

A Review of the Economics of Sexual Orientation and Gender Identity[†]

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This article reviews the growing literature on the economics of sexual orientation and gender identity, a field that did not exist thirty years ago. We summarize, evaluate, and synthesize the literature on LGBTQ+ people's economic lives and livelihoods across key decision points in the life course: human capital investments, family formation and dissolution, and labor market activities. We identify common themes and patterns in the literature and outline important areas for further inquiry. (JEL I1, I2, I3, J1, J2, J3, J7)

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1. Introduction

This article reviews research on the economic lives and livelihoods of sexual and gender diverse populations, commonly understood to include lesbian, gay, bisexual, transgender, and queer individuals (LGBTQ+).¹ Like their cisgender and heterosexual counterparts, LGBTQ+ people make schooling decisions, pursue relationships, enter the labor force, build families, choose where to live, find housing, and contribute to society in varied and substantive ways. But LGBTQ+ individuals also face very different economic constraints than cisgender and heterosexual people. They may face homophobia and/or transphobia from family members, students, colleagues, employers, landlords, mortgage brokers, insurers, and other economic actors.

LGBTQ+ people have faced significant limits on personal freedoms, legal rights and responsibilities in the areas of sexual activity, romantic partnership, marriage, and family formation. For centuries, LGBTQ+ individuals have been ostracized by the general population, treated as criminals by governments, and seen as sick, infected, and infectious by the medical community. These attitudes, laws, and policies have often prevented LGBTQ+ people from accumulating human capital, having a healthy life, participating fully in social and work environments, and achieving their full economic potential, thus likely leading to lower aggregate economic growth (Badgett, Waaldijk, and Rodgers 2019).

Perhaps in part because of those constraints, economics research on LGBTQ+ people was slow to emerge and began with a very small number of scholars publishing in a very small number of journals, almost exclusively in labor and demographic economics, and almost exclusively about sexual minorities as opposed to gender minorities.² That landscape is tangibly changing, with more research on LGBTQ+ people being published by a wide range of researchers at all levels of economics, from undergraduates to graduate students, recent PhDs, and senior scholars who are interested and able to incorporate sexual and gender minorities in their research due to new understandings, new data, or both. This work is also increasingly being published in a variety of fields beyond labor economics such as public economics, health economics, behavioral/experimental economics, urban economics, and economic history, as well as in general interest economics journals. Moreover, a new and steady stream of economics publications on transgender and nonbinary people is emerging. The result is that the promise for economics research on LGBTQ+ individuals in the coming years looks very bright in ways that could not have been portended when the first economics paper was published on these topics in 1995 (Badgett 1995a).

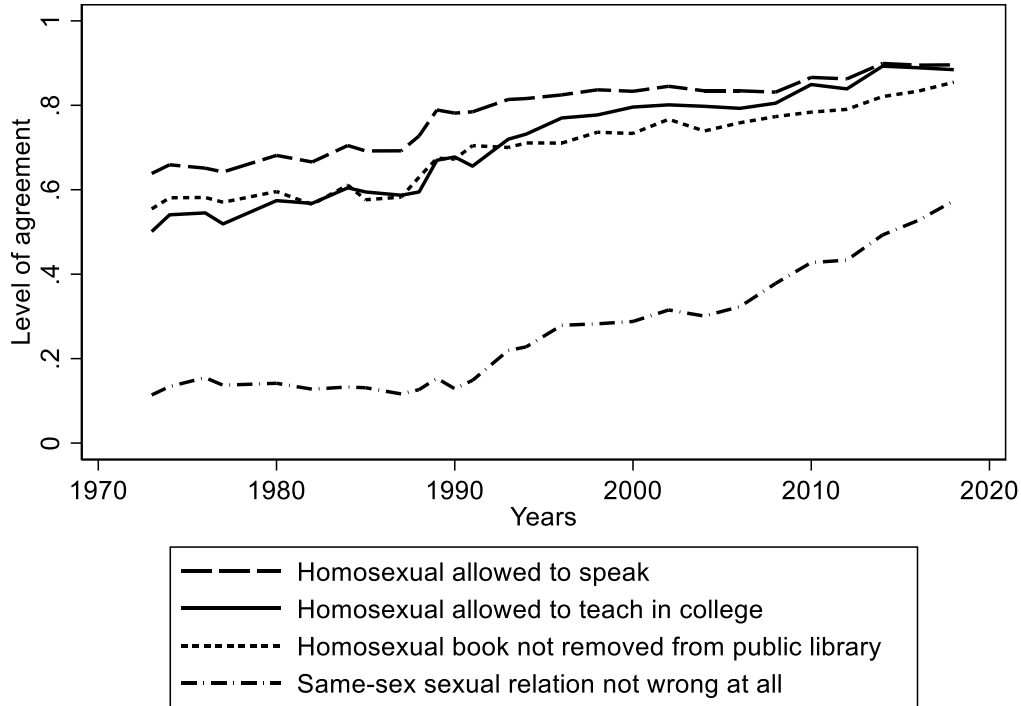
What has changed that has led to these trends? First, societal attitudes have clearly improved in many countries, and this has also occurred in our major professional societies, academic departments, and peer-reviewed journals. These improvements have been large in magnitude and

¹ See the Appendix for an explanation and discussion of these terms.

² Other social sciences started focusing on LGBTQ+ research – and LGBTQ+ (under)representation – earlier than economics (Badgett 2017).

broad across demographic groups. For instance, Figure 1 shows historical trends in attitudes toward sexual minorities in the US using data from the General Social Survey.

Figure 1: Attitudes Towards Sexual Minority People in the US over time



Notes: Weighted statistics (unweighted statistics provide similar trends). Original questions: (1) “There are always some people whose ideas are considered bad or dangerous by other people. [...] And what about a man who admits that he is homosexual [...] Suppose this admitted homosexual wanted to make a speech in your community. Should he be allowed to speak, or not?” (2) “Should such a person be allowed to teach in a college or university, or not?” (3) “If some people in your community suggested that a book he wrote in favor of homosexuality should be taken out of your public library, would you favor removing this book, or not?” (4) “What about sexual relations between two adults of the same sex—do you think it is always wrong, almost always wrong, wrong only sometimes, or not wrong at all?”. Data in Figure 1 reflect the share of GSS respondents who agreed with each of the statements specified in the legend. Respondents who did not answer the relevant questions or who selected “Don’t know” or “Other” have been excluded in the analysis (including those who selected “Don’t know” or “Other” does not affect overall trends). Source: General Social Survey 1972-2018 (Smith et al. 2019). The 2021 GSS has not been included since methodological changes implemented during the COVID-19 pandemic may have affected trend comparisons (GSS 2021).

Similar improvements have also been observed in the recent past regarding attitudes toward transgender people (Lewis et al. 2022). These changes in social attitudes, along with an increase in the share of individuals identifying as LGBTQ+ (J. M. Jones 2023), have coincided with an increased willingness of economics journal editors and referees to consider LGBTQ+ related research as legitimate and worthy of study.

Second, data have become much more available and much higher quality. More surveys in more countries are including direct and indirect ways to identify sexual and gender minorities, and scholars are also increasingly turning to large population registers and administrative datasets or collecting their own data through online platforms or surveys.³ Given the heavy focus in applied economics on empirical evidence, these data innovations have been significant. The upshot is that while LGBTQ+ people have always existed as part of our economy and society, economists have only recently had the opportunity to conduct empirical research on this population.

This article reviews that evidence. In so doing, we build on a small number of prior reviews and meta-analyses (e.g., Klawitter, 2015; Valfort, 2017; Flage, 2019). Our article differs in its comprehensiveness and timeliness. For example, most of the emerging literature on the economics of transgender and nonbinary people was not written at the time of the prior reviews, so our inclusion of that literature is important. Most prior reviews and meta-analyses by economists on LGBTQ+ topics also focus primarily on one outcome (e.g., wages or income as in Klawitter, 2015, or same-sex partnership as in Marcén and Morales, 2022) or one approach (e.g., experimental studies of discrimination as in Flage, 2019). This article aims to cover a wider range of outcomes, approaches, and populations with the goal of unifying and synthesizing the literature. In so doing, we attempt to weigh in on areas of disagreement across studies in the literature on LGBTQ+ people and to identify common takeaways that may guide future work.

It is useful to be explicit about several choices we made to keep this article tractable. First, although the economics literature on gender diverse populations is much smaller than the economics literature on sexual minorities, we have chosen to review the studies of gender diverse people within each relevant section instead of calling these studies out separately. Second, although the economics literature on sexual and gender diverse populations has historically been US-focused, this is changing as new high-quality surveys and administrative datasets from other countries are increasingly becoming available. We incorporate those relevant international studies within each section. Third, because our focus is on the economic contexts of LGBTQ+ *people*, we do not review literatures in adjacent disciplines such as management science that addresses *firms'* choices regarding equity, inclusion, and belonging initiatives related to LGBTQ+ individuals, including the role of policies on firm outcomes (e.g., Hossain et al., 2020; and Do et al., 2022). Similarly, we do not review a literature firmly outside of economics that examines where sexual orientation (and, to a much lesser extent, gender identity) comes from. Genetics, in utero environments, family background/family structure, social context, and other factors have been explored, and this literature continues to evolve (Ablaza, Kabátek, and Perales 2022). Fourth, we do not have space to provide adequate historical and social context regarding laws, policies, and attitudes toward

³ Surveys have included direct questions about same-sex sexual behavior, same-sex sexual attraction, and/or sexual identity. Scholars have also relied on intrahousehold relationships in large datasets such as population censuses to identify same-sex cohabiting couples, commonly understood to be lesbian, gay, and bisexual people in romantic unions. Reporting stigmatized identities or behaviors may introduce disclosure bias concerns: we discuss this below in Section 2.

LGBTQ+ populations and their relationship with contemporary economic outcomes: interested readers can find some of this discussion in the Online Appendix.⁴

We structure this review by examining differences by sexual orientation and gender identity in key economic outcomes at various points in the life course, starting with educational attainment in Section 2 and moving to family outcomes in Section 3 and labor market activity in Section 4.⁵⁻⁶ Section 5 concludes.

2. Education

Multiple studies have documented differences in schooling decisions between gay men, lesbian women, and straight individuals. While different hypotheses have been proposed to explain these differences, no study yet has been able to single out the main driver. Furthermore, most bisexual and transgender individuals, as well as LGBTQ+ youth, appear to struggle while in school and to accumulate fewer years of education.

2.1 Gay Men and Lesbian Women Are More Educated Than Heterosexual Individuals

The key stylized pattern emphasized in several studies on human capital accumulation is that gay and lesbian adults have higher educational levels than heterosexual individuals. Indeed, as first highlighted in Black et al. (2000), both men and women in same-sex couples in the 1990 US Census were more likely to have a college degree or a higher educational qualification than individuals in different-sex couples. These differences were confirmed in the 2000 US Census (Black, Sanders, and Taylor 2007) and are comparable to those observed more recently (Burn and Martell 2020; Badgett, Carpenter, and Sansone 2021) in the American Community Survey (ACS).

Comparable differences are observed outside the US as well, such as in Norway (Andersson et al. 2006) and Sweden (Aldén et al. 2015). It is worth emphasizing that these differences between individuals in same-sex partnerships and different-sex marriages in Nordic countries are observed in population-wide administrative data, rather than in survey data as in the US. Survey data from other countries such as Canada (Carpenter 2008b), France (Laurent and Mihoubi 2012), Germany (Humpert 2016), the UK (Bridges and Mann 2019), Chile, and Uruguay (Brown, Contreras, and Schmidt 2019) further confirmed that individuals in same-sex couples have higher educational levels than individuals in different-sex couples.

⁴ Specifically, Section A of the Online Appendix reviews relevant historical and social context for understanding the economic outcomes of LGBTQ+ individuals. This includes: legal and historical reviews regarding LGBTQ+ individuals, including a discussion of sodomy laws; how the medical community viewed and treated LGBTQ+ individuals, including the role of HIV/AIDS; and current attitudes toward LGBTQ+ individuals including what is known about determinants of those attitudes.

⁵ We do not review evidence on the economic lives of elderly LGBTQ+ individuals. A literature on LGBTQ+ aging exists in sociology, gerontology, and public health (NASEM 2020), but there is very little work in economics or done by economists.

⁶ Section B of the Online Appendix reviews evidence on housing and residential location choices of LGBTQ+ individuals, including studies on housing market discrimination.

These educational advantages are not specific to only individuals in same-sex couples: similar differences have been found in the US when analyzing data including both partnered and unpartnered individuals or when looking at sexual attraction in addition to sexual identity (Black et al. 2000; Badgett, Carpenter, and Sansone 2021; Mittleman 2022).⁷ Higher educational attainments by lesbian women and gay men than by heterosexual individuals have also been documented in Canada (Dilmaghani 2017; Carpenter 2008b), the UK (C. G. Aksoy, Carpenter, and Frank 2018), and Australia (Sabia, Wooden, and Nguyen 2017). Nevertheless, as discussed later in this section, recent studies on sexual minority youth have challenged these stylized patterns, while other researchers have highlighted education disadvantages for other sexual and gender minorities such as bisexual and transgender individuals.

In this section, we review what is known about the sources of these educational differences. We also review evidence on other education-related outcomes for LGBTQ+ people. Notably, we do not review a robust literature on bullying experienced by LGBTQ+ youths, primarily in education, psychology, and child development (Kosciw and Pizmony-Levy 2016). Economists have contributed to some of this work (Drydakis 2019), including the role of policies in affecting bullying risk for LGBTQ+ youths (Rees, Sabia, and Kumpas 2022), but most of this research is outside of economics.

2.2 What Drives the Educational Differences for Gay and Lesbian People?

Several hypotheses have been advanced to explain the differences in educational attainment for gay and lesbian people. These can be divided into five groups: (1) disclosure bias; (2) demographic factors; (3) LGBTQ-friendly universities; (4) labor market returns to education and expected discrimination; (5) household specialization and fertility. Different researchers have tried to test these hypotheses with varying degrees of success, although it has not been possible so far to fully explain such differences. Nevertheless, this literature has already shed some light and provided new perspectives on why individuals may decide to invest in additional human capital. For instance, most of the insights provided in this section can be applied to understand the investment decisions of individuals with other concealable characteristics. In other words, the methodologies and findings of researchers studying LGBTQ+ issues are both inspired by other fields such as gender economics and can also inspire other areas as well, such as economic studies analyzing individuals with invisible disabilities or people with multiple racial backgrounds.

2.2.1 Disclosure bias

Lower propensity to disclose one's sexual orientation or partnership status among lower-educated individuals could explain the overrepresentation of highly-educated individuals in samples of same-sex couples and self-identified sexual minorities. Put differently, only the most economically successful lesbian women and gay men may decide to disclose their sexual orientation in

⁷ Having said that, when focusing on heterogeneity by relationship status, partnered and married lesbian women and gay men do have on average higher educational levels than single lesbian women and gay men (Badgett, Carpenter, and Sansone 2021).

adulthood, while individuals with lower educational levels may prefer not to disclose their relationship status or sexual orientation (Valfort 2017). Black et al. (2000) tested this hypothesis by noting that education levels are highly correlated within families across generations and then comparing the distribution of father's education for gay and heterosexual men. Disclosure bias would lead to a skewed distribution of father's education for gay men (as fathers of less educated gay men would be less likely to appear in such a sub-sample). However, the authors found similar distributions of parental education for both gay and heterosexual men.

Despite this, evidence of disclosure bias does show up in recent studies of same-sex couples. Badgett, Carpenter, and Sansone (2021) noted that, while the share of couples that are same-sex couples has increased over time in the US across all education levels, the increase in the same-sex couple share has been slower among those without a high school diploma. Moreover, Sansone (2019a) found a higher prevalence of individuals without tertiary education among same-sex couples after the legalization of same-sex marriage in the US, which the author suggests was linked to a decline in discrimination towards sexual minorities. Similarly, Lee (2021) found lower average educational differences between sexual minority and heterosexual men in LGBTQ-friendly places. These results could reflect more sexual minority men with fewer years of schooling coming out in friendlier times and places (although an alternative explanation could be that lower expected discrimination in LGBTQ-friendly locations may reduce the incentives to invest in higher education).

Measurement errors may also play a role in the observed education patterns for couples: some different-sex couples may be misclassified as same-sex couples due to errors in the sex variable, thus biasing comparisons between individuals in same-sex and different-sex couples, especially if these errors are more common in certain demographic groups (e.g., older or low-educated individuals). In response to these challenges, the US Census Bureau has started to specifically distinguish between “opposite-sex” and “same-sex” spouse/husband/wife and partners when asking about relationship to the household reference person in its surveys.

2.2.2 Demographic Factors

The aforementioned educational differences cannot be fully explained by demographic factors. While it is true that people in more recent birth cohorts have on average higher levels of education than those in earlier birth cohorts (Ryan and Bauman 2016), and that individuals in same-sex couples – and, more generally, lesbian women and gay men – are younger than their heterosexual counterparts (Badgett, Carpenter, and Sansone 2021), the educational differences by sexual orientation and couple type persist even after controlling for demographic characteristics such as age, race, and ethnicity. Indeed, the advantage for gay men persists across birth cohorts, however, there is a decline in the share of lesbian women with a Bachelor's degree in more recent cohorts (Mittleman 2022).

Similarly, the differences in years of education for gay men and for men in same-sex couples are robust to the inclusion of demographic controls, year fixed effects, and geographical variables.

The differences for lesbian women and women in same-sex couples drop significantly after accounting for such observables but remain positive and statistically significant (Burn and Martell 2020). In line with these results, Plug, Webbink, and Martin (2014) observed higher years of education for lesbian women and gay men than for heterosexual twins in a sample of Australian monozygotic twins, thus accounting for all observed and unobserved characteristics shared by twins. Mittleman (2022) also found that gay men have higher education levels across racial and ethnic groups, but the author did find that the advantage for lesbian women is concentrated among Whites.

