals 2**: individuals who report only opposite-sex sexual partners since 17<br>**Heterosexals 3:** individuals who report being romantically attracted to opposite-sex individuals only | Full-time and part-time workers between 26 and 34 | **Homosexuals 1:** N=132<br>**Homosexuals 2:** N=163<br>**Homosexuals 3:** N=171<br>**Heterosexuals 1**: N=6,783<br>**Heterosexuals 2:** N=6,159<br>**Heterosexuals 3:** N=6,714 | **Homosexuals 1:** N=77<br>**Homosexuals 2:** N=77<br>**Homosexuals 3:** N=121<br>**Heterosexuals 1**: N=6,164<br>**Heterosexuals 2:** N=5,912<br>**Heterosexuals 3:** N=6,738 | Individual hourly earnings | -11%*<br>(homo 1 vs hetero 1)<br><br>-12%**<br>(homo 2 vs hetero 2)<br><br>-12%**<br>(homo 3 vs hetero 3) | -5%<br>(homo 1 vs hetero 1)<br><br>-7%<br>(homo 2 vs hetero 2)<br><br>-4.5%<br>(homo 3 vs hetero 3) | NO | YES<br>(control for an indicator for being in (or having experienced) a live-in romantic relationship) |

*Source*: Author's calculation. *, ** and *** indicate statistical significance at the 90%, 95% and 99% confidence levels. Compared to the meta-analysis performed by Klawitter (2015) regarding the gap in individual earnings between homosexuals and heterosexuals, Table A8 includes 4 more studies using individuals-based data: Sabia (2014), Sabia and Wooden (2015), Aksoy, Carpenter and Frank (2016) and Bryson (2016). Moreover, it discards Carpenter (2004) given that this study focuses on household, not individual earnings.

## Annex Table A9. Summary of studies using individuals-based data to test for an individual earnings gap between bisexuals and heterosexuals, as of 2016

| Country | Survey | Study | Definition of bisexuals/ heterosexuals | Sample description | Sample size (bisexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Bisexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals? | If "no" to the previous question, is the partnership status of both bisexuals and heterosexuals controlled for? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| **AUSTRALIA** | 1. 2000 Australian Longitudinal Study on Women's Health (ALSWH) | Carpenter (2008b, *Review of Economics of the Household*) | **Bisexuals:** individuals who self-identify as "bisexual" **Heterosexuals:** individuals who self-identify as "mainly heterosexual" or "exclusively heterosexual" | Full-time or part-time female workers, between 22 and 27 | Not studied | **Bisexuals:** N=43 **Heterosexuals:** N=7,031 | Individual weekly earnings | Not studied | -3% | NO | YES (control for an indicator for being either married legally or in a *de facto* relationship) |
| | 2. 2012 Household, Income and Labour Dynamics in Australia (HILDA) Survey | Sabia and Wooden (2015, unpublished manuscript) | **Bisexuals:** individuals who self-identify as "bisexual" **Heterosexuals:** individuals who self-identify as "heterosexuals or straight" | Full-time workers between 18 and 64 | **Bisexuals:** N=43 **Heterosexuals:** N=4,387 | **Bisexuals**: N=107 **Heterosexuals:** N=5,148 | Individual hourly earnings | -1% | -2% | NO | NO |
| **GREECE** | 3. 2008–2009 Athens Area Study (AAS) | Drydakis (2012, *Applied Economics*) | **Bisexuals:** individuals who self-identify as "bisexual" **Heterosexuals:** individuals who self-identify as "heterosexual" | Full-time and part-time male workers between 18 and 65 | **Bisexuals:** N=58 **Heterosexuals:** N=6,305 | Not studied | Individual hourly earnings | -5%*** | Not studied | NO | NO |
| **INTERNATIONAL** | 4. 1994 International Social Survey Programme (ISSP) Survey on "Family and Gender Roles" (Australia, Bulgaria, Ireland, Poland and USA) | Heineck (2009, *Applied Economics Letters*) | **Bisexuals** individuals who report both same-sex and opposite-sex sexual partners in the past 5 years **Heterosexuals:** individuals who report only opposite-sex sexual partners in the past 5 years | Full-time and part-time workers between 18 and 60 | **Bisexuals:** unknown (but N=37 for both male and female heterosexuals) **Heterosexuals**: unknown (but N=3,969 for both male and female heterosexuals) | **Bisexuals:** unknown (but N=37 for both male and female heterosexuals) **Heterosexuals:** unknown (but N=3,969 for both male and female heterosexuals) | Individual monthly earnings | -5% | -11% | NO | NO |