2.2.3 LGBTQ-Friendly Universities

LGBTQ-friendly colleges and universities may provide a welcoming environment, thus incentivizing LGBTQ+ teenagers to enroll at a postsecondary institution, as well as allowing individuals to freely explore their sexuality. Findings in Carpenter (2009) support this hypothesis for gay male college students. Carpenter noted in contrast that lesbian women seemed to have a more nuanced college experience: they valued participation in the arts and politics while in college, as well as in athletics, but they did not have higher GPA, they did not spend more time studying, and they were not more socially connected than their heterosexual peers. Other researchers have also noted that the different educational experiences of lesbian women might be related to exposure to feminism and lesbianism in college (Rothblum et al. 2007).

Even if it is true that many colleges provide an overall welcoming campus climate, a substantial fraction of LGBTQ+ individuals reported experiencing harassment or violence on campus because of their sexual and gender identity, not finding their experiences and identities represented in course curricula, and not being treated fairly by faculty members (Rankin, Garvey, and Duran 2019; Beemyn and Rankin 2011), often leading to mental health issues (Oswalt and Wyatt 2011). Some students even decided to go back in the closet when they entered college (Beemyn and Rankin 2011). Indeed, sexual minority individuals are more likely to report educational barriers due to discrimination (Sansone 2019c).

2.2.4 Labor Market Returns to Education and Expected Discrimination

Labor market factors may drive the schooling decisions of lesbian women and gay men. First, as women earn a larger wage premium for college education than men (Jacob 2002; Dougherty 2005), lesbian women – and possibly gay men – may have a similar expectation. If this is true, we would observe in traditional Mincer equations not only that an extra year of education increases wages, but that such increase is larger for lesbian women and gay men than for heterosexual men.

Second, lesbian women may also have to invest more in education to compensate for the expected double gender wage gap affecting both them and their partners.⁸ The direct consequence of such a gender wage gap (Blau and Kahn 2017) is that, even if lesbian women have historically earned on

⁸ Indeed, Aksoy, Chadd, and Koh (2023) show that lesbian women are significantly more likely to anticipate discrimination than gay men.

average more than heterosexual women (Klawitter 2015), women in same-sex couples have lower household incomes and higher poverty rates than individuals in different-sex couples or men in same-sex couples (Badgett 2018; Schneebaum and Badgett 2019). Lesbian women may therefore incorporate these stylized patterns into their schooling decisions and invest more in their own education in order to reduce their vulnerability. One possible way to test this explanation in future research would be to check whether lesbian women have higher educational levels in places with stronger gender norms and higher gender wage gaps, or to estimate whether lesbian women accumulate less human capital when equal pay and sex (rather than sexual orientation) non-discrimination laws are introduced in a country or state.

Third, sexual minorities may expect more discrimination in low-skilled occupations. Therefore, they may want to invest in education for its non-pecuniary (as well as pecuniary) returns – i.e., to access white-collar jobs, more welcoming workplaces environments, and occupations that do not require interactions with (potentially biased) customers – in order to be less likely to experience discrimination from employers, co-workers, and customers. Indeed, as we will discuss in Section 4, sexual minority male workers are more likely to sort into tolerant and/or female-dominated occupations, thus this seems to be a plausible driver of schooling decisions by sexual minorities. More research is needed to test whether lesbian women and gay men accumulate higher levels of human capital in countries that are less tolerant, or whether they invest less in their own education once sexual orientation is included in employment non-discrimination laws.⁹⁻¹⁰

2.2.5 Household Specialization and Fertility

A final explanation follows Becker's work on household economics (Becker 1991). Based on this theory, one could expect different intrahousehold specialization in same-sex and different-sex couples to drive human capital accumulation decisions. Sexual minority women may believe that they are less likely to be the secondary earners in a couple, less likely to have children, and less likely to specialize in home production, thus prompting them to invest more in schooling in order to increase their productivity in the labor market. While this theory fits the data well for lesbian women (especially White lesbian women with the resources to attend college), it does not explain

⁹ In an unpublished manuscript, Schneebaum and Murray-Close (2018) conducted some preliminary tests for most of the hypotheses discussed in this sub-section. The authors showed that in a standard Mincerian wage specification the returns to schooling are not statistically different for individuals in same-sex versus different-sex couples. The authors also found fewer educational differences between women in same-sex and different-sex couples in US states with smaller gender wage gaps. In addition, they showed a positive relationship between having a Bachelor's degree and working in a tolerant occupation. In contrast, Jepsen (2007) found a lower return to a college degree for women in same-sex couples compared to women married to men.

¹⁰ Interestingly, Lee (2021) showed that lower-ability sexual minority men were more likely to attend college than heterosexual men with similar ability levels, thus supporting the hypothesis in the previous section that these individuals may more highly value attending higher education institutions. However, lower-ability sexual minority men are no more likely to actually obtain a four-year college degree, thus disputing the hypothesis that these individuals may seek higher educational qualification to protect themselves against discrimination in the labor market.

why gay men would invest more in human capital accumulation than heterosexual men, who historically have been the primary household earners.¹¹

In contrast with this hypothesis, the educational differences between gay/lesbian and heterosexual individuals are robust to controlling for differential effects of parenthood by sexual orientation (Burn and Martell 2020). Moreover, the educational difference by couple type has persisted over time even though different-sex couples exhibit patterns of household division of labor which are increasingly similar to those of same-sex couples (Giddings et al. 2014).

2.3 Is There Still a Difference in Education Levels?

The currently available datasets are far from ideal, especially when focusing on sexual minorities other than lesbian women and gay men, or when looking at transgender individuals. In addition, analyses of the intersection of race, ethnicity, and sexual orientation in education are especially scarce (Beattie, Dyke, and Hagaman 2021). Nevertheless, new emerging datasets are allowing researchers to track respondents over time, to have a better understanding of their sexuality and gender identity, and to analyze the educational choices of the youngest cohorts – who are the ones with the largest share of individuals identifying as LGBTQ+ (J. M. Jones 2023).

The educational differences highlighted so far seem even more puzzling when compared with recent studies that focus on a single cohort, on young adults, or on new datasets with self-reported sexual orientation, sexual attraction, or sexual behavior. These studies do not always support the conclusion that sexual minority individuals have higher educational levels than their heterosexual counterparts (Beattie, Dyke, and Hagaman 2021; Fine 2015; Pearson and Wilkinson 2017; Mittleman 2022). For instance, Sansone (2019c) found that sexual minority youth had lower educational performance in high school and were less likely to be attending college. Similarly, Burn and Martell (2020) recently found that lesbian women had fewer years of education than heterosexual women. Lee (2021) hypothesized that these lower educational achievements may have been driven by sexual minority women facing lower discrimination in masculine occupations that require fewer years of schooling. Gay men seem instead to maintain an educational advantage in some contexts (Mollborn and Everett 2015; Mittleman 2022).

Related to the literature on identity economics and schooling (Akerlof and Kranton 2002), interactions between social norms, identity theory, and gender may partially explain these different educational outcomes for young gay men and young lesbian women (Mollborn and Everett 2015). In other words, young gay men may not feel the need to conform to the heteronormative masculine ideal of the straight male student uninterested in his educational career, thus increasing their own effort in school. Lesbian women may be instead more likely to rebel against the ideal of the “perfect straight-A girl”, thus negatively affecting their educational achievements. Mittleman (2022) noted that gender non-conforming behaviors were positively associated with educational

¹¹ One could also argue that the existing models of household economics may not represent well intrahousehold specialization within same-sex couples. Future research could thus modify current household bargaining models to better fit these stylized patterns about men and women in same-sex couples (Martell and Roncolato 2022).

outcomes for gay boys, but negatively associated with educational outcomes for lesbian girls. So, while lower household specialization and fertility may explain the higher educational level of lesbian adults observed in the past, the historical reversal pushing more straight women to go to college, as well as the idea of femininity being linked to academic success, could explain the recent lower achievements among lesbian girls.

More generally, individuals who identify as sexual minorities earlier in life may be more likely to struggle in hostile school environments. Indeed, school authorities may be reluctant to accept students perceived as gay (Koehler, Harley, and Menzies 2018), while sexual minority students are more likely to experience bullying (Humphries et al. 2021), and they are at higher risk of substance use (Goldbach et al. 2014). It is possible that these students who identify as sexual minorities earlier in life may become resilient, develop their grit (Duckworth et al., 2007), and then quickly catch up in their education performance once they live in a more welcoming environment such as a college campus – often far from their original home and/or in large urban areas (Rothblum et al. 2007) – becoming the highly educated sexual minority adults observed in datasets such as the ACS or the US Census. However, results in Pearson and Wilkinson (2017) seem to suggest that, if anything, individuals who started to experience same-sex sexuality in adolescence were less likely to complete college, thus not reporting any evidence of these individuals catching up.

One related potential explanation for the advantages reported among all gay and lesbian adults versus the disadvantages reported for some sexual minority youths in recent cohorts could be that additional – highly educated – respondents might identify as sexual minorities later in life (or that some individuals who struggled in high school and identified as sexual minorities in adolescence may no longer identify as such in adulthood). For example, previous studies have found that individuals – especially men (Ueno, Roach, and Peña-Talamantes 2013b; Pearson and Wilkinson 2017) – who identified later in life as sexual minorities were more likely to have higher educational qualifications (Barrett, Pollack, and Tilden 2002).

Alternatively, these discrepancies between highly-educated lesbian and gay adults and academically struggling sexual minority youth could be seen as supporting the disclosure bias hypothesis highlighted in this section: poorly educated adults may have been less willing to self-identify as sexual minorities or as members of same-sex couples in previous surveys. This explanation is supported by the finding in Pathela et al. (2006) that men who had sex with men exclusively but self-identified as heterosexual were more likely to be racial or ethnic minorities, be foreign-born, and have lower educational attainments and income levels.

2.4 What About Other Sexual and Gender Minorities?

The higher educational levels of lesbian women and gay men are not usually found when looking at other sexual minorities, nor when focusing on transgender individuals.

2.4.1 Bisexual and Other Sexual Minority Individuals

Bisexual individuals are equally or even less likely than heterosexual individuals to have a Bachelor's degree (Carpenter 2005; Badgett, Carpenter, and Sansone 2021; Mittleman 2022). The share of individuals with a Bachelor's degree is even lower among men who identify as 'something else' when asked about their sexual orientation (Badgett, Carpenter, and Sansone 2021).

Burn and Martell (2020) found few education differences between heterosexual and bisexual individuals. However, Mollborn and Everett (2015) noted that bisexual individuals are predominantly from disadvantaged family backgrounds and that there are growing differences between heterosexual and bisexual women: bisexual women are less likely than heterosexuals to graduate from high school, and even less likely to enroll in college or obtain a Bachelor's degree. Moreover, Carpenter (2009) noted that both bisexual men and women were more likely to be dissatisfied with their education, and that bisexual women spent less time studying while in college. Carpenter (2008a) further confirmed lower educational levels among bisexual women in Australia, while more recently Sabia, Wooden, and Nguyen (2017) found lower educational levels for both bisexual men and women in Australia. In line with these results, Lee (2021) showed that high-ability women expressing attraction to multiple genders were less likely to attend college than heterosexual women with similar ability levels. One exception to these educational patterns is the higher educational level among bisexual individuals found by Aksoy, Carpenter, and Frank (2018) in the UK.¹²

2.4.2 Educational Outcomes among Gender Minority Individuals

When focusing on gender identity, Sansone (2019c) found that transgender individuals were less likely to have a high school diploma, had a lower GPA as well as fewer credits while in high school, and were less likely to be in college. Nevertheless, their sexual orientation seemed to be the driving factor when analyzed jointly with gender identity in multivariate analyses. Still, it is striking that 27 percent of transgender individuals felt that discrimination or unfair treatment due to their personal characteristics had limited their educational opportunities, compared to 12 percent of cisgender students.

In line with these findings, a substantial body of scholarship has emphasized how the binary structure of housing accommodations in colleges negatively affects transgender students living on campus (Rankin, Garvey, and Duran 2019). Relatedly, mental health among transgender students is particularly poor (Rankin, Garvey, and Duran 2019). Similarly, researchers have found that

¹² It is important to emphasize that these statistics do not contradict the aforementioned fact that individuals in same-sex couples are more likely to have a college degree than individuals in different-sex couples: indeed, the vast majority of partnered bisexual individuals are in different-sex couples (Badgett, Carpenter, and Sansone 2021).

transgender individuals are less likely to have a college education (Carpenter, Eppink, and Gonzales 2020; Badgett, Carpenter, and Sansone 2021; Carpenter, Lee, and Nettuno 2022).¹³

The lack of large random samples in many countries has been compensated by several studies (mainly outside economics) using qualitative interviews or non-probabilistic samples to document the specific challenges faced by gender minorities (Wilkinson, Pearson, and Liu 2018). For instance, transgender and nonbinary students have documented lack of faculty respect for names and pronouns (Beattie, Dyke, and Hagaman 2021), while Grant et al. (2011) reported very high rates of harassment, physical and sexual assault in primary and secondary school. Last but not least, there is little evidence on the educational attainments of intersex individuals (T. Jones et al. 2016; FRA 2020).

2.5 Additional Educational Outcomes

A small emerging literature examines educational outcomes other than years of education and schooling levels. There is some evidence that sexual minorities choose different college majors than their heterosexual counterparts (Black, Sanders, and Taylor 2007). For instance, Burn and Martell (2020) estimated that men in same-sex couples were more likely than men in different-sex couples to complete majors in humanities, arts, and social sciences (excluding business and economics), while finding less stark differences between women in same-sex and different-sex couples. In line with the aforementioned hypotheses that expected discrimination affects the educational choices of sexual minorities (and that gay men may be less driven by monetary returns to education than heterosexual men who are more likely to be primary household earners), the authors then found that both men and women in same-sex couples were more likely than those in different-sex couples to choose majors preparing students for occupations with lower levels of prejudice and higher levels of workplace independence, while men in same-sex couples were also less represented in majors with higher average earnings.

Similarly, Sansone and Carpenter (2020) reported that men in same-sex couples were less likely to have majored in a STEM field than men in different-sex couples. This is in line with the findings in Hughes (2018): gay men were less likely than straight men to persist in STEM majors. On the other hand, Sansone and Carpenter (2020) found no significant differences between women in same-sex and different-sex couples, although there is a clear gender gap leading to the underrepresentation of all women in STEM.

¹³ While the literature in the US has been severely limited by a lack of nationally representative surveys including questions on gender identity, administrative data in other countries include information on gender identity. For instance, transgender individuals were included for the first time in the Pakistani Census in 2017. Although this population is likely to have been undercounted (Rao 2017), it is clear from the available data that transgender individuals are less educated than cisgender individuals (PBS 2017). Similar results were found in the Indian Census in 2011 (RGI 2011).

3. Family

The empirical research on LGBTQ+ people's family lives has focused on identifying differences between same-sex and different-sex couples in how they form families, divide up household and market tasks, raise children, and dissolve their relationships. The observed differences between same-sex and different-sex couples are often attributed to various constraints, such as the policy environment, social attitude toward LGBTQ+ people, gender norms, and biological differences.

3.1 Rates of Cohabiting Couple Formation are Lower Among LGBTQ+ Populations

LGBTQ+ people form cohabiting couple relationships at a lower rate than cisgender and heterosexual individuals. As highlighted in Badgett, Carpenter, and Sansone (2021), lesbian women, gay men, and bisexual individuals in the 2014-2018 National Health Interview Survey (NHIS) were less likely to be in relationships and more likely to be never married compared to straight women and men: 59 percent of straight women and 64 percent of straight men were in a relationship, compared to 53 percent of lesbian women and 43 percent of gay men. Likewise, more than one-third of sexual minority women and more than half of sexual minority men were never married.

Among gender minorities, data from the 2014-2018 Behavioral Risk Factor Surveillance System (BRFSS), which allowed states to add a question about transgender status starting in 2014, shows that 47 percent of trans women, 42 percent of trans men, and 44 percent of other gender minorities were in a relationship, compared to 54 and 58 percent for cisgender women and men (Badgett, Carpenter, and Sansone 2021). Carpenter, Lee, and Nettuno (2022) reported similar patterns from the US Census Bureau's nationally representative Household Pulse survey, which added questions about sex at birth and current gender in 2021: cisgender individuals were more likely to be in a relationship than non-cisgender individuals regardless of sex assigned at birth.

Despite these differences in the proportion of the population forming families, a key feature of the literature on LGBTQ+ families is that there are many *similarities* between LGBTQ+ people and heterosexuals in how they form and dissolve relationships, cohabit, marry, and raise children. The differences can often be explained by extrinsic characteristics like social attitudes, institutional restrictions, and gender norms. Below, we examine the literature to compile what we know about LGBTQ+ people's relationships and families, primarily comparing same-sex couples to different-sex couples, and we explore possible explanations for why the patterns differ between same-sex and different-sex couples.

3.2 Positive Assortative Matching in Same-Sex Couples

Becker's theory of marriage outlines how individuals consider various traits, such as education, age, race, and ethnicity, to find the best available partner in the marriage market (Becker 1973). According to the model, those with more desirable characteristics match with a partner whose traits are similarly desirable. At the same time, Becker (1991) stressed the importance of complementarity between household production and market production. If couples maximize

marital surplus from specialization and intrahousehold trades, individuals will search for matches with complementary traits. Therefore, matches often form between two people who are alike in certain characteristics but different in others, maximizing the gains from production complementarities.

Stevenson and Wolfers (2007) show that the production complementarities have become less important with declining fertility rates, lower marriage rates, delays in the timing of marriage, higher labor market participation rates for women, and changes to the divorce law. Instead, the newer generation of couples increasingly derives marital surplus from consumption complementarity in leisure and household public goods (Stevenson and Wolfers 2007; Lundberg 2012). These patterns indicate greater marital surplus from assortative matches and a weaker incentive to specialize.

While these theories are primarily about different-sex couples, the preferences for desirable traits and consumption complementarity could also apply to same-sex couples. At the same time, some of the drivers of traditional intrahousehold specialization patterns, such as gender norms and reproduction, are less relevant for same-sex matches. For example, Lundberg and Pollak (1993) suggested that separating responsibilities based on the traditional gender roles allows some different-sex households to avoid costly negotiations. This type of specialization based on gender norms may occur less often in same-sex households, which implies same-sex households may require higher marital surplus, potentially from similar traits, than different-sex households to stay together. Based on the theory, one could expect more similarity in traits and a less strict division of labor in same-sex couples, compared to different-sex couples. Indeed, there is evidence that gender norms may be less binding for individuals in same-sex couples, leading to different labor market choices (Badgett 1995b; Oreffice and Sansone 2023).

Same-sex couples exhibit assortative matching in age and race, but they do so to a lesser degree than different-sex couples. This pattern was observed in large population-representative surveys conducted between 2000 and 2012 in the US for cohabiting same-sex couples when compared to cohabiting or married different-sex couples (C. A. Jepsen and Jepsen 2002; Schwartz and Graff 2009; Ciscato, Galichon, and Goussé 2020). These articles also found that age gaps and racial heterogamy were more common in male same-sex couples than in female same-sex couples.

These patterns are also present elsewhere. Andersson et al. (2006) found greater age gaps among same-sex couples when compared to different-sex couples in the population registry that contains all registered partnerships formed from 1995 to 2002 in Sweden. They also observed higher rates of ethnic heterogamy, measured using the individual's country of origin, in male same-sex couples compared to female same-sex couples. Similarly, Verbakel and Kalmijn (2014) found greater age gaps among Dutch same-sex couples compared to different-sex couples using a survey conducted between 2001 and 2007.

Hence, assortative matching is observed in all couple types regardless of gender composition, but cohabiting or married different-sex couples are more likely to match in age and race compared to

cohabiting same-sex couples. The proposed explanations for the difference in the matching patterns broadly fall within three categories: (1) the size of the dating pool, (2) social norms, and (3) institutional restrictions. While directly testing these hypotheses is difficult due to data limitations, the literature provides suggestive evidence.

The first hypothesis is that same-sex attracted individuals face a higher search cost in finding a suitable partner. Posner (1994) posited that individuals face different search costs based on the ease of finding a potential partner. Hence, a smaller dating pool (due to the smaller number of same-sex attracted people relative to the number of different-sex attracted people) or a negative social attitude toward sexual minorities restrict choice for people seeking same-sex partners. These search frictions may lead individuals in same-sex marriage markets to settle for less assortative matches (Schwartz and Graff 2009).

Institutional restrictions on same-sex couples' ability to marry and raise a child could also explain why the matching patterns differ. If couples consider legal recognition of the relationship and shared childrearing as commitment devices (Matouschek and Rasul 2008; Lundberg, Pollak, and Stearns 2016), same-sex relationships could face a higher risk of dissolution in countries without marriage equality. The lower stability can, in turn, lower investment in the relationship and render partner selection criteria less strict. The data on family structure is consistent with this hypothesis. Same-sex couples are much less likely to have children at home (Black et al. 2000; Gates 2015; Badgett, Carpenter, and Sansone 2021), and couples with children more often match on age and race regardless of the couple's gender composition (Ciscato, Galichon, and Goussé 2020). This difference in matching patterns by the presence of children could also explain why female same-sex couples tend to exhibit more assortative matching than male same-sex couples, given the lower rates of parenthood among male same-sex couples.

Scholars in other disciplines have hypothesized that a same-sex couple's lower adherence to social norms about a partner's race, age, and gender may result in less assortative matching. The key insight is that societies may perceive both heterogamy in age or race and same-sex relationships as violations of social norms. Hence, same-sex couples, who already transgress social norms in one way, more easily break social norms on race and age (Rosenfeld and Kim 2005) or class (Lin, Yu, and Su 2019). Some researchers have studied survey questions on desirable qualities in potential partners to test whether LGBTQ+ people and heterosexuals have different views on social norms. For example, lesbian and gay youths rated racial homogeneity and financial stability as less important in a relationship than heterosexual youths (Meier, Hull, and Ortyl 2009).

Matching on education exhibits a different pattern than matching on age or race. In the 1990 US Census, partners in same-sex relationships had a greater gap in educational attainment than married different-sex couples regardless of gender (C. A. Jepsen and Jepsen 2002). However, female cohabiting couples caught up to married different-sex couples in the education gap in the 2000 US Census (Schwartz and Graff 2009) and became *more* likely to match on education in the 2008-2012 ACS (Ciscato, Galichon, and Goussé 2020). Similarly, male cohabiting couples caught up

with married-different-sex couples in the 2008-2012 ACS (Ciscato, Galichon, and Goussé 2020). Thus, the evidence suggests that same-sex couples in the US have grown more likely to match on education over time with some gender disparity in matching patterns. One hypothesis proposed by (Ciscato, Galichon, and Goussé 2020) is that the egalitarian preference in the division of labor among same-sex couples, especially in women, could reduce intrahousehold specialization, which makes matching on education more appealing.

This gender disparity is observed in Europe as well. In both Sweden (Aldén et al. 2015) and the Netherlands (Verbakel and Kalmijn 2014), female same-sex couples matched on education at the same rate as married different-sex couples, but male same-sex couples exhibited a greater education gap than other groups.

3.3 Intrahousehold Specialization in Same-Sex Couples

3.3.1 Theoretical Considerations and Predictions About Intrahousehold Specialization

According to Becker's hypothesis of intrahousehold specialization, each partner specializes in either household or market production, based on comparative advantages (Becker 1991). Becker pointed to childrearing as one of the primary reasons for the gendered specialization patterns, explaining that intrinsic biological differences could result in women specializing in household tasks and men specializing in market tasks. Even in the absence of intrinsic differences, intrahousehold specialization could occur through the incentive structure created by the gender wage gap.

Alternatively, gender theorists explain the household division of labor through society's gendering of household tasks and individuals' compliance with the cultural and social expectations about their perceived gender (Berk 1985; West and Zimmerman 1987). Under this explanation, society assumes that gender roles in household tasks are intrinsic to biological sex even if one's preferences and skills are independent of their biological sex, gender identity, or gender expression. Feminist economics explains the division of labor through the gender-specific structures of constraint derived from biology, legal frameworks, economic wealth, and cultural norms that may limit women's choices in the household tasks they complete or impose costs to making choices that run counter to the constraints (Folbre 1994; Badgett and Folbre 1999). In response, individuals gravitate toward acting out traditional gender roles to comply with the social norms, which results in gendered intrahousehold specialization patterns.

Same-sex couples are less likely to experience an intrahousehold gap in wages and are less likely to act out traditional gender roles than different-sex couples, resulting in more equitable division of tasks in same-sex households. However, some same-sex couples assume gendered roles such as butch/femme in lesbian relationships (Badgett 1995c; Lamos 1995) and divide the household tasks based on each partner's gender expression (Doan and Quadlin 2019). Also, same-sex couples may still gain from specialization if they follow the comparative advantage in household and market work. Individuals' traits unrelated to productivity could influence their bargaining power in the

household, similarly leading to specialization. Indeed, Oreffice (2011) found that relative age and non-labor earnings were related to each partner's labor supply in both same-sex and different-sex couples. Overall, one would expect same-sex households to specialize but to a lower degree than different-sex households.

3.3.2 Empirical Evidence on Household Specialization in Same-Sex Couples

Two outcomes used by economists to measure household specialization are time use patterns and labor force participation rates. To study time use patterns, several scholars use the American Time Use Survey (ATUS), a 24-hour snapshot recorded for one adult in each household for a small number of Americans. Despite its small sample size, there are some consistent findings among the studies of ATUS. Martell and Roncolato (2016) showed that intrahousehold specialization was more often observed in male same-sex couples than in female same-sex couples. Hofmarcher and Plug (2021) reported that male same-sex couples and different-sex couples exhibited similar degrees of specialization, but female same-sex couples shared household tasks more equally, and the division of labor was fully egalitarian in dual-earner female same-sex couples. Lastly, Genadek, Flood, and Roman (2020) noted that female same-sex couples tended to spend more time together than male same-sex couples or different-sex couples, potentially implying that they often worked together to complete household tasks.

Similar patterns are observed in Sweden (Aldén et al. 2015), France (Cudeville, Gross, and Sofer 2020), and Australia (Siminski and Yetsenga 2022). Interestingly, Siminski and Yetsenga (2022) observed that same-sex couples' specialization patterns were inconsistent with the intrahousehold wage differential, implying that comparative advantage in the labor market may not incentivize same-sex couples to specialize.

There is some evidence that these patterns of household specialization are changing over time. For example, Giddings et al. (2014) used the Census and ACS from 1990 to 2011 to track the differences in couples' labor market participation by birth cohort. They found that while same-sex couples were more likely to be dual earners than different-sex couples, the gap has narrowed in recent cohorts. The increase in women's labor market participation, changing legal and social environment, and improvements in reproductive technology may have contributed to closing the gap.

In particular, fertility and parenthood may be essential to consider. In different-sex couples, households become more specialized after parenthood, and this pattern persists in the long run (Bertrand, Goldin, and Katz 2010). Some researchers found that the presence of children is associated with more specialization in household tasks (Bauer 2016) and market labor (Giddings et al. 2014) in same-sex couples as well. Similarly, controlling for fertility and childrearing eliminated differences in specialization patterns between same-sex and different-sex couples in Australia (Siminski and Yetsenga 2022). Antecol and Steinberger (2013) also found that the intrahousehold difference in labor supply was larger among female same-sex households with children than those without children.

However, the link between parenthood and specialization is not always clear. Evertsson, Moberg, and Vleuten (2021) found a narrower income gap in female same-sex households post-childbirth, following Swedish couples with similar pre-childbirth gaps in labor income. Andresen and Nix (2022) found that female same-sex partners shared the post-childbirth drop in income but only the woman in different-sex couples experienced a drop in wages, using the Norwegian population registry. The intrahousehold income disparity in female same-sex couples disappeared two years post-childbirth, and both partners' income fully recovered by five years post-childbirth, but women in different-sex marriages experience a persistent income loss. Similarly, a recent study of adoptive parents in Denmark found a smaller loss in labor supply among women in same-sex couples (Rosenbaum 2019). Specifically, the author found that secondary earners in same-sex households were more likely to work full-time after adoption, same-sex households experienced a smaller wage penalty from parenthood, and both of these effects persisted for at least five years after adopting a child.

According to the sociological literature, the difference in the preference for egalitarian division of labor could contribute to these patterns. Jaspers and Verbakel (2013) hypothesized that egalitarian preferences in female same-sex couples lead to a more equitable division of household labor. In the economics literature, Martell and Roncolato (2020) found that women in same-sex households with zero or close to zero income spend less time on household work but are more likely to actively search for a job compared to their counterparts in different-sex households. This difference implies that full specialization is less desirable in same-sex households, which could be related to the egalitarian preferences in female same-sex couples. In Sweden, Boye and Evertsson (2021) observed that income and education were unrelated to the choice of first-birth mother in female same-sex couples, and Evertsson and Boye (2018) noted that birth mothers in same-sex households took less time off work than mothers in different-sex households.

These patterns could arise if same-sex households value a smaller intrahousehold income gap for other reasons. For example, women in same-sex couples could be more inclined to participate in the labor market because they expect lower income from their partners due to the gender wage gap. The patterns of education choice observed in Black, Sanders, and Taylor (2007) and discussed in Section 2 are consistent with this hypothesis: women in same-sex relationships are more likely to major in a high-paying field, while men in same-sex relationships often have a lower-paying major. Lastly, the lack of marriage or marriage-like commitment devices could increase the dissolution risks and disincentivize households from specializing.

3.4 Childbearing and Childrearing in Same-Sex Households

According to the NHIS 2014-2017, only 20 percent of lesbian women had a child at home compared to 32 percent for bisexual women and 33 percent for straight women. These gaps are much larger for men. Only 5 percent of gay men and 15 percent of bisexual men had children at home, compared to over 30 percent for straight men (Badgett, Carpenter, and Sansone 2021). These patterns are also observed in France (Cudeville, Gross, and Sofer 2020) and Norway

(Andresen and Nix 2022). These data indicate that same-sex households are less likely than different-sex households to have children present, and female same-sex households are more likely than male same-sex households to have children present.¹⁴

Parenthood for same-sex couples is rare for several reasons. Biologically, same-sex couples are unlikely to conceive an unplanned child,¹⁵ and childbearing for same-sex couples is more expensive on average, often requiring assisted reproduction technology or adoption and foster care. While many households with same-sex couple include biological children from previous different-sex relationships, younger cohorts of LGBTQ+ people are coming out earlier and are more likely to become parents through adoption or assisted reproductive technology (Gates 2015). In the US, the share of children in same-sex households living with adoptive parents increased from 12.5 percent in 2011 to 16.4 percent in 2015 (Boertien and Bernardi 2019). Furthermore, among the Dutch children living in same-sex households, the share that lived in the same household from birth grew from 30 percent in 2006 to 58 percent in 2018 (Kabátek and Perales 2021).

The transformation of the road to parenthood for same-sex couples is partly due to many high-income countries making assisted reproduction technology and adoption more accessible. However, key actors like medical offices or foster care agencies can deter same-sex couples from parenthood. Indeed, a recent correspondence study of the US foster care system found that men in same-sex relationships received shorter and less informative responses than men in different-sex relationships after sending an inquiry to foster care agencies (Mackenzie-Liu, Schwegman, and Lopoo 2021). The authors did not find any penalty for women in same-sex relationships, consistent with the disparity in the likelihood of parenthood between female and male same-sex couples.

Male same-sex couples may face greater discrimination in childrearing as well. Diaz-Serrano and Meix-Llop (2016) conducted a correspondence study of Catalan schools to compare the rate at which same-sex and different-sex households receive callbacks and invitations to tour the school. The authors found that men in same-sex households were much less likely to receive callbacks compared to men in different-sex households, whereas women in same-sex couples were only marginally less likely to receive callbacks compared to women in different-sex households.

3.5 Relationship Dissolution

Much like relationship formation, relationship dissolution is affected by various circumstantial and institutional differences in the experiences of same-sex and different-sex couples. In the US, Rosenfeld (2014) found a similar dissolution rate between male same-sex relationships and different-sex relationships in a 2009-2012 survey of Americans, while female same-sex relationships dissolved at a higher rate. Cohabiting same-sex couples and cohabiting different-sex

¹⁴ We do not review here studies on fertility choices of sexual and gender minorities, mainly because we are not aware of much research in economics on how and why sexual and gender minorities bring children – adopted and biological – into the household.

¹⁵ Among the pregnancies reported in the 2011 National Survey of Family Growth, 45 percent were unintended (Finer and Zolna 2016).

couples in 2008-2013 Survey of Income and Program Participation (SIPP) broke up at a similar rate, but married different-sex couples exhibited a lower dissolution rate (Manning, Brown, and Stykes 2016). Joyner, Manning, and Bogle (2017) found that male same-sex relationships were shorter on average compared to female same-sex relationships. The authors added that male same-sex couples were less likely than female same-sex couples to cohabit, potentially explaining why the dissolution risk is higher in female same-sex couples than in male same-sex couples in research that study cohabiting couples.

Researchers using data from Europe also find gender differences in the dissolution risk. Among Swedish registered partnerships, female same-sex relationships were more likely to dissolve than male same-sex relationships (Andersson et al. 2006). Among Swedish couples in a civil union or a marriage, female same-sex couples were more likely to dissolve than male same-sex couples and different-sex couples (Kolk and Andersson 2020). Female same-sex couples in a registered partnership in Norway were more likely to dissolve compared to male same-sex couples (Andersson et al. 2006). In Britain, same-sex cohabiting relationships faced a significantly higher risk of dissolution compared to different-sex relationships (Lau 2012).

Outside of Europe, Lin, Yu, and Su (2019) reported similar dissolution likelihood between same-sex relationships and different-sex relationships based on data of Taiwanese youths. However, respondents to a representative survey in Colombia reported that same-sex relationships were more than twice as likely to dissolve than different-sex relationships (Ruiz-Vallejo and Boertien 2021).

The researchers who find higher dissolution risk in same-sex relationships attribute the difference to minority stress, lack of institutionalized commitment devices, and matching patterns.¹⁶ The added stress from public disclosure of their sexuality may raise the risk of dissolution. However, there is little evidence that dissolution risk is lower in countries with more accepting attitudes toward same-sex relationships (Valfort 2017).

Alternatively, marriage or marriage-like contracts such as civil unions may increase the cost of dissolution (Pollak 1985; Lundberg, Pollak, and Stearns 2016). These institutional commitment devices have historically been unavailable to same-sex couples, which could explain why same-sex couples experience more frequent relationship dissolutions. For example, Rosenfeld (2014) showed that same-sex couples in marriage-like relationships dissolve at the same rate as different-sex couples. The presence of children at home can also reduce the dissolution risk if parenthood incentivizes couples to stay together. Aarskaug Wiik, Seierstad, and Noack (2014) found a negative correlation between parenthood and divorce risk in female same-sex couples.

Lastly, the fact that same-sex relationships exhibit less assortative matching could raise the dissolution likelihood. Manning, Brown, and Stykes (2016) found that the dissolution rate is higher among couples with a greater gap in education. Similarly, Lin, Yu, and Su (2019) reported lower

¹⁶ Minority stress refers to the elevated levels of stress due to discrimination and lack of social acceptance (Meyer 1995).

dissolution likelihood in couples that are closer in age, education, ethnicity, and parental economic status for both same-sex relationships and different-sex relationships.

4. Labor Market

A large proportion of empirical research on the economics of sexual orientation and gender identity has focused on whether wages vary by sexual orientation, with an underlying hypothesis that labor market discrimination based on bias against LGBTQ+ people would result in poorer wage outcomes, all else equal (Badgett 1995a). Economists have focused on two main reasons for discrimination against LGBTQ+ people. First, it might be present because of a distaste for hiring such employees (Becker 1971), perhaps stemming from religious or other moral frameworks, that increases the psychic costs to employers, workers, or customers of engaging with LGBTQ+ people. The psychic costs will shift biased employers' demand for stigmatized workers, affecting employment opportunities and possibly leading to lower wages and employment, especially if there are not enough unbiased employers in the market. The other main theory is that of statistical discrimination, where employers use group membership as a proxy for otherwise unavailable information about an individuals' productivity (as discussed in Neumark, 2018).