For Official Use

| Country | Survey | Study | Definition of bisexuals/ heterosexuals | Sample description | Sample size (bisexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Bisexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals? | If "no" to the previous question, is the partnership status of both bisexuals and heterosexuals controlled for? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| **NETHERLANDS** | 5. Representative cohort of students who graduated from tertiary education in the years 1998/1999 and 1999/2000 and that the authors follow for their first 20 months in the labor market. (midpoint: 2001) | Plug and Berkhout (2004, *Journal of Population Economics*) | **Bisexuals** individuals who describe their sexual preference as being "both men and women"<br>**Heterosexuals:** individuals who describe their sexual preference as being "only women" for men and "only men" for women | Full-time and part-time workers in their late 20s | **Bisexuals:** N=53<br>**Heterosexuals:** N=4,869 | **Bisexuals:** N=122<br>**Heterosexuals:** N=6,117 | Individual hourly earnings | +3% | +5.5%*** | NO | YES (control for an indicator for being either married legally or in a *de facto* relationship) |
| **UK** | 6. 2011 Workplace Employment Relations Survey | Bryson (2016, *Work, Employment and Society*) | **Bisexuals:** individuals who self-identify as "bisexual"<br>**Heterosexuals:** individuals who self-identify as "heterosexual or straight" | Full-time and part-time workers | **Bisexuals:** N=51<br>**Heterosexuals:** N=8,156 | **Bisexuals:** N=65<br>**Heterosexuals:** N=8,156 | Individual hourly earnings | -13%** | -8% | NO | YES (control for an indicator for being either married legally or in a *de facto* relationship) |
| | 7. 2012-2014 UK Integrated Household Surveys (IHS) | Aksoy, Carpenter and Frank (2016, *Industrial and Labor Relations Review*) | **Bisexuals 1:** individuals who self-identify as "bisexual"<br>**Bisexuals 2:** individuals who self-identify as "bisexual" and who report being partnered<br>**Bisexuals 3:** individuals who self-identify as "bisexual" and who report being non-partnered<br>**Heterosexuals 1:** individuals who self-identify as "heterosexual"<br>**Heterosexuals 2:** individuals who self-identify as "heterosexual" and who report being partnered<br>**Heterosexuals 3:** individuals who self-identify as "heterosexual" and who report being non-partnered | Full-time and part-time workers | **Bisexuals 1:** N=176<br>**Bisexuals 2:** N=unknown<br>**Bisexuals 3:** N=unknown<br>**Heterosexuals 1**: N=73,318<br>**Heterosexuals 2:** N=unknown<br>**Heterosexuals 3:** N=unknown | **Bisexuals 1:** N=429<br>**Bisexuals 2:** N=unknown<br>**Bisexuals 3:** N=unknown<br>**Heterosexuals 1**: N=94,810<br>**Heterosexuals 2:** N=unknown<br>**Heterosexuals 3:** N=unknown | Individual weekly earnings | -17%***<br>(bi 1 vs hetero 1)<br>-21.5%***<br>(bi 2 vs hetero 2)<br>-12.5%<br>(bi 3 vs hetero 3) | -6%<br>(bi 1 vs hetero 1)<br>-4%<br>(bi 2 vs hetero 2)<br>+16%**<br>(bi 3 vs hetero 3) | YES (control for an indicator for being either married legally or in a *de facto* relationship for the "homo 1 vs hetero 1" comparison and separate analysis for partnered and non-partnered individuals in the other comparisons) | YES |

| Country | Survey | Study | Definition of bisexuals/ heterosexuals | Sample description | Sample size (bisexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Bisexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals? | If "no" to the previous question, is the partnership status of both bisexuals and heterosexuals controlled for? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| US | 8. 1989-1996 US General Social Survey (midpoint: 1991) | Black et al. (2003, *Industrial and Labor Relations Review*) | **Bisexuals:** individuals who report both same-sex and opposite-sex sexual partners in the past 5 years<br>**Heterosexuals:** individuals who report at least one opposite-sex sexual partner in the past 5 years | Full-time workers | **Bisexuals:**<br>N=22<br>**Heterosexuals:**<br>N=1,798 | **Bisexuals:**<br>N=26<br>**Heterosexuals:**<br>N=1,529 | Individual yearly earnings | -7% | +4% | NO | NO |
| | 9. 1988-2006 General Social Survey (midpoint: 1994) | Cushing-Daniels and Yeung (2009, *Contemporary Economic Policy*) | **Bisexuals 1:** individuals who report both same-sex and opposite-sex sexual partners in the past year and who are not "masked" (i.e. married with an opposite-sex person)<br>**Bisexuals 2:** individuals who report both same-sex and opposite-sex sexual partners in the past 5 years and who are not "masked" (i.e. married with an opposite-sex person)<br>**Heterosexuals 1:** individuals who report no same-sex sexual partner in the past year and who are married with an opposite-sex person<br>**Heterosexuals 2:** individuals who report no same-sex sexual partner in the past year and who are unmarried<br>**Heterosexuals 3:** individuals who report no same-sex sexual partner in the past 5 years and who are married with an opposite-sex person<br>**Heterosexuals 4:** individuals who report no same-sex sexual partner in the past 5 years and who are unmarried | Full-time workers between 18 and 64 | **Bisexuals:**<br>N=29<br>**Heterosexuals:**<br>N=4,692<br><br>("bisexuals" includes individuals who report both same-sex and opposite-sex sexual partners in the past year who are both masked (i.e. married with an opposite-sex person) and unmasked (i.e. unmarried); "heterosexuals" includes both married and unmarried individuals who report no same-sex sexual partner in the past year) | **Bisexuals:**<br>N=27<br>**Heterosexuals:**<br>N=3,950<br><br>("bisexuals" includes individuals who report both same-sex and opposite-sex sexual partners in the past year who are both masked (i.e. married with an opposite-sex person) and unmasked (i.e. unmarried); "heterosexuals" includes both married and unmarried individuals who report no same-sex sexual partner in the past year) | Individual yearly earnings | -32%***<br>(bi 1 vs hetero 1)<br><br>-18% (unknown stat sig)<br>(bi 1 vs hetero 2)<br><br>-22%**<br>(bi 2 vs hetero 3)<br><br>-7% (unknown stat sig)<br>(bi 2 vs hetero 4) | +14.5%<br>(bi 1 vs hetero 1)<br><br>+12% (unknown stat sig)<br>(bi 1 vs hetero 2)<br><br>-3%<br>(bi 2 vs hetero 3)<br><br>-4% (unknown stat sig)<br>(bi 2 vs hetero 4) | NO (possibility to compare unmarried bisexuals with unmarried heterosexuals, but "unmarried" is not equivalent to non-partnered) | NO |