4.1 Sexual Minority Men Earn Less Than Heterosexual Men, Lesbian Women Earn More Than Heterosexual Women, and Transgender People Have Lower Incomes than Cisgender People

Almost thirty years into this body of research, four stylized patterns about wage and income differences have emerged consistently across many data sources and geographic locations and with few exceptions. First, gay and bisexual men — defined by sexual behavior, partnership with a man, or sexual identity — have lower wages or incomes than do heterosexual men, with the gaps sometimes appearing in comparisons before and almost always after adjusting for other variables related to wages (Drydakis 2022; Klawitter 2015; Valfort 2017; Weichselbaumer 2022).¹⁷ One meta-analysis finds an average negative wage gap of 11 percent for gay/bisexual men after adjusting for other covariates (Klawitter 2015), while a more recent meta-analysis finds a negative gap of 7 percent for gay men and a 10 percent negative gap for bisexual men (Drydakis 2022). Second, lesbian women, in contrast, usually have higher wages or incomes than heterosexual women, even after controlling for hours or weeks of work. Klawitter's meta-analysis finds that lesbian/bisexual incomes or wages are 9 percent higher on average, while Drydakis finds 7 percent higher earnings for lesbian women but 5 percent lower earnings for bisexual women. Third, a gender gap still exists, since lesbian and bisexual women earn less than either heterosexual or gay/bisexual men. Although the actual values vary somewhat,¹⁸ these three stylized patterns are

¹⁷ One exception comes from studies of Brazilian data on men in same-sex couples and self-identified gay and bisexual men (Suliano et al. 2016; Suliano, Filho, and Irfi 2021; Suliano, Cavalcante, and Rodrigues 2021; Tampellini Silva 2023).

¹⁸ The 95% confidence intervals are often narrow around the aforementioned point estimates. In Drydakis's recent meta-analysis, the pooled estimates had these 95% confidence intervals: gay men (-0.10, -0.04), bisexual men (-0.14, -0.06), lesbian women (0.03, 0.11), and bisexual women (-0.08, -0.03).

seen in data from multiple countries, including Australia, Bulgaria, Canada, France, Germany, Greece, Ireland, Netherlands, Poland, Sweden, the United Kingdom, and the United States.¹⁹

The fourth stylized pattern emerging from a relatively recent body of research is that transgender people earn less (or have lower individual or household incomes) than cisgender people. Several studies have documented this pattern in the United States, Sweden, and the Netherlands (Carpenter, Eppink, and Gonzales 2020; Carpenter, Lee, and Nettuno 2022; Ciprikis, Cassells, and Berrill 2020; Shannon 2022; Geijtenbeek and Plug 2018; Kolk et al. 2023).

Stylized patterns related to other employment measures come from a smaller body of research. Lesbian women have higher labor force participation rates than do heterosexual women, holding all else equal. Transgender people have lower employment rates compared to cisgender people, but differences in employment rates are small for lesbian, gay, and bisexual people compared to heterosexuals. Finally, several studies document different patterns of occupational attainment for lesbian, gay, and bisexual people.

4.2 Measured and Unmeasured Characteristics That Are Relevant to Sexual Orientation Earnings Differences

4.2.1 Influence of Measured Characteristics

In economics and sociology, studies of differences in earnings by sexual orientation and gender identity follow the methods laid out originally in studies of race and gender gaps. Some form of Mincer regression analysis is typically used separately for men and women to account for differences in observable characteristics among LGBT people, such as their relative youth and higher education levels. The dependent variable is the log of earnings or estimated hourly wage, and other factors known to influence wages are controlled for, typically including measures of human capital like educational attainment, labor market experience, and occupation, as well as race, marital status, location, and other relevant measures that are available, such as health. The measure of sexual orientation or gender identity is added as an independent variable to test for systematic differences, holding other factors constant, and generates the wage differences noted above as stylized patterns: generally negative for gay and bisexual men and for bisexual women, and positive for lesbian women (Drydakis 2022).

Some studies have taken advantage of richer datasets to see if these wage gaps persist with additional covariates that might be related to sexual orientation. Controls for family characteristics, school characteristics, and personal characteristics (including gender nonconformity and

¹⁹ In addition to the studies mentioned in the rest of Section 4, a non-exhaustive list of other studies includes La Nauze (2015) and Sabia, Wooden, and Nguyen (2017) for Australia; Carpenter (2008b) for Canada; Laurent and Mihoubi (2017) for France; Humpert (2016) for Germany; Plug and Berkhout (2004) for the Netherlands; Ahmed and Hammarstedt (2010) for Sweden; Arabsheibani, Marin, and Wadsworth (2005) and Aksoy, Carpenter, and Frank (2018) for the UK; Clain and Leppel (2001), Berg and Lien (2002), Black et al. (2003), Elmslie and Tebaldi (2007), Martell (2013a), and Curley (2018) for the US; and Heineck (2009) for several countries including Australia, the US, Ireland, Poland, and Bulgaria. A study using data from Bogota, Colombia, found a negative earnings gap for LGBT men and women, although it was only statistically significant for men (Ham, Guarin, and Ruiz 2023).

competitiveness) sometimes reduce but rarely eliminate wage gaps for gay and bisexual men (Sabia 2014; 2015; Burn and Martell 2022; Buser, Geijtenbeek, and Plug 2018; La Nauze 2015; Sabia, Wooden, and Nguyen 2017). Those more detailed characteristics have little effect on typical patterns of lesbian and bisexual women's wage differences.

Some studies have used decomposition methods to ask whether differences in average wages by sexual orientation are driven by differences in characteristics (means) or by the measured returns to characteristics (coefficients). In general, differences in characteristics do not explain the wage gap for gay men (Berg and Lien 2002; Martell 2013a). For example, Antecol, Jong, and Steinberger (2008) decomposed the wage differences seen between people in same-sex couples and people in different-sex couples. The authors found that average earnings of men in same-sex couples are lower because they are younger, but their higher education levels are protective to some extent. Differences in returns over-explain the wage gaps for men in same-sex couples when compared to men in different-sex *married* couples, but men in same-sex couples earn more than men in different-sex *unmarried* couples because of differences in characteristics. For women in same-sex couples, earnings are higher primarily because of higher levels of education but also to a lesser extent because they are in higher wage occupations with more men in them (Daneshvary, Waddoups, and Wimmer 2008; Antecol, Jong, and Steinberger 2008). Although lesbian women are less likely to have children than straight women, that difference does not account for lesbian women's higher earnings (L. K. Jepsen 2007). However, a very recent study found some evidence that childrearing might matter, since the lesbian wage premium fell while the gay male negative wage gap did not change when states made it easier for same-sex couples to adopt children over the 1988-2008 period (Levendis and Lowen 2023).

Finally, it is worth noting that the observed pattern of wage gaps is robust not only to the country being studied, but to different ways of measuring sexual orientation (Sabia 2014; Klawitter 2015; Drydakis 2022). Early studies necessarily used data on sexual behavior, labeling people with same-sex sexual partners as gay, lesbian, or bisexual (and generally not distinguishing between gay/lesbian and bisexual). Many studies continue to use the sex of a cohabiting partner or spouse and infer that those with same-sex partners are lesbian, gay, or bisexual.²⁰ We might see bigger income differences in comparisons of couples if people in same-sex couples adapt their labor supply in ways that differentially affect their income or if people in couples are more visible to employers (C. G. Aksoy, Carpenter, and Frank 2018; Carpenter and Eppink 2017; Weichselbaumer 2022; Carpenter 2008b). As more surveys add questions on respondents' self-identity as lesbian, gay, bisexual, or heterosexual, we are seeing at least some of the same wage patterns as in the analyses of couples data, although exceptions exist (Carpenter and Eppink 2017).

²⁰ The NHIS shows that more than 80 percent of people in same-sex couples identify as either gay or lesbian; about 90 percent of bisexual people in partnerships have different-sex partners (Badgett 2018; Badgett, Carpenter, and Sansone 2021).

4.2.2 Influence of Unmeasured Characteristics

Questions remain about the underlying drivers of these patterns, and at least some can be classified as concerns about unmeasured characteristics of individuals and settings that are related to mechanisms potentially generating wage or income differences: visibility of sexual orientation status, the role of changing cultural attitudes, and differential levels of labor market experience.

Most available datasets have little to offer on the question of visibility. For a gay, lesbian, or bisexual person, disclosure of sexual orientation could increase the likelihood of discrimination. Some authors argued that being married helped to “mask” being LGB when marriage was limited to a different-sex partner. But even with that mask, gay/bisexual men were found to earn less (Blandford 2003; Cushing-Daniels and Yeung 2009).²¹ Similarly, Sabia (2014) found negative wage gaps for self-identified bisexual individuals who have only different-sex sex partners, suggesting that the wage gap is not mitigated by looking heterosexual in behavior. Gender nonconformity is another factor that might make sexual minorities more visible, but Burn and Martell (2022) did not find an effect of gender nonconformity on sexual orientation wage differences. Two recent studies of college graduates in the US and employees of the UK National Health Service have access to direct reports of workplace disclosure by LGB workers (Mumford et al. 2021; Folch 2022). Both studies found that openness about sexual orientation was associated with higher wages or a lower LGB wage gap. These findings suggest that the link between disclosure and wages is characterized by selection of higher earners into disclosure or into more supportive workplaces.

Another unmeasured characteristic is the underlying degree of acceptance of LGB people. LGB people might fare better in labor markets where being LGB is more socially accepted. In line with that prediction, Burn (2019) found that the negative wage gap for men in same-sex couples was smaller in more accepting states. Similarly, Hammarstedt, Ahmed, and Andersson (2015) found that negative attitudes at the county level in Sweden reduced both earnings and the probability of employment for women and men in same-sex couples, although the earnings effect was stronger for men in same-sex couples.

Given that connection between acceptance and wage differences at a point in time, increases in the underlying degree of acceptance might also then be evident over time in a falling wage gap. Two studies found a positive wage difference for gay men in the mid-2010s, perhaps because of increasing acceptance, but comparisons with the earlier waves of the same data were not possible (Wang, Gunderson, and Wicks 2018; Carpenter and Eppink 2017). Some studies have compared sexual orientation wage differences over time within the same survey, but the findings of a falling wage gap for gay men use very small samples and are imprecise and inconclusive (Clarke and

²¹ As the argument about ‘masking’ suggests, the male marriage premium might in fact be a reward for heterosexuality. Carpenter (2007) found higher marriage premia in places and jobs with higher proportions of gay men. Also, men in same-sex couples did not appear to get a premium for cohabitation prior to the introduction of marriage equality (Zavodny 2008), although since then one study showed that men (and women) in married same-sex couples earned more compared to unmarried same-sex couples or to single gay and lesbian people (Martell and Nash 2020).

Sevak 2013; Cushing-Daniels and Yeung 2009). Likewise, apparent trends toward wage gaps of zero for both men and women in the first meta-analysis were not statistically significant (Klawitter 2015);²² a second meta-analysis of more recent studies found a smaller wage gap for gay men after 2010 (Drydakis 2022) although most of the early wage gap studies were not included. Perhaps the most convincing evidence about time trends comes from two recent comparisons of same-sex couples and different-sex couples in the very large American Community Survey (Badgett, Carpenter, and Sansone 2021; C. A. Jepsen and Jepsen 2022). The negative earning gap for men in same-sex couples persists over time, but the authors found signs of a drop in the positive earnings gap for women in same-sex couples in multivariate regressions. Similarly, Folch (2022) found no reduction in the negative wage gap over time for LGBT college graduates in 2009 and in 2016. Overall, the large improvements in social acceptance toward sexual minorities described at the beginning of the paper have not coincided with similarly clear improvements in earnings outcomes. Future research might consider whether growing acceptance of LGBT people might have increased openness about their identities and increased their exposure to potential bias, even as that bias is decreasing.

One unmeasured characteristic that could help explain lesbian women's higher wages is actual labor market experience, since lesbian women might have fewer child-related periods of labor force withdrawal and may be more committed to labor market participation than heterosexual women. The data used in wage studies only allows the creation of a potential experience measure based on age and education. However, more years of actual experience might generate a higher return to years of potential experience for lesbian women than for heterosexual women, as found in studies using an interaction term for sexual orientation and potential experience (Badgett 1995a; L. K. Jepsen 2007; Martell 2019). Another study supportive of this point showed that women in same-sex couples in the US who had never married had a much higher lesbian premium than those who were previously married to men (Daneshvary, Waddoups, and Wimmer 2009).

4.2.3 Do Bisexual People Have Different Wage Patterns?

The most common data sources in early research mixed two groups that might well have different economic outcomes – bisexual people and gay/lesbian people – but more datasets now include measurements of sexual orientation identity that allow researchers to distinguish the two groups. The prevalence of bisexual people is rising in the United States among younger cohorts (NASSEM 2020; England, Mishel, and Caudillo 2016), enhancing the importance of understanding any differences in treatment between bisexual and gay/lesbian people.

So far, differences for bisexuals (compared to heterosexuals) have been found in economic outcomes in about half of the wage studies included in the meta-analysis by Drydakis (2022). Taken together, Drydakis (2022) found that the negative wage gap compared to heterosexuals is about 10 percent for bisexual men and 7 percent for gay men. The difference is more striking for

²² In the fullest meta-regression model, the point estimate of the time trend (year of the study's data) is 0.0005 with a robust standard error of 0.003 for men and -0.0002 with a robust standard error of 0.01 for women.

sexual minority women compared to heterosexual women, with a negative wage gap of 5 percent for bisexual women and a positive wage difference of 7 percent for lesbian women. The subtleties in separating out gay/lesbian from bisexual effects are important to recognize, as adding measures of personality, risky behaviors, and mental health into a statistical model changes the wage gap more for bisexual men and women than for gay or lesbian people (Sabia 2014; Drydakis 2022).

4.2.4 Intersectionality and Income Patterns by Sexual Orientation, Race, and Ethnicity

The small sample sizes of LGB people in most surveys make it difficult to assess whether income or wage differences for LGB people vary by race or ethnicity. Two analyses of American Community Survey data took advantage of large samples of same-sex couples and found that sexual orientation effects on income varied by race and ethnicity (Douglas and Steinberger 2015; Del R o and Alonso-Villar 2019b).

White people in same-sex couples had higher earnings than did people in same-sex couples who were Black, Hispanic, and Asian (with the exceptions of Asian women with female partners and Hispanic men with male partners). White, Hispanic, and Asian men in same-sex couples earned less than men of the same race in different-sex couples. And Black men in same-sex couples had a larger gap in earnings than did men in other race/ethnicity categories when compared to White men in different-sex couples (Del R o and Alonso-Villar 2019b). Also, White LGBT people were the least likely race/ethnic group to be poor among LGBT people in the US, and Black and Asian LGBT people were more likely to be poor than Black and Asian non-LGBT people (Badgett, Choi, and Wilson 2019). Data from Brazil also show that White people in same-sex couples earned more than non-White workers (Souza, Martins, and Gomes 2023).

4.2.5 Wage Patterns by Gender Identity

Economic theories of discrimination could also be applied to the experiences of transgender and gender nonconforming workers, who might face differential treatment based on employers' or employees' tastes for discrimination or on assumptions about group characteristics.²³ Overall, studies of that data have found large gaps in income and other economic measures for transgender people when compared to cisgender people with the same age, education, race, and other available characteristics. However, each study differs in the type of comparison used, making it difficult to draw conclusions about the consistency of some findings.

Perhaps the most intuitive strategy for assessing wage effects of being transgender is to compare individual incomes before and after transition, in effect holding constant unobserved characteristics like human capital and gender socialization. One early study of a small US-based convenience sample found that transgender men experienced a small positive change in earnings after transitioning, while transgender women experienced a 32 percent drop in earnings (Schilt and

²³ Here we include workers with a nonbinary gender identity under the transgender umbrella, but wherever possible we distinguish their experience from that of individuals who are assigned one sex at birth (either male or female) but later in life identified with a different gender (also either man or woman).

Wiswall 2008). A similar finding emerged in a large administrative dataset in the Netherlands (Geijtenbeek and Plug 2018): the authors found an 11 percent drop in earnings for transgender women workers and zero change in earnings for transgender men. To explain those different experiences, they posited two potentially offsetting effects at work: a gender effect based on the traditional gender gap and a transition penalty for being transgender.

These two effects of being transgender have been harder to identify in cross-sectional data from probability samples in the United States that have added gender identity questions. For example, the BRFSS data show that transgender people experience economic disadvantages: transgender people have lower household incomes than cisgender people (Carpenter, Eppink, and Gonzales 2020), a higher poverty risk (Badgett, Choi, and Wilson 2019; Carpenter, Eppink, and Gonzales 2020), and poorer health (Carpenter, Eppink, and Gonzales 2020). Transgender men have a larger household income gap than transgender women (in comparisons of both to cisgender men), although models with better details on other household members only show a household income gap for transgender women (Carpenter, Eppink, and Gonzales 2020). Carpenter, Eppink, and Gonzales (2020) found no household income gap for transgender people who identify as gender nonconforming. Cipriakis, Cassells, and Berrill (2020) decomposed income regressions to show that education and health related functional limitations account for about a third of these income differences for transgender people.

Similar patterns are observed in the US Census's Household Pulse Survey. Carpenter, Lee, and Nettuno (2022) compared cisgender women and men to gender minorities (both transgender people and those not choosing a gender category) by sex assigned at birth. Their results indicated that non-cisgender individuals had significantly lower employment rates and higher poverty rates than comparable cisgender individuals, regardless of sex assigned at birth. Folch (2022), using data from the Baccalaureate and Beyond Longitudinal Study, also found that non-cisgender college graduates have lower wages than cisgender heterosexual people ten years after graduation. Shannon (2022) created population weights using the BRFSS transgender data to combine weighted nonprobability sample data from the 2015 US Transgender Survey (USTS) with the American Community Survey. In general, the transgender and gender nonconforming USTS respondents earned 14-18 percent less than (presumably cisgender) men in the ACS, and nonbinary people assigned female at birth had a much larger penalty of 38 percent lower income.

Shannon (2022) also found evidence of both transition and gender effects. In one comparison, transgender women and transgender men who had socially transitioned but did not pass (i.e., they were not perceived by others as their gender identity) earned less than those who had socially transitioned and did pass. In another comparison, Shannon found that as the age of transition was older, the incomes of transgender women were higher and the incomes of transgender men were lower. The author interpreted this as the consolidation of early income gains from being assigned male at birth for transgender women and of early gender penalties for transgender men who transitioned later. Those who transitioned younger were more likely to be perceived as their gender identity earlier, giving them income patterns consistent with the traditional gender gap.

Taking these studies as a whole, there is consistent evidence that being transgender is associated with lower incomes than those of a relevant reference group of cisgender people. The disadvantages are consistently larger for transgender women in most studies. Both sex assigned at birth and the visibility of being transgender appear to shape incomes of transgender people. Finally, the findings for incomes of gender nonbinary people are not consistent across datasets: nonbinary people assigned female at birth have lower incomes than cisgender women, and nonbinary people assigned male at birth have lower incomes than cisgender men (Shannon 2022; Carpenter, Lee, and Nettuno 2022), but when combined, nonbinary people’s household incomes are not significantly different from those of cisgender men (Carpenter, Eppink, and Gonzales 2020).²⁴ More research with large probability samples is thus needed to further document and analyze these disparities.

4.3 Employment Discrimination Experiments

While wage gaps in observational data might reveal the presence of discrimination in labor markets, economists have also used more direct experimental tests for the presence of differential treatment of people in different social groups defined by race, sex, disability, age, and other groups (Neumark 2018). A well-designed experiment can control for more observable characteristics than are typically found in datasets from surveys, and some experiments have also compiled and controlled for firm- and job-level data that is not collected in surveys.

In this section, we review correspondence studies that test for whether employers treat LGBT and non-LGBT job applicants equally by submitting matched sets of (usually fictional) resumes to actual job openings.²⁵ The resumes substantively vary only by a signal that one applicant is LGBT, thus experiments also control for disclosure of sexual orientation or gender identity, which is not possible in wage studies. The resume signals used have mostly been the inclusion of volunteer experience for an LGBT-related organization or, more rarely, the presence of a same-sex partner (for sexual orientation) or name change (for gender identity). Some studies have attempted to avoid conflating sexual orientation discrimination with discrimination against political activists (Weichselbaumer 2003; Badgett 2007) by using carefully designed control organizations for non-LGBT resumes, and they counter the possibility that people in LGBT-related organizations are not necessarily LGBT by being more explicit about applicants with an LGBT identity (see also Weichselbaumer, 2022). The typical outcome measure for comparison is whether an applicant was invited by the employer for an interview. Differences in callback rate probabilities and net

²⁴ An important distinction across this small number of studies is that the BRFSS data ascertained gender nonconforming status only among the sample of people who answered ‘yes’ to the question: ‘Do you consider yourself to be transgender?’. In contrast, the Household Pulse data allow all respondents to describe their gender as ‘male’, ‘female’, ‘transgender’, or ‘None of these’. As such, the plausible set of nonbinary and/or gender nonconforming individuals is not directly comparable across datasets.

²⁵ Audit studies, which are rare in the sexual orientation and gender identity literature, involve having testers apply in person for positions, while correspondence studies use resumes of fictional testers to apply for jobs ‘on paper’ or electronically (Neumark 2018). Additional audit and correspondence studies in the housing market are discussed in Section B of the Online Appendix.

differences in the rate at which employers offer an interview to one but not the other applicant are standard measures estimated in these studies. As the next two sections describe in more detail, the dominant finding from these studies is that LGBT applicants are less likely to receive a callback for an interview than equally qualified non-LGBT applicants.

It is important to also note the limitations of the experimental approach alongside its virtues (e.g., see Neumark, 2018; and Flage, 2019). One concern relates to the generalizability of studies done for one set of jobs or one geographic location, for example, even though locations and jobs vary in the studies reviewed below. To accommodate experimental design needs, these studies mostly focus on entry-level jobs or occupations that use widely available skills. Also, the application stage, along with an invitation for a job interview, is just one stage in a longer process, and differences at the interview stage might not result in differences in hiring, wages, or promotions. As some application processes incorporate more prescreening using AI tools, these research methods might be less likely to detect differential outcomes. Despite these limitations, the experimental evidence is an additional way of detecting differential treatment in particular contexts and it complements the aforementioned wage studies based on observational data.

4.3.1 Sexual Orientation Discrimination

The first two studies of this kind were published by non-economists in 1981 for small samples of specialized professional job openings: social work (Berger and Kelly 1981) and law (Adam 1981), but only the latter found evidence of differential treatment of lesbian or gay applicants. Twenty years later, Weichselbaumer (2003) took up this methodology in economics, finding that both masculine-appearing and feminine-appearing (as signaled by hair length and clothing style) lesbian women were significantly less likely than non-lesbian coded applicants to receive a callback for job applications in Vienna. Over time, scholars have produced studies in at least eleven countries, all but a few of which found evidence of discrimination against lesbian, gay, or non-heterosexual applicants (Flage 2019).

Flage (2019) conducted a meta-analysis of 18 studies from OECD countries that tested more than 50,000 applications in total. The author found that overall gay applicants had 36 percent lower odds of getting a callback from an employer than did heterosexual candidates. Studies in the prior 10 years showed 35 percent lower odds of a callback, with very little difference over time. Dividing the studies by gender showed that gay men had 39 percent lower odds of a response and lesbian women had 32 percent lower odds of a response. The degree of differential treatment was greater in Europe than in North American countries. Another finding across studies is that gay men were less disadvantaged in female-dominated jobs and more disadvantaged in male-dominated jobs (see also Dilmaghani and Robinson, 2022). Flage's overall findings are similar to the findings of another meta-analysis (Lippens, Vermeiren, and Baert 2023) for a smaller group of correspondence studies.

Table 1 presents callback rates for both LGBT and non-LGBT applicants in several key studies, including three that did not find evidence of discrimination by employers. Those studies were done

in contexts that were much less likely to result in negative treatment. The first was Baert (2014), who designed his project to test the hypothesis that statistical discrimination could work in favor of lesbian women if employers discriminate against heterosexual women who are more likely to take maternity leave. While he found higher callback rates for 25-year-old lesbian women (but not 37-year-old lesbian women), lesbian women with children had the largest advantage in callbacks, suggesting that prospects of childrearing may not have been the main driver of employer decisions. In the second study, Bailey, Wallace, and Wright (2013) found no differences in treatment of gay or lesbian applicants in four US cities – Philadelphia, Chicago, Dallas, and San Francisco – all of which are known to have high levels of acceptance of LGBT people. The third study found no statistically significant disadvantage in callbacks for applicants who self-identified as gay in their social media profiles and who had Master’s degrees in information systems (Acquisti and Fong 2020). The authors noted that employers might not have engaged deeply in search effort on social media, and it also seems plausible that the cost of discrimination in high skilled jobs is much greater for employers. Finally, Kline, Rose, and Walters (2022) conducted a correspondence study testing differences in treatment by race, sex, age, and LGBTQ status (not included in Table 1) and found no effect of being LGBTQ on contact rates. However, their findings are hard to compare to others because of a different methodology, including separate measures for pronouns and only including the LGBTQ measure on 10% of applications. Nevertheless, they found a 1.6 percentage point penalty for White (but not Black) applicants whose resumes included an LGBTQ club.

Two innovative features of a set of correspondence studies by Drydakis in Table 1 provide additional insights into wage outcomes and changes in discrimination over time. First, he collected data on wages during employer callbacks in his studies in Greece, Cyprus, and the UK. He generally found negative effects of being gay or lesbian on wage offers, although the effects are small and not always statistically significant, with wage gaps ranging from 1 to 9 percent. In other words, even if gay and lesbian applicants overcame callback disadvantages and were interviewed for a position, they might still face discrimination in wages if offered the jobs later. Second, Drydakis repeated his 2009 experiment for hiring of gay men in Greece in 2013-14 and 2018-2019 (Drydakis 2021). He found a rising penalty for gay men in the probability of a callback, suggesting increasing discrimination over time, which might have resulted from the long-term downturn in the Greek economy and high unemployment rates, a backlash against the recognition of partnership rights for same-sex couples in 2015, and the rise of far-right political movements.

Table 1: Interview Invitation Rates in Field Experiments on Hiring Discrimination

Authors	Year of data	N of applicants	Location	Signal	Callback rate LGBT	Callback rate non-LGBT	Occupations
<i>Transgender-related studies</i>							
Make the Road (2010)	2008	48	New York City	One in each pair of testers was transgender	8.3% *	50.0%	High-end retail
Winter et al (2018)	2016-2017	6,000	Malaysia, Singapore, Thailand, Viet Nam	Transgender applicants indicated gender identity differed from sex assigned at birth; distinguished legal name from "use name" or preferred name.	11.1% *	16.9%	Occupations reflecting broad range of educational credentials
Granberg et al (2020)	2019	2,224	Sweden	Name change in cover letter	34.0% *	40.3%	12 Low-skill occs, mix male and female occs
<i>Sexual orientation-related studies</i>							
Weichselbaumer (2003)	1998-2000	1,226 (female)	Vienna	Line on resume: "1996-1998: Managerial activity for the Viennese Gay People's Alliance"	48% (masc lesbian) *; 36% (fem lesbian) *	60% (fem straight); 49% (masc straight)	Accountants & secretaries
Drydakis (2009)	2006-2007	3,428 (female)	Athens	Line on resume: "Member volunteer in the Athenian Homosexual Community"	13.9% *	40.1%	Low-skilled office jobs industry jobs, café and restaurant, shop sales
Drydakis (2011)	2007-2008	2,114 (male)	Athens	Line on resume: "Member volunteer in the Athenian Homosexual Community (from 2001-2005)"	21.9% *	49.3%	Low-skilled office jobs industry jobs, café and restaurant, shop sales
Tilcsik (2011)	2005	3,538 (male)	US (CA, FL, NV, NY, OH, PA, TX)	Line on resume: treasurer of campus LG organization	7.2% *	11.5%	White-collar entry-level
Ahmed et al (2013)	2010	3,990	Sweden	Cover letter mentions wife or husband; lines on resume: "Engaged in the Swedish Federation for LGBT Rights" and with Stockholm Pride Festival	26% for gay men * (10% level); 26% for lesbian women *	30% for straight men; 32% for straight women	10 occs, mix male, female, and gender-neutral

Bailey et al (2013)	2010	4,608	Philadelphia, Chicago, Dallas, San Francisco	Line on resume: leadership position in LG university organization	12.4% lesbian; 13.9% gay men	12.4% straight women, 11.9% straight men	Available on CareerBuilder.com
Baert (2014)	2012-2013	1,152 (female)	Belgium	Line in resume: "Married to [female name]"	18%	16%	Secretary, nanny, manual worker, management assistant, ergotherapist, engineer
Drydakis (2014)	2010-2011	4,526	Cyprus	Line on resume: "Member volunteer in the Cypriot Homosexual Association (from 2005 to 2008)"	14.1% gay men*; 11.1% lesbian women *	52.5% straight men; 49.5% straight women	Low-skilled office jobs industry jobs, café and restaurant, shop sales
Drydakis (2015)	2013	11,098	UK	Line on resume: Mentions budget responsibility in GL unions at university	59% gay men *; 60.2% lesbian women *	64.3% men; 65.8% women	Broad range
Patacchini et al (2015)	2012	2,320	Rome & Milan	Line on resume; Internship in pro-gay advocacy group	9.6%* for gay men; 12.4% lesbian	11.9% straight men; 10.3% straight women	Clerk, bookkeeper, call center operator, receptionist, sales clerk, secretary, shop assistant
Mishel (2016)	2014	1,550 (female)	US (NY, VA, TN, DC)	Line on resume: secretarial position in LGBT student organization	12% *	17%	Administrative, clerical, secretarial
Acquisti & Fong (2020)	2013	4,173 (male)	US	Facebook profile lists gender that job candidate is "interested in"; interests and activities consistent with real profiles of same sexual orientation	10.7%	10.6%	Required grad degree (MA in information systems) and experience
Drydakis (2021)	2013-2014; 2018-2019	2,294 (male)	Athens	Line on resume: "Member volunteer in the Athenian Homosexual Community"	3.2% * in 2013-14; 4.3% * in 2018-2019	33.3% in 2013-14; 34.8% 2018-19	Low-skilled office jobs industry jobs, café and restaurant, shop sales

Notes: * indicates the callback rate for LGBT sample is significantly lower than for the non-LGBT comparison group (95% confidence levels)

4.3.2 Gender Identity Discrimination

Applying similar research strategies to assess discrimination against transgender people is rare, but the three existing studies (summarized in Table 1) all show a substantial degree of discrimination in hiring. In 2008, an advocacy group sent two (matched and trained) pairs of transgender and cisgender auditors to apply and interview for high-end retail sector jobs in New York City (Make the Road New York 2010). Their report found an 8.3% callback rate for transgender auditors versus a 50% callback rate for cisgender auditors.

A Swedish study used the familiar correspondence approach, signaling that an applicant was transgender or cisgender by mentioning a past name change in all cover letters (Granberg, Andersson, and Ahmed 2020). Transgender applicants are signaled when the name goes from a typically male (or female) name to a typically female (or male) name. The authors found that transgender applicants had a 16.3 percentage point penalty in applying for male dominated jobs compared to cisgender men and a 13.1 percentage point penalty in applying to female dominated jobs compared to cisgender women.²⁶

A study in Malaysia, Singapore, Thailand, and Vietnam undertook a similar correspondence study in 2016-2017 for entry-level jobs (Winter et al. 2018). This study used names and explicit gender markers on resumes. Overall, cisgender women were 59.6 percent more likely to receive a positive response to a job application than a transgender woman, while cisgender men were 40.8 percent more likely to receive a positive response than a transgender man.

4.3.3 Theoretical Explanations for Discrimination

Ideally, the wage studies and experimental literature would not only test for the presence or effects of discrimination against LGBT people, but they would help us better understand the economic sources of such discrimination, with the primary candidates being taste discrimination or statistical discrimination. Two wage studies have found that negative attitudes – a plausible measure of distaste – are associated with larger wage gaps for men in same-sex couples (Burn 2019; Hammarstedt, Ahmed, and Andersson 2015). One study using a dictator game experiment found evidence of taste discrimination by more socially conservative individuals (B. Aksoy, Chadd, and Koh 2023).

²⁶ Neumark (2018) argues that the findings of correspondence studies can be statistically biased, the so-called "Heckman critique" (Heckman 1998). If employers have data on or make assumptions about differences in the variance of unobserved productivity for LGBT people or cisgender heterosexual people, those assumptions might make them less likely to hire an LGBT applicant because of more uncertainty about whether the applicant is qualified, even if they have the same observable characteristics as in a correspondence study. If this is present, then the findings of discriminatory treatment might be biased. For instance, if employers only hire candidates whose predicted productivity is above a certain high threshold and LGBT people are assumed to have lower variance in their unobservable productivity components, an unprejudiced employer would still rationally hire cisgender heterosexual people given their higher variance and higher predicted probability of being above the threshold. Granberg et coauthors used Neumark's methods in the Sweden study but found little evidence of such a form of statistical discrimination.

Experimental studies with measures of employer attitudes suggest that both taste and statistical discrimination might be at work. Drydakis (2021) found that measures of employers' taste and statistical discrimination motives (where the latter involved beliefs about higher turnover and poor performance of gay men) were each negatively correlated with the likelihood of an interview callback for gay men in Greece. Similarly, Baert (2018)'s lab experiment showed that higher levels of risk aversion led to lower ratings for gay job applicants by student "employers," but risk aversion could be related both to discriminatory tastes (e.g., whether coworkers would react negatively) and to statistical discrimination (e.g., an assumption that the variance of productivity is higher for gay men).

One challenge in identifying statistical discrimination is in specifying the nature of the unobserved information – the job-relevant characteristics that differ in means or variance for LGBT people compared with heterosexual cisgender people (a crucial step, according to Neumark, 2018). Some have argued that stereotypes about lesbian women and gay men being gender nonconforming might generate statistical discrimination, as was apparent in Tilcsik (2011) where employers were less likely to invite gay men to interviews for jobs described in more masculine terms. However, Tilcsik (2011) noted that this only constitutes statistical discrimination if stereotypically masculine characteristics are related to higher productivity in those positions. Also, as already mentioned, Burn and Martell (2022) found no effect of gender nonconformity on wage differences for LGB people compared to heterosexuals. Another possibility might be assumptions about higher rates of HIV infection in gay men (Elmslie and Tebaldi 2014; Badgett 2001). That assumption might have once been used by employers to discriminate against gay men, although the treatability of HIV makes those arguments much less relevant now. Statistical discrimination would predict *advantages* for lesbian women that are seen in wages but are not found in the experimental studies, as also pointed out by Weichselbaumer (2022) (with the only weak supporting evidence coming from Baert, 2014, and a lab experiment in Ecuador by Zanoni et al., 2023).

Overall, then, the studies provide some support for both taste-based and statistical discrimination arguments, but the statistical discrimination argument would benefit from further elaboration.

4.3.4 Effects of Nondiscrimination Laws

In response to concerns about discrimination in employment and other areas, policymakers have passed laws against discrimination based on sexual orientation and gender identity. In the United States, 24 states have laws that specifically outlaw sexual orientation and/or gender identity discrimination in employment, and the 2020 US Supreme Court ruling in *Bostock v. Clayton County* clarified that federal protections against sex discrimination in employment also apply to discrimination based on sexual orientation and gender identity. Globally, 77 countries prohibit sexual orientation discrimination in employment and 46 have protections against gender identity discrimination.²⁷

²⁷ Authors' tabulations from the ILGA World Database (<https://database.ilga.org/>), last accessed April 19, 2023.

Existing research on the effects of nondiscrimination laws focuses on the US because of its internal variation in policies. The Tilcsik (2011) and Mishel (2016) correspondence studies found lower rates of discrimination in states with sexual orientation nondiscrimination policies. The earliest wage study of the labor market effects of such policies found no effect of state or local nondiscrimination laws on the wages of people in same-sex couples (Klawitter and Flatt 1998). Later studies have found that state-level laws were associated with a lower earnings gap for gay men (Klawitter 2011; Amanda K. Baumle and Poston Jr. 2011; Martell 2013b), mainly from a rise in weeks of employment (Klawitter 2011) and from provisions that allow damages to be awarded to successful plaintiffs (Burn 2018). Carpenter and Klawitter (2007) found that local nondiscrimination ordinances in California were associated with significantly greater earnings for sexual minority men and women working in the public sector (but not in the private sector) relative to heterosexuals.