For Official Use

| Country | Survey | Study | Definition of bisexuals/ heterosexuals | Sample description | Sample size (bisexuals typically oversampled as compared to heterosexuals) | | Dependent variable | Bisexuals-heterosexuals gap (results stemming from a multivariate Ordinary Least Squares analysis unless otherwise specified) | | Is the analysis performed by distinguishing between partnered and non-partnered individuals? | If "no" to the previous question, is the partnership status of both bisexuals and heterosexuals controlled for? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Men | Women | | Men | Women | | |
| US | 10. 2001 California Health Interview Survey | Carpenter (2005, *Industrial and Labor Relations Review*) | **Bisexuals:** individuals who self-identify as "bisexual"<br>**Heterosexuals:** individuals who do not self-identify as "gay", "lesbian", or "bisexual" | Full-time workers between 18 and 64 (self-employed individuals excluded) | **Bisexuals:**<br>N=245 (145 unmarried and 98 married)<br>**Heterosexuals:**<br>N=15,968 | **Bisexuals:**<br>N=479 (345 unmarried and 134 married)<br>**Heterosexuals:**<br>N=21,515 | Individual hourly earnings | -9.5% | -10%* | NO | YES<br>(control for the marital status of both bisexuals and heterosexuals, but not for their partnership status) |
| | 11. 2007 National Longitudinal Study of Adolescent Health (Add Health) | Sabia (2014, *Industrial and Labor Relations Review*) | **Bisexuals 1:** individuals who self-identify as "mostly heterosexual", or "bisexual", or "mostly homosexual"<br>**Bisexuals 2:** individuals who report both opposite-sex and same-sex sexual partners since 17<br>**BIsexuals 3:** individuals who report being romantically attracted to both opposite-sex and same-sex individuals<br>**Heterosexals 1:** individuals who self-identify as "100% heterosexual"<br>**Heterosexals 2**: individuals who report only opposite-sex sexual partners since 17<br>**Heterosexuals 3:** individuals who report being romantically attracted to opposite-sex individuals only | Full-time and part-time workers between 26 and 34 | **Bisexuals 1:**<br>N=354<br>**Bisexuals 2:**<br>N=243<br>**Bisexuals 3:**<br>N=162<br>**Heterosexuals 1**:<br>N=6,783<br>**Heterosexuals 2:**<br>N=6,159<br>**Heterosexuals 3:**<br>N=6,714 | **Bisexuals 1:**<br>N=1,465<br>**Bisexuals 2:**<br>N=857<br>**Bisexuals 3:**<br>N=608<br>**Heterosexuals 1**:<br>N=6,164<br>**Heterosexuals 2:**<br>N=5,912<br>**Heterosexuals 3:**<br>N=6,738 | Individual hourly earnings | -12%*<br>(bi 1 vs hetero 1)<br><br>-12%**<br>(bi 2 vs hetero 2)<br><br>-12%**<br>(bi 3 vs hetero 3) | -5%**<br>(bi 1 vs hetero 1)<br><br>-5%*<br>(bi 2 vs hetero 2)<br><br>-8.5%***<br>(bi 3 vs hetero 3) | NO | YES<br>(control for an indicator for being in (or having experienced) a live-in romantic relationship) |

*Source*: Author's calculation. *, ** and *** indicate statistical significance at the 90%, 95% and 99% confidence levels.