Effects of policies on sexual minority women have been less positive when using quasi-experimental approaches that exploit the timing of policy changes. Burn (2018) found that state employment nondiscrimination acts significantly reduced employment and labor supply of women in same-sex couples. Delhomme (2020) also found that state and local anti-discrimination laws reduced the employment and income advantages for women in same-sex couples compared to women in different-sex couples. He also found that these policies were associated with a relative increase in fertility for women in same-sex couples compared to men in same-sex couples, suggesting that one possible mechanism was that the policies induced one female partner to specialize in labor market production while the other partner specializes in home production (including childrearing).

Finally, Aksoy, Carpenter, and Sansone (2023) noted that a substantial fraction of individuals – including sexual minority individuals – are unaware that existing anti-discrimination laws include sexual orientation and gender identity as protected characteristics. This low level of knowledge among employees and employers could thus reduce the efficacy of anti-discrimination laws.

4.4 Other Labor Market Outcomes

4.4.1 Employment, Unemployment, and Labor Supply

Another way of assessing the presence of hiring discrimination based on sexual orientation or gender identity has been to compare employment outcomes for LGBT people. Valfort (2017)'s review of this relatively small body of research found some evidence of lower employment probabilities for gay men (on average 3.5 percent lower) but higher probabilities for lesbian women (on average 8 percent higher). For women, these employment patterns track the finding that lesbian and bisexual women, in particular, are more likely to participate in the labor force than are heterosexual women (see Badgett, Carpenter, and Sansone, 2021, for recent evidence), perhaps because of different patterns of household specialization.

Employment differences are more striking for transgender people, with large negative employment gaps compared to cisgender people (Carpenter, Eppink, and Gonzales 2020; Carpenter, Lee, and Nettuno 2022; Ciprikis, Cassells, and Berrill 2020). Unemployment also appears higher for transgender people (Leppel 2016; 2020; Carpenter, Eppink, and Gonzales 2020; Shannon 2022). Geijtenbeek and Plug (2018) found that working for pay (and labor force participation) fell post-transition for transgender women but rose for transgender men. Campbell, Badgett, and Dalton-Quartz (2022) found that transgender women with masculine gender expression or perception had employment outcomes more similar to those of cisgender men than transgender men, while transgender men with a feminine gender expression or perception had employment outcomes similar to those of cisgender women. More research is needed to assess the reasons for such patterns and the degree to which they are effects of labor demand differences or labor supply differences.

4.4.2 Occupational Segregation

The existence of occupational segregation among men and women is well-known (Blau and Kahn 2017), as is segregation by race (Del Río and Alonso-Villar 2015). Early wage studies found over- and under-representation of LGB people in some occupations, and later studies confirm that occupations are segregated by sexual orientation (Badgett 1995a; A.K. Baumle, Compton, and Poston, Jr. 2009; Antecol and Steinberger 2013; Sansone and Carpenter 2020; Del Río and Alonso-Villar 2019b). In data on same-sex couples, 22.5 percent of people in same-sex couples (but only 9 percent of people in different-sex couples) would have to change occupations to achieve the same distribution of occupations in the entire labor force, and this distribution contributes to lower wages for people in same-sex couples (Del Río and Alonso-Villar 2019b).

To some extent, these patterns might reflect the choices of LGB workers who are seeking more tolerant coworkers and occupations, consistent with evidence from two studies (Badgett and King 1997; Plug, Webbink, and Martin 2014). Working conditions in some occupations might provide more task independence, which might make being LGB easier to conceal, thus generating the observed correlation between task independence and LGB presence (Tilcsik, Anteby, and Knight 2015). In support of that hypothesis, another study showed that jobs with more task independence have lower wage gaps for gay/bisexual men (Martell 2018). Another possibility is that LGB people develop social perceptiveness for managing challenging situations related to their sexual orientation, giving them an advantage or interest in occupations requiring social perceptiveness (Tilcsik, Anteby, and Knight 2015).

A striking empirical regularity is that gay men and men in same-sex couples work in occupations that have more women in them than do heterosexual men, and lesbian women and women in same-sex couples work in occupations that have more men in them than do heterosexual women (Ueno, Roach, and Peña-Talamantes 2013a; A.K. Baumle, Compton, and Poston, Jr. 2009; Del Río and

Alonso-Villar 2019a; Tilcsik, Anteby, and Knight 2015; Badgett and King 1997).²⁸ The symmetry of gender nonconformity in occupations of LGB people could be related to a greater willingness of both gay/bisexual men and lesbian/bisexual women to ignore traditional gender norms for occupations relative to heterosexual individuals. However, results from correspondence studies described earlier suggest that employers deploy gender gatekeeping, discriminating against gay male job applicants more in male dominated jobs or jobs with stereotypical male job descriptions (Tilcsik 2011; Ahmed, Andersson, and Hammarstedt 2013; Drydakis 2015; Flage 2019; Dilmaghani and Robinson 2022). Similarly, employers appear to favor lesbian women in some male-dominated jobs like manual labor and to discriminate against lesbian women more in female-dominated jobs (Ahmed, Andersson, and Hammarstedt 2013; Baert 2014; Drydakis 2015). A lab experiment by Gorsuch (2019) suggested that male employers do not hold LGBT women to the same behavioral gender norms imposed on heterosexual women.

So far, no studies have taken on this question related to gender identity and the occupational segregation of transgender people, in part because there are no data sources that have established basic descriptive facts about occupational sorting of transgender workers.

5. Conclusions

To conclude, we highlight common themes that emerge from the now extensive literature on the economics of sexual and gender minorities, including the continuing importance of gender. We also explicitly identify areas and populations that need further research, and we identify challenges and opportunities related to new administrative datasets that have the potential to deepen our economic understanding of sexual and gender minorities. Finally, we discuss the important role of LGBTQ+ identified economists in advancing the literature in this area.

5.1 The Continuing Importance of Gender

One recurring finding in this review of economic research on LGBTQ+ people is the variation in economic outcomes for distinct groups of gay men, lesbian women, transgender men and women, bisexual men and women, or people not identifying with the gender binary. To give one example, it is remarkable that across countries, time periods, and different datasets, most studies have found a wage premium for lesbian women and a wage penalty for gay men. To at least some extent, these variations reflect the important role of gender in shaping economic opportunities and outcomes more broadly. For instance, the gender wage gap is likely behind the finding that two women in a same-sex couple have lower household incomes and higher poverty rates than male same-sex couples or married different-sex couples, and earnings for transgender people are also affected by the gender wage gap as they take steps to affirm their gender. For lesbian women, the expectation or reality of having a lower earning female partner might also drive decisions about education,

²⁸Several studies also demonstrate the presence of a ‘lavender ceiling’, whereby gay men advance to ‘lower level’ managerial positions but are kept out of ‘higher level’ managerial positions that generally have increased decision-making influence and pay, which may be an additional factor accounting for the lower wages of gay men relative to similarly situated heterosexual men (C. G. Aksoy et al. 2019; Bridges and Mann 2019; Frank 2006).

occupation, and labor force attachment. Furthermore, lesbian women are more likely to have children than gay men, perhaps affecting their partner choice and household division of labor.

The value of the literature reviewed in this article also contributes to our understanding of the role of gender in other ways. Indeed, one goal for some economists in this subfield has been to use variation in the gender composition of couples to better understand the role of gender norms as opposed to biology, efficiency, or bargaining power in the household division of labor (see for instance Badgett, 1995b, and Oreffice and Sansone, 2023). In general, we see that same-sex couples in many countries specialize less between household and market labor than do different-sex couples with the same characteristics and wage differences. Focusing just on couples with children heightens the contrast. Overall, same-sex couples appear to negotiate and decide on a family division of labor that results in more sharing of household labor and more equal shares of household incomes than would be expected based on bargaining power and comparative advantage hypotheses, suggesting an important role for differences in norms about the appropriate roles of men and women in families.

Research on education and labor market outcomes strengthens the case that gender norms shape those outcomes beyond the influence of economic incentives. Transgender and nonbinary people appear to be penalized economically because they depart from social expectations based on their sex assigned at birth and the normative gender identity that goes along with it. One study also showed that transitioning earlier in life led to economic outcomes more like cisgender people with the same gender identity, suggesting that early gender socialization and gendered human capital choices have lifelong effects (Shannon 2022).

We found other choices that are gender nonconforming for lesbian, gay, and bisexual people but not necessarily penalized. Sexual minorities are more likely than heterosexual people to go into college majors dominated by women (for gay men) and men (for lesbian women). We also see less gender-conforming occupational choices for sexual minorities. That pattern might reflect nontraditional college major choices as well as employer stereotypes, since correspondence studies find that employers put up extra barriers for gay men in male-dominated jobs and lesbian women in female-dominated occupations. Put together, these patterns confirm a strong ongoing role for gender norms but also demonstrate resistance to those norms and challenges to institutions based on binary divisions of sex and gender by LGBTQ+ people.

5.2 Areas for Future Research

A common refrain raised in the literature we have reviewed here is that along all the economically relevant dimensions of life – human capital accumulation, family formation, and employment – we lack systematic evidence on bisexual individuals and transgender individuals. The absence is also true for asexual/aromantic individuals as well as intersex individuals (who may consider themselves sexual and/or gender minorities). Part of this is certainly due to data limitations and the fact that large surveys are only now including sexual orientation (and, to a lesser extent, gender identity) questions. But we stress here that these omissions are significant. For example, bisexual

women are the largest sexual minority group: in most surveys, women identify as bisexual at higher rates than they identify as lesbian. And yet we know little about why women are so much more likely than men to identify as bisexual; whether bisexual people are perceived or ‘read’ as sexual minorities in labor, housing, education, and other markets; why bisexual individuals are so much more likely to be in different-sex romantic relationships than same-sex romantic relationships (and whether their partners are also bisexual); and many other economically important questions. It is clear that economics research needs much more evidence on the B, T, Q, and other identities (those represented by the “+”) within the LGBTQ+ community.

The absence of sexual and gender minority groups captured by the plus sign within economic studies is especially noteworthy. Asexual individuals may be disadvantaged in the labor and housing market or overlooked by the social welfare system if they are more likely to remain unmarried and childless (Weis et al. 2021). Intersex people may be subject to harmful nonconsensual medical treatments. In addition to these challenges, they commonly experience erasure of their identity both within and outside of the LGBTQ+ community and in current data sources used in economics. The diversity in constraints and in economic outcomes within LGBTQ+ populations merits the inclusion of new questions or modification of existing questions to elicit asexuality and intersex conditions (NASEM 2022).

Furthermore, our review has focused mainly on studies in high-income countries. But it is worth noting that the economic and social experiences of LGBTQ+ people may differ in low- and middle-income countries throughout the life course. For example, there are potentially extreme exclusions from educational access in poorly resourced settings, such as parents refusing to pay school fees for sexual and gender minority children. In places where homosexuality is criminalized, LGBTQ+ people may face legal and social barriers to romantic unions and family formation that are fundamentally different from those faced by LGBTQ+ people in higher-income countries. And labor market opportunities may be more acutely restricted for LGBTQ+ people in low- and middle-income countries. More work is needed in these settings to provide a complete picture of the economic well-being of LGBTQ+ people worldwide.

Several specific questions within each of our three main life course sections also merit further inquiry. For example, future work could test whether individuals who identify as LGBTQ+ in high school make different education choices (e.g., college major) than individuals who identify as LGBTQ+ in college. Within the economics profession, current analyses of representation of women and racial minorities among undergraduate students in economics, PhD students, and assistant professors, as well as promotion probabilities to associate professor and professor positions (Ginther and Kahn 2004; Bayer and Rouse 2016; Lundberg and Stearns 2019; Siegfried 2022) could be extended to sexual and gender minorities. Similarly, building on the literature on the effect of teachers’, professors’, and teaching assistants’ gender, race, and ethnicity on the performance of students who share their instructor’s demographic characteristics (Dee 2005; Lusher, Campbell, and Carrell 2018; Sansone 2017; 2019b), future studies could investigate whether LGBTQ+ teachers affect LGBTQ+ students’ educational achievements. Finally,

individual schools, universities, school districts, states, and countries around the world are implementing policies that are either directly targeting at or likely to have a disproportionate impact on LGBTQ+ students, such as anti-bullying laws, Gay-Straight Alliances, inclusive curricula, ‘Don’t Say Gay’ and ‘No Promo Homo’ laws (Deambrosi 2022), policies prohibiting transgender students to use the bathroom that reflects their gender identity, and rules preventing transgender students from competing in sports. Future work should examine the effects of these policies on the social and educational outcomes of sexual and gender minority youths.

Regarding family outcomes, we know relatively little about older LGBTQ+ families in retirement and beyond. For example, older LGBTQ+ couples and individuals may make different choices than heterosexuals due to differences in fertility, occupation, income and wealth, health, and geography. Moreover, we know very little about how older LGBTQ+ individuals find and form relationships. To answer these questions, information on sexual orientation and gender identity needs to be included in large surveys of older populations. Economics also needs a better understanding of how LGBTQ+ people meet, match, and form relationships and how the technological innovations in dating have changed the relationships of LGBTQ+ people. Finally, more work is needed in economics to shed light on the transformation of families as gender is increasingly understood and perceived as a gradient rather than a dichotomy of man and woman.

Finally, regarding labor market outcomes, more work in economics is needed on intersections of sexual and gender minority status with other characteristics. Strategies that take White, cisgender, heterosexual men as the baseline will provide a basis for assessing the roles of sex, sexual orientation, gender identities, race, and ethnicity; adding other characteristics such as age and disability might be useful to assess as well. Moreover, economics needs not just more data but also different types of data on variables specific to the experience of LGBTQ+ people. For example, data on disclosure of sexual orientation and gender identity in the workplace would allow researchers to better focus on people most vulnerable to direct discrimination or to measure more open work environments, and such data might be collected in detailed modules targeted at LGBTQ+ respondents on larger population-based surveys. To assess differential treatment at later stages of the hiring process, at promotion, or at discharge/layoffs, data from individual firms may be useful. Economics also needs more research that identifies the occupations and industries that are more inclusive of LGBTQ+ people. Finally, novel data collected by fair employment agencies or data on LGBTQ+ membership on corporate boards could provide insights into details of discrimination that illuminate the relative importance of tastes, stereotypes, and policy.

5.3 The Promise and Perils of Administrative Data for Studying LGBTQ+ People

One common emerging theme related to future work on sexual and gender minorities is the potential role for administrative data to provide new insights into LGBTQ+ economic well-being, including in the United States. Despite our enthusiasm for going beyond small samples from surveys, we note here some potential perils and pitfalls of studies based on such sources. First, in the context of studying gender minority populations, we are increasingly learning that there are

many individuals who would not identify themselves as ‘transgender’ but who nonetheless consider themselves gender minorities (e.g., some nonbinary individuals). Moreover, not all gender minorities will take the legal, medical, or governmental steps required to trigger identification in administrative datasets, which typically include name and gender marker changes on legal records and documents such as driver’s licenses or, in some cases, treatment related to gender affirmation in medical records (e.g., hormone therapy, surgery, or gender dysphoria diagnoses).²⁹ The decision to undertake such activities may well be correlated with unobserved determinants of economic outcomes, such as family and social support or local anti-transgender stigma.

Also, administrative data are likely to be useful for studying sexual minorities in same-sex legal unions. Indeed, there have already been several exciting and important studies using administrative data on same-sex couples from countries such as Norway, Sweden, Denmark, Finland, and the Netherlands (Andresen and Nix 2022; Evertsson, Moberg, and Vleuten 2021; Mazrekaj, De Witte, and Cabus 2020; Kabátek and Perales 2021). However, these data and approaches will be less useful for understanding economic choices and outcomes for single sexual minorities and for bisexual individuals (who are much more likely to be in different-sex relationships if they are in any romantic partnership).

Therefore, administrative data will not be an adequate substitute for survey data on LGBTQ+ people. Notably, some other countries do or will include individual level questions about sexual orientation and/or gender identity on their national Censuses, including Canada, the United Kingdom, and New Zealand. These new population-level datasets have the potential to provide more accurate and clear information about the size and the economic conditions within the LGBTQ+ population.

5.4 A Final Remark

We conclude the paper by highlighting that the dramatic improvements in attitudes toward sexual and gender diverse people have had meaningful implications for the development of the literature we review here. LGBTQ+ economists are disproportionately the ones who are writing on these topics: they – or rather we – are more likely to have lived experience that can be critical for informing, contextualizing, and refining key economic hypotheses and tests.

As another example, a growing literature that we do not review here addresses the consequences of availability of legal same-sex marriage in the United States and elsewhere; that work has been informed by LGBTQ+ economists and other LGBTQ+ social scientists who deeply and personally understand the relevant institutions and history that shaped the policies used to test for effects on economically relevant outcomes.

²⁹ Surgical treatment is also necessary for a change in gender identification in at least 18 countries currently (according to ILGA World Database, <https://database.ilga.org/>, last accessed August 27, 2023) and in the United States depending on the state and year (Herman and O’Neill 2021; MAP 2023).

As this work has spillover effects on and implications for our understanding of a wide range of questions relating to the economics of gender, family, culture, and other outcomes, the discipline's more welcoming environment for LGBTQ+ identified economists has had tangible benefits for our profession.

Appendix: Definitions and Terms

Lesbian, gay, bisexual, transgender, and queer populations are characterized by having minority sexual orientation and/or gender identity (SOGI).³⁰ Sexual orientation refers to one's sexual attraction, behavior, and/or identity. Individuals with same-sex attraction and/or same-sex sexual activity are generally referred to as lesbian women (or lesbians), gay men, and bisexual individuals (as are those who identify as such), or sexual minorities.³¹ In contrast, heterosexual or straight individuals are individuals who are attracted to and/or have sex with individuals of a different sex. Recent population surveys across different countries suggest that around 9 percent of adults are not heterosexual (Boyon 2021).

Gender identity refers to one's sense of being male, female, both, or neither. Gender minorities are individuals whose current gender does not match their sex assigned at birth. Cisgender individuals are people whose current gender aligns with their sex at birth. Recent population surveys estimate that around two percent of adults are not cisgender (Boyon 2021). Gender minorities include transgender men, transgender women, and nonbinary individuals, among others.³² Transgender individuals are people whose gender identity and/or gender expression or behavior differ from their sex at birth or differ from gender-cultural norms attached to their sex at birth. Nonbinary individuals are people whose gender identity is neither exclusively boy/man nor exclusively girl/woman. In the societies studied here, sexual orientation and gender identity are distinct

³⁰ The terms used to describe sexual and gender diverse populations have changed significantly over time. For example, the term 'queer' used to be a derogatory slur against sexual minorities but has been reclaimed by the LGBTQ+ community. We recognize that the specific terms we use in this paper may be considered offensive by some individuals, including sexual and gender diverse people. Moreover, the actual sexual orientations and gender identities are numerous, and individuals commonly perceived to be LGBTQ+ may have varying degrees of connection and sense of belonging with the LGBTQ+ community. People's opinions vary regarding the use of LGBTQ+ and related terms to describe themselves or others.

³¹ Sexual minorities can also include aromantic and asexual individuals (people without romantic attraction and people without sexual attraction/arousal, respectively), individuals who are questioning their sexual identity, and others. To our knowledge, there is no economic study analyzing data on these sub-populations.

³² Gender minorities may include transsexuals, androgynous people, cross-dressers, genderqueers, and other gender non-conforming people. Some, but not all, of these individuals may desire to undergo medical and/or legal sex changes. Transgender individuals whose gender identity does not match their sex assigned at birth and who desire to change from one sex to another are sometimes referred to as 'MTF' (for individuals who transition from male to female) or 'FTM' (for individuals who transition from female to male). There is a wide variance in the use of these labels; for example, 'MTF' can be used by individuals who are assigned male at birth and identify as a woman but have not taken steps to change their gender expression. Gender minorities also include intersex individuals: people who were born with sexual and reproductive traits that are neither exclusively male nor exclusively female. We do not review economics literature on gender minorities other than transgender people because we are not aware of peer-reviewed economics studies on these populations. This is likely due to data limitations: very few surveys allow identification of transgender or nonbinary individuals, and we are aware of no large population representative surveys that allow identification of intersex or other gender minority groups.

concepts; gender minorities can have any sexual orientation, and indeed representative surveys show that most gender minorities identify as heterosexual. Similarly, sexual minorities can have any gender identity, and the vast majority of sexual minorities identify as cisgender.

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Online Appendix for “A Review of the Economics of Sexual Orientation and Gender Identity”

Appendix A. Historical and Social Context

A.1 Introduction

In 1895, Oscar Wilde was convicted because of “the love that dare not speak its name”. Alan Turing, one of the founders of computer science and artificial intelligence, was prosecuted for homosexual acts and forced to undergo chemical castration in 1952, leading to his suicide shortly afterwards. In Nazi Germany, homosexual individuals were actively prosecuted and sent to concentration camps (Apostolou 2020c). For most of the 19th and 20th centuries, sexual and gender minority individuals had to live in an environment with widespread invisibility in language, without a formal conceptualization of LGBTQ+ identities, rejected by their families, and without a community that could offer support or guidance (Margolin 2021). Same-sex desire was “without name... it is a word unsaid, it is not in any dictionary, utterance, symbol” (Whitman 1855). Today, same-sex sexual acts can still be punished by death in 11 countries in Sub-Saharan Africa and the Middle East (ILGA 2020), and in 2021 the International Transgender Day of Remembrance honored the lives of 375 transgender and gender-diverse people murdered in the previous 12 months (TvT 2021).

As described in this section, for decades (or even centuries), LGBTQ+ individuals have often faced negative attitudes, laws, and policies preventing them from achieving their full economic potential, thus likely leading to lower aggregate economic growth. Indeed, Badgett, Waaldijk, and Rodgers (2019) have found a positive association across countries between legal rights for LGBTQ+ individuals and real GDP per capita since the 1960’s.

At the same time, it is worth mentioning that, while recent and current attitudes and policies affecting LGBTQ+ individuals have been shaped by political views in Western Europe, as well as by the Abrahamic religions, indigenous cultures in the other continents (as well as ancient European civilizations) have often held diverse views on sexual orientation and gender identity. In many – but not all – of these cultures, same-sex attraction and sexual behavior were generally accepted (although most individuals were still expected to eventually be in a different-sex marriage and have children), and gender nonconforming individuals were tolerated or even welcomed. This is particularly important to remember when analyzing data or when designing survey questions (Bauer et al. 2017). For instance, sexual and gender minorities may use different terminologies – such as the term two-spirit used by gender-diverse Indigenous individuals in North America – and the rate of misreporting in surveys may be lower in countries such as India or Pakistan where a third gender population has been traditionally recognized. Also, some cultures might map sexual behavior onto identity categories defined by gender identity as well as the sex of sexual partners. Altman (2001) points to categories that involve both gender-crossing and homosexual behavior, such as *waria* in Indonesia, or *bayot* in the Philippines.

An additional goal of this section is to emphasize that current LGBTQ+ policies and laws have a long history. For instance, sodomy laws have been the bedrock of anti-gay discrimination policies (Eskridge 2008). Sodomy laws were used in the US against sexual minorities to limit their rights to adopt or raise children, to justify firing them or denying jobs, and to allow unequal treatment such as excluding them from hate-crime laws (ACLU 2019). Old discriminatory laws can have long-lasting effects even after being repealed, while inertia in governments can lead to laws and organizational rules not being modified or updated, thus contributing to institutional discrimination (Small and Pager 2020). For instance, homosexuality is still illegal in many countries due to laws introduced by the British Empire and retained – even in high-income countries such as Singapore (until 2022) – after former colonies gained independence (HRW 2008). In addition, most countries do not include a third gender in official documents, and many laws restrict or limit the ability of transgender and intersex individuals from modifying their gender marker on their driver’s license or from changing their name, thus affecting their voting and civil rights.

A.2 Legal and Historical Views Regarding LGBTQ+ Individuals

A.2.1 Sodomy Laws

The word *Sodomy* comes from the Latin expression *peccatum Sodomiticum* (sin of Sodom), referring to the Genesis chapters on the cities of Sodom and Gomorrah. The sexual acts indicated as *sodomy* historically referred to both oral and anal sex. Sodomy laws are laws that criminalize these specific sexual activities.

While having clear religious foundations in Judaism, Christianity, and Islam, sodomy laws targeting same-sex sexual activities were turned into secular laws and spread around the world mainly through the British Empire (Sanders 2009; Asal, Sommer, and Harwood 2013). Sodomy was also punished by death in the Kingdom of Spain (Apostolou 2020b). In contrast, the Penal Code adopted in France in 1791 and influencing legislation in many countries in Continental Europe followed the ideal of *universalité* disseminated during the French Revolution, and it did not make distinctions between heterosexual and homosexual acts (Chang 2021; Gunther 2009). Many decriminalization efforts in the rest of the world have been recent and have started only after WWII: for instance, sodomy laws were repealed in England and Wales in 1967, Canada in 1969, South Africa in 1998, United States in 2003, and more recently in India in 2018 and Singapore in 2022. Despite this progress, same-sex sexual activity is still criminalized in more than 60 countries (ILGA 2020).

The path to decriminalization has been particularly tortuous in the US (Ciacci and Sansone 2023). Sodomy was a capital crime punishable by death in most American colonies. Even after the US declaration of independence and throughout the 20th century, sodomy was a crime often punishable by a life sentence. The years after WWI were characterized by a “gay panic”: a widespread belief that homosexuals were sexual predators targeting children and susceptible young adults to make them gay. The legal and social environment remained hostile even after WWII. The FBI created a data bank of known homosexuals (Eskridge 2008). During the “Lavender Scare” in the 1950s and

1960s, thousands of US government employees were fired because they were suspected to be homosexual (D. K. Johnson 2004). In states such as California and Florida, homosexual teachers and university professors were regularly fired for “immoral conduct”. In the same period, the armed forces discharged between 2,000 and 5,000 persons, especially women, as suspected homosexuals (Williams and Weinberg 1971).

Thanks to the work done by legal experts trying to persuade states to modernize their criminal codes, and later by activists targeting state and federal judicial courts, more and more states started to repeal their sodomy laws: Illinois became the first state to decriminalize consensual sodomy in 1961. Connecticut did the same in 1969. Despite those shifts, homosexual behavior was still illegal in 14 US states before the remaining laws were struck down by the US Supreme Court in *Lawrence v. Texas* in 2003. And yet, these rights are not secure: in 2022 Justice Clarence Thomas argued in *Dobbs v. Jackson Women’s Health Organization* that the Court should revisit past decisions based on substantive due process such as *Lawrence*.

In conclusion, sodomy laws not only led to LGBTQ+ individuals being treated as criminals, but they were used to justify numerous forms of discrimination, harassment, and blackmail (Ciacci and Sansone 2023; Badgett 2020). It is still not clear what have been the effects of the decriminalization of same-sex sexual activity on labor market outcomes for sexual minorities, attitudes towards sexual minorities, incidence of sexually-transmitted infections, and mental health in high-income countries such as the US as well as in countries that recently repealed their sodomy laws such as India.

A.2.2 Sexual Orientation and Gender Identity in Ancient and Non-Western Societies

Within Europe, same-sex sexual behaviors were approved or at least tolerated in ancient Greece, in the Roman Empire, and among the Celts (Apostolou 2020b), although the extent and level of acceptance are still discussed (Clarke 1978). Similarly, there is some evidence of same-sex sexual acts and relationships in Islamic societies and among Arab rulers (Apostolou 2020c). Same-sex relationships were common or even fashionable among the higher social classes in Imperial China, the samurai in Japan, and some Buddhist monks in Tibet (UNESCO 2015). Archeological evidence of same-sex behaviors and even approval of same-sex relationships have also been found for pre-Colombian societies such as the Maya, while the Aztecs and the Incas are believed to have been hostile to such relationships (Apostolou 2020c), and there is no clear understanding of homosexual views and laws in ancient Egypt (Reeder 2000).

With a few exceptions, women are conspicuously invisible throughout history and across culture, with scant evidence of same-sex relationships between women: either these sexual acts and relationships were ignored, less frequent, or they were considered less threatening to social stability (Apostolou 2020a).

On the other hand, several cultures have traditionally tolerated, accepted, or even embraced transgender, third gender, or intersex individuals for thousands of years. For instance, in many

countries in Southeast Asia, these individuals perform at celebrations and ceremonies, or they are considered healers, shamans, and spiritual leaders (UNESCO 2015). *Hijras* have similar roles in Hindu communities, and are legally protected in South Asia (Khaleeli 2014). Another example is provided by *köçeks* – young male dancers cross-dressed in feminine attire – in the Ottoman Empire (Apostolou 2020c). Relatedly, cultures from Indigenous Australians to Native Americans accept individuals born with both male and female “spirits” in one body. Sexually and gender diverse gods, deities with both masculine and feminine characteristics, and references to more than two genders can be found, among others, in Indonesia, Nepal, and in some Buddhist texts (UNESCO 2015).

A.2.3 Economic contexts for the Emergence of Identities

In many contemporary societies, people with same-sex attraction or with same-sex sexual partners often developed specific sexual identities as homosexual, gay, lesbian, bisexual, or queer persons (Laumann et al. 1994). Similarly, some individuals whose gender expression or gender identity differs from the sex assigned at birth have come to identify as transgender (James et al. 2016). As noted in an earlier section, these different dimensions of sexuality (attraction, behavior, identity) or gender (expression, identity) are positively but not perfectly correlated (Laumann et al. 1994). For example, individuals might feel an attraction to someone of the same sex without acting on it or without identifying as gay or bisexual.

Economic contexts that have shaped the development of those sexual and gender identities might well explain some of that imperfect correlation. In particular, some historians of the United States have pointed to economic shifts that created opportunities for people to not only find same-sex partners but to also develop a sense of sexual orientation as a personal characteristic or identity. That identity defined them in some important way and linked them to communities made up of others with those identities. The development of industrial capitalism generated jobs that provided economic independence from families of origin, particularly for men (D’Emilio 1983). Those jobs often drew men to cities, where boarding houses, laundries, and restaurants made living outside of families possible, and where the presence of other men seeking male partners enhanced their opportunities for finding sex partners (Chauncey 1995; Posner 1994; D’Emilio 1983). As communities of men who loved other men developed, an individual’s homosexual or gay identity became a way to pull people together for common purposes, such as for building new cultural or economic settings or for political efforts to resist oppression (D’Emilio 1983).

For women, Matthaëi (1995) noted the importance of expanding opportunities for education and employment that made it possible for women to live outside of heterosexual marriages in the early 20th century. The fact that those opportunities existed in sex-segregated settings, such as women’s colleges or jobs held only by women, also enhanced their usefulness for the development of lesbian identities.

Similarly, historians of transgender people have pointed to how the limited economic opportunities for women might have led some to cross-dress or even live as men or husbands of women,

particularly in the 19th century, although these different gender expressions do not mean they should be thought of as what we mean by transgender today (Stryker 2008; Manion 2020; Matthaei 1995). More recently, opportunities for transgender people have also been shaped by medical technologies (Stryker 2008) and communications technologies, such as newspapers (Manion 2020) and the internet (Stryker 2008).

In the late 20th century, globalization contributed to the spread of LGBTQ+ identities beyond the frequently-studied wealthy industrial countries (Altman 2001). The movements of people (travel and tourism) and ideas (through the internet and other communications media) across borders also brought new ways of defining sexual minorities and gender minorities.

A.3 How the Medical Community Has Viewed and Treated LGBTQ+ Individuals

A.3.1 When Being LGBTQ+ Was Considered a Disease

During most of the 20th century, LGBTQ+ individuals were often ostracized by the medical community, marginalized, considered sick or, worse, spreaders of dangerous diseases. For instance, between 1946 and 1957, 29 US states expanded or introduced sexual psychopath laws allowing medical treatment of homosexuals, with potential indefinite detention (Eskridge 2008). The legacy of such an approach – with stigma among LGBTQ+ individuals, lack of training of healthcare professions on transgender and intersex care, as well as HIV treatment and prevention strategies, and explicit or implicit biases and prejudices held by doctors and nurses – is likely to have persisted nowadays and to be linked to the observed large health disparities by sexual orientation and gender identity (IOM 2011), as well as the discrimination routinely experienced by LGBTQ+ patients (Ayhan et al. 2020; Sabin, Riskind, and Nosek 2015).

The past decades have seen monumental and highly visible changes in the medical community's approach to sexual orientation and gender identity. In the US, the American Psychiatric Association removed homosexuality from the Diagnostic and Statistical Manual of Mental Disorders in 1973 (Lamberg 1998), while the World Health Organization removed homosexuality from the International Classification of Diseases in 1990. Regarding gender identity, being transgender was depathologized in the US by 2013 (Drescher 2015), and by the World Health Organization in 2018. In addition, intersex medical interventions are becoming increasingly controversial, especially when conducted during infancy and childhood (WHO 2015; Council of Europe 2015). Indeed, the Constitutional Court of Colombia restricted the age for surgical interventions on intersex children in 1999, and Malta passed a law in 2015 protecting intersex minors from non-consensual medical interventions (Malta 2015), followed by Portugal in 2018, Iceland in 2020, Germany in 2021, and Greece in 2022 (Guilbert 2018; Maltezou and Heinrich 2022; ILGA 2023b).

Despite these developments, pseudo-scientific 'conversion therapy' methods are still commonly used in most countries in an unsuccessful effort to modify a person's sexual orientation or gender identity (Salway et al. 2021), often causing long-lasting mental and physical damages (Turban et

al. 2020; Ryan et al. 2020; Campbell and van der Meulen Rodgers 2023). Bans against these methods have been introduced in Brazil (1999), Ecuador (2013-2014), Malta (2016), Germany (2020), Canada (2022), France (2022), Greece (2022), Israel (2022), New Zealand (2022), Vietnam (2022), Cyprus (2023), and Iceland (2023), as well as several states and territories in Australia, Mexico, Spain, and the US (ILGA 2020; 2023a). On the other hand, countries such as Indonesia and Malaysia continue to officially support conversion therapy (ILGA 2020).

A.3.2 How HIV/AIDS Impacted LGBTQ+ Individuals

An historical discussion of the economic and social lives of sexual minorities is not complete without an explicit discussion of the HIV/AIDS epidemic, which had a disproportionate impact on gay men and the evolution of the gay rights movement, especially in the US. Two broad strands of economics research are especially noteworthy. One examines the sociopolitical implications of HIV/AIDS and the associated policy responses to combat the disease. A different set of studies has used HIV/AIDS and related treatments – both Highly Advanced Anti-Retroviral Treatment (HAART) and Pre-Exposure Prophylaxis (PrEP)³³ – to understand the effects of disease and lifesaving technologies on sexual behaviors and economic outcomes of sexual minorities (as well as heterosexual individuals).

Some effects are very broad, as the epidemic appears to have shifted tolerance of LGBTQ+ people and political outcomes. Focusing on the societal impacts of the HIV/AIDS epidemic, Fernández, Parsa, and Viarengo (2021) showed that places with greater exposure to the gay community – as proxied by AIDS state rates and the share of same-sex couples in the 1990 US Census – experienced a larger increase in approval of same-sex sexual relations after the 1992 Presidential elections. This result suggests that the AIDS/HIV epidemic unified activist groups, increased exposure to the gay community, pushed the debate about LGBTQ+ rights in the national political arena, influenced the institutional development of the LGBTQ+ rights movement – as also mentioned in Badgett (2001) – and led to improvements in attitudes. In addition, the authors argued that these improvements reduced suicide rates among young people. Relatedly, Mansour and Reeves (2022) documented how Democratic candidates for the US House of Representatives in districts with high HIV/AIDS mortality rates in the 1980s obtained larger campaign contributions, experienced higher Democratic voter turnout, and received a larger share of votes in the 1990s, thus increasing their chances of winning. Other researchers have examined the policy responses to HIV/AIDS: in particular, Dillender (2023) estimated that local funding to US cities with high numbers of AIDS deaths following the Ryan White CARE Act in 1990 led to a larger reduction of AIDS deaths in cities receiving the funds.

³³ HAART is a combination of prescription drugs that prevents HIV from replicating in the body. When taken as prescribed, the latest generation of HAART usually leads to undetectable viral loads among HIV-positive individuals within a few months, which is now considered too low for infecting another person even in the case of unprotected sex (Eisinger, Dieffenbach, and Fauci 2019). PrEP is a daily medication that people at risk of HIV can take to reduce their risk of transmission. PrEP is highly effective when taken as prescribed: it reduces the risk of HIV transmission through sex by 99 percent.

Focusing instead on individual responses to HIV/AIDS and related treatments, early studies looked at the effect of the epidemic on sexual behavior and condom use (Martin 1987; McKusick, Horstman, and Coates 1985; Francis 2008). Multiple studies have since then examined the possible moral hazard effects of lifesaving HIV/AIDS treatments (Lakdawalla, Sood, and Goldman 2006; Chan, Hamilton, and Papageorge 2016) as well as the effect of HAART on labor market choices (Papageorge 2016; Hamilton et al. 2021).

A few studies have analyzed the recent introduction of PrEP medications to prevent HIV infections in HIV-negative individuals (Holloway et al. 2020; Tello-Trillo and McManus 2021). In line with the literature on antiretroviral treatments and moral hazard, Eilam and Delhomme (2021) noted that PrEP decreased the cost of sex without condoms, thus leading to moral hazard and an increase in other sexually-transmitted infections. In addition, Lennon (2022) showed that PrEP availability increased the costs of providing health insurance for employers in the US, thus leading to a reduction in employment, hours worked, and earnings for men in same-sex couples.³⁴

Finally, the economic consequences of HIV criminalization laws are still unclear (Lazzarini et al. 2013). For instance, some US states criminalize non-disclosure of HIV status, or require people living with HIV to register as sex offenders. Some states even criminalize exposure to body fluids that poses only a remote (if any) possibility of HIV exposure. In other states, HIV status can affect the severity of a sentence upon conviction for crimes such as prostitution or solicitation (CHLP 2021). Similar laws have been enacted in many other countries around the world (GNP+ 2010). It is important to note that “most HIV criminalization laws do not reflect current scientific and medical evidence” (CDC 2021). Furthermore, HIV criminalization laws do not seem to actually affect HIV-positive status disclosure, HIV transmission rates, or to be related to any HIV prevention behaviors (Harsono et al. 2016) – although some studies found somewhat different results (Delavande, Goldman, and Sood 2010). Negative consequences of these laws have also been documented, such as deterring people from seeking HIV care and remaining on HIV treatment, exacerbating HIV-related stigma and discrimination, and being disproportionately used to target disadvantaged or marginalized groups (Harsono et al. 2016). In particular, transgender women and gay and bisexual men of color are at increased risk of being prosecuted under these laws (Goldberg et al. 2019).

³⁴ The studies mentioned in this section are focused on the US, where gay or bisexual men and transgender individuals were more likely to be affected by HIV/AIDS. HIV/AIDS has disproportionately affected African Americans as well (R. C. Johnson and Raphael 2009). Broader effects of the HIV/AIDS epidemic on the general US population are discussed by, among others, Ahituv, Hotz, and Philipson (1996); Cardazzi, Martin, and Rodriguez (2021); and Spencer (2021). Several researchers have instead looked at Africa – a region in which the virus has infected a larger share of people in the general population – and analyzed the economic, health, and political impact of the HIV/AIDS epidemic (Chicoine 2012; Chin 2013; Chin and Wilson 2017; Fortson 2009; 2011; Karlsson and Pichler 2015; Oster 2012), as well as of the latest generation of antiretroviral treatments (Baranov, Bennett, and Kohler 2015; Baranov and Kohler 2018; Lucas and Wilson 2013).

A.4 Current Attitudes Towards LGBTQ+ Individuals

Historically, attitudes towards sexual and gender minorities have been important constraints on the lives of LGBTQ+ people, working through labor markets and other socio-economic contexts. Low levels of acceptance or tolerance are associated with a range of negative social outcomes (Flores 2021), such as bullying, violence or harassment, physical and mental health problems (Francis and Mialon 2010), low employment levels, productivity, and earnings (Hansen, Martell, and Roncolato 2022; Burn 2019; Hammarstedt, Ahmed, and Andersson 2015), low business profits, and low political representation. At a macroeconomic level, the link between tolerance and economic growth is actively debated (Berggren and Elinder 2012a; Bomhoff and Lee 2012; Berggren and Elinder 2012b; Badgett, Waaldijk, and Rodgers 2019; Florida, Mellander, and Stolarick 2008).

A.4.1 Recent Levels and Trends

Researchers in other social sciences have analyzed changes in attitudes over time. One analysis of trends in attitudes at a global level has been conducted by Flores (2021). Flores harmonized several global and regional surveys in order to create a new index of attitudes towards LGBTQ+ people and rights in 175 countries and territories between 1981 and 2020. The author showed that around one third of countries and territories experienced no change in attitudes in the past decades, one third saw improvements in attitudes, and the remaining one third had a decrease in acceptance. From a regional perspective, there have been clear upward trends in North America, Western Europe, and Oceania, with recent declines in Eastern Europe and Sub-Saharan Africa. Similar trends have been described in Smith, Son, and Kim (2014).

The existence of large heterogeneity across countries is also clear from the World Values Survey. Looking at the 2017-2020 wave, less than 2 percent of respondents in Iceland mentioned that they would not like having homosexuals as neighbors, less than 4 percent mentioned it in the Netherlands, and around 5 percent of respondents mentioned it in the UK. On the other hand, in countries such as Jordan, Myanmar, Zimbabwe, and Nigeria, around 90 percent of respondents mentioned that they would not like homosexuals as neighbors. In the US, 13 percent of respondents gave a similar answer (down from 39 percent in the 1989-1993 wave).³⁵ Similar results were obtained in the Gallup World Poll, in which individuals were asked whether their city or area was a good place for gay and lesbian people to live. The share of residents who felt that their area was accepting of gay and lesbian individuals was higher than 75 percent only in Canada, Uruguay, and most countries in Western Europe. The lowest shares were estimated in Sub-Saharan Africa, Azerbaijan, Pakistan, and Indonesia (McCarthy 2015).

In line with these findings, most individuals supported LGBTQ+ individuals and the expansion of LGBTQ-related rights according to a survey conducted by Ipsos in 27 middle-income and high-income countries in 2021, although there were large variations across countries and demographic groups (Boyon 2021). For instance, 42 percent of respondents across countries said that they had

³⁵ Based on authors' own calculations using the WVS Online Analysis tool (Accessed 29/Nov/2021) <https://www.worldvaluessurvey.org/WVSONline.jsp>

a friend, relative, or colleague who was gay, lesbian, or homosexual, 24 percent one who was bisexual, 10 percent one who was transgender, and 9 percent one who was nonbinary, nonconforming, or gender fluid. In countries such as Spain, the UK, and the Netherlands, almost 60 percent of respondents had a gay or lesbian friend, relative, or colleague, but this share was much lower in countries such as Japan (7 percent) or South Korea (7 percent). Similarly, around 51 percent of respondents across countries supported individuals being open about their sexual orientation and gender identity with everyone, although fewer people (37 percent) supported public displays of affection.

Focusing on the US, the last few decades have seen a dramatic change in public opinion towards LGBTQ+ individuals (Flores 2021), as also discussed in the introduction. In line with these trends, a 2021 YouGov poll found that 66 percent of Americans would be supportive if their child, sibling, or other close family member came out as gay, lesbian, or bisexual, while 57 percent would be supportive of a family member who came out as transgender or nonbinary (Ballard 2021). However, Coffman, Coffman, and Ericson (2017) cautioned that a large share of individuals may not answer truthfully in surveys, and that anti-LGB attitudes may be substantially more widespread than usually reported.³⁶ Moreover, attitudes towards transgender issues are often mixed, context-dependent, and may not experience the generational change that has been documented for attitudes towards sexual minorities and driven by the younger cohorts (McCarthy 2021). In line with Coffman, Coffman, and Ericson (2017), Aksoy, Carpenter, and Sansone (2022) found evidence of social desirability bias and underreporting of transphobic attitudes, although they showed that – after accounting for such misreporting – most Americans do support employment non-discrimination protection laws for transgender individuals and would be comfortable with a transgender manager at work.

Finally, although the Implicit Association Test has been used by economists when analyzing implicit attitudes and discrimination towards women or minorities such African-Americans and Muslims (Bertrand and Duflo 2017), its application to measure implicit attitudes towards LGBTQ+ individuals has been limited and predominantly concentrated in fields outside economics (see, among others, Steffens, 2005; Breen and Karpinski, 2013; Sabin, Riskind, and Nosek, 2015; Wang-Jones et al., 2017).

A.4.2 Determinants of Attitudes

Researchers have investigated how the patterns highlighted in the previous section are related to demographic characteristics, economic factors, and cultural influences (Goldberg et al. 2019). Demographic correlates such as age, sex, education, and urbanicity are discussed, among the others, in Stephan and McMullin (1982), Kite (1984), Chang (2021), Yang (2022), and Ekstam (2023). Fernández and Parsa (2022) further showed that highly-educated individuals were the ones initially driving the political divergence in the US between Democratic and Republican views and proposed policies regarding gay and lesbian people in the 1980s and 1990s. Personal experiences

³⁶ A similar study has also been conducted in Mexico, although with mixed results (Gutiérrez and Rubli 2023).

can also affect individual views: Becker and Jones (2020) noted that individuals who suffered from gender discrimination were more likely to support transgender people.

Andersen and Fetner (2008) underscored instead the relationship between attitudes and economic factors. The authors argued that tolerance towards homosexuality declines as income inequality rises, and that higher per-capita GDP is associated with higher tolerance levels only among the middle classes, but not among the working class. Inglehart (2008) has also argued that attitudes about homosexuality are positively correlated with economic development. As economies grow beyond the subsistence-level, more traditional and authoritarian cultural traditions give way to “post-materialist values” that recognize individual rights and self-expression, including rights for women and LGBTQ+ people. In addition, Berggren and Nilsson (2013; 2016) linked economic freedom – such as the quality of the legal system, the stability of monetary policy, and the progressiveness of the tax system – with tolerance towards homosexuality.

Focusing on historical factors and institutions, the role of religion has been extensively discussed (Adamczyk and Pitt 2009; Jäckle and Wenzelburger 2015; Roberts 2019). For instance, Ananyev and Poyker (2021) showed that colonial Christian missions led to a long-term increase in homophobic attitudes in Africa. Similarly, Bentzen and Sperling (2020) underlined the link between recent faith-based initiatives in the US, increasing religiosity and negative views on homosexuality. Kenny and Patel (2017) emphasized instead the role played by legal institutions (i.e., sodomy laws and being a former British colony), while Gunadi (2019) highlighted the relationship between the historical incidence of slavery in the US and current hate crime rates. Relatedly, Corneo and Jeanne (2009) noted that tolerance of homosexuality increased in countries from Central and Eastern Europe after those countries became members of the European Union and implemented European directives (including laws prohibiting discrimination based on sexual orientation).

Other examples of historical factors that have been identified in the literature include Baranov, De Haas, and Grosjean (2020) on immigration patterns: the authors found in Australia that higher historical rates of convicts were associated with more liberal views towards sexual minorities. Ananyev and Poyker (2022) found a different pattern in the 20th century, estimating that Gulag prisoners released in the Soviet Union after the death of Stalin were responsible for a long-lasting rise in homophobic sentiments in the general population: prison experiences led to negative attitudes towards homosexuality among those male inmates and their families. They also noted similar patterns more recently in Australia among formerly incarcerated people.

Another historical-institutional factor is sex ratios. Apostolou (2020a) argued that, in theory, societies with unbalanced sex ratios of available men and women (e.g., because of polygyny) or with segregated sexes (e.g., to protect a daughter until marriage) would require high levels of tolerance for same-sex sexual behaviors to reduce the risk of social disorder. Indeed, gold rushes in the US led to temporary increases in the male-to-female ratio and were located in counties lacking a notable place of religious worship. These channels, in turn, contributed to the persistence

of pro-LGBT attitudes (Brodeur and Haddad 2021). In contrast with these findings, but in line with the literature linking skewed sex ratios to more conservative gender attitudes, Grosjean and Khattar (2019), as well as Baranov, De Haas, and Grosjean (2023), showed how areas in Australia with historically high male-female ratios had more negative attitudes towards same-sex relationships, probably due to presence of traditional masculinity norms stirred by past male-to-male competition. Similarly, Chang (2021) found that countries with high male-female sex ratios were less likely to decriminalize same-sex sexual activities, likely due to the fact that men are on average less tolerant than women with regards to homosexuality. These opposite sets of results suggest that sex ratios may interact with local institutions (conservative Victorian Australia versus non-religious US gold rush counties) to produce different current attitudes toward sexual minorities, although selective migration patterns may also have played a role.

Contact theory, the idea that interpersonal contact (e.g., friends or siblings) between majority and minority group members may reduce prejudice, has been tested both for interpersonal contact with gay, lesbian, or bisexual individuals (Herek and Capitanio 1996; Lewis 2011), and with transgender individuals (Tadlock et al. 2017). Similar results have been found when looking at the role played by LGBT members of parliaments around the world (Reynolds 2013). As expected from the literature linking mass media with gender norms and attitudes (Jensen and Oster 2009; Banerjee, Ferrara, and Orozco 2019), media coverage can also play a role in shaping attitudes towards sexual minorities (Manning and Masella 2018) and transgender individuals (Miller et al. 2020), although if not properly design media exposure can lead to backlashes (Gulesci, Lombardi, and Ramos 2023). In addition, Tavits and Pérez (2019) showed that the use of gender-neutral pronouns can lead to more positive attitudes towards LGBT individuals.

Those practices might or might not be deliberately planned to change attitudes, but other efforts have been more clearly designed to affect the attitudes of others. One example of an effective direct intervention is provided by a door-to-door canvassing program described in Broockman and Kalla (2016) aimed at affecting anti-transgender prejudice. Emphasizing the economic costs to society of discrimination against sexual minorities or that homosexuality is no longer considered a disease by the World Health Organization can also be effective in some contexts (C. G. Aksoy et al. 2023).

Appendix B. Housing and Residential Location

B.1 LGBTQ+ People Face Housing Market Discrimination

The fertility choices reported in Section 3 and the disparities and barriers faced by LGBTQ+ individuals in the labor market summarized in Section 4 are both related to the challenges faced by these individuals in the housing market and influence where sexual and gender minorities decide to live: migration rates in this sub-population are high; sexual minorities are less likely to be homeowners; they are more likely to be denied a mortgage or – if approved – to pay higher interest rates; and LGBTQ+ individuals often face discrimination by landlords, hotel managers, and Airbnb hosts.

A few studies have documented low home-ownership rates among same-sex couples. Both Leppel (2007a; 2007b) and Jepsen and Jepsen (2009) documented using the 2000 US Census that women and men in same-sex couples were less likely to own a home than comparable married individuals in different-sex couples, but more likely than unmarried cohabiting individuals in different-sex couples. Similar differentials by couple type and sexual orientation can still be observed using more recent ACS data, and new surveys directly asking respondents about their sexual orientation have allowed researchers to document particularly low home-ownership rates among bisexual individuals (Badgett, Carpenter, and Sansone 2021). Leppel (2007b) emphasized that these differences in home-ownership rates could only partially be explained by differences in observable characteristics such as age, household income, preference for living in city centers, and presence of children. Furthermore, Jepsen and Jepsen (2009) noted that, among home-owners, individuals in same-sex couples were slightly less likely to have a mortgage than married different-sex couples: the authors saw this result as suggesting the existence of barriers preventing sexual minorities to access the credit market.

Indeed, these findings are likely to be connected to the increasing evidence of sexual minorities being treated differently when applying for a mortgage. Sun and Gao (2019) showed that individuals in same-sex households were more likely to have their mortgage applications rejected than comparable different-sex households in the US. If accepted, same-sex borrowers were charged on average higher interest rates, even if they had no higher risk of default.³⁷ Even more remarkably, lending conditions for both same-sex and different-sex applicants in the same neighborhood worsened when its share of residents in same-sex households increased. Similarly, even for mortgages insured by the US Federal Housing Administration and thus covered by anti-discrimination policies including sexual orientation among their protected categories, same-sex male co-applicants were less likely to have their loan application accepted than comparable different-sex co-applicants (Dillbary and Edwards 2019). The authors also reported clear evidence of intersectionality: while all same-sex applicants were penalized, pairs with one or two male Black co-applicants were significantly and substantially less likely to be accepted than other couples. There were fewer signs of discrimination against same-sex female co-applicants, although a race penalty was evident among same-sex couples with one or two female Black co-applicants as well. Despite the high likelihood that transgender individuals face legal challenges in the credit market, especially in states and countries with strict requirements for legal changes to name and gender marker on identity documents, no study has specifically looked at gender minorities in this context.

Following the same strategy of the correspondence and audit experiments with real job openings discussed in Section 4, economists have conducted similar experiments in the rental market, usually signaling minority sexual orientation with a reference to a same-sex partner or spouse. Overall, studies have found evidence of discrimination against men in same-sex couples in the US

³⁷ Negrusa and Oreffice (2011) also noted using the 2000 US Census that individuals in same-sex couples, especially women, had higher mortgage payment to house value ratios than married different-sex couples. However, the authors interpreted this finding as an indicator for different saving rates among women in same-sex couples rather than a proxy for differential treatment by financial institutions.

(Page 1998; Friedman et al. 2013; Schwegman 2019; Levy et al. 2017), Canada (Lauster and Easterbrook 2011; Page 1998), Sweden (Ahmed and Hammarstedt 2009), Serbia (Koehler, Harley, and Menzies 2018), and Portugal (Gouveia, Nilsson, and Berggren 2020). In addition, Schwegman (2019) highlighted that Black men in same-sex couples were especially unlikely to receive a response to inquiries about rental units, while Levy et al. (2017) found suggestive evidence of less discrimination towards Hispanic individuals in same-sex couples. Findings in Lauster and Easterbrook (2011) support the contact theory hypothesis, i.e., that men in same-sex couples were less likely to be discriminated in city centers where landlords were more familiar with new household structures. In contrast, Hellyer (2021) did not see substantial differences in response rates between US urban and rural rental markets.

There are a few exceptions regarding such a negative treatment of men in same-sex couples: Murchie and Pang (2018) found higher likelihood of receiving a response to an inquiry email in the US for this minority group (especially White men in same-sex couples), although their comparison group was single applicants, so landlords may have favored same-sex couples given the presence of another potential earner to assist in paying rent. The probability of receiving a positive email response was not different between same-sex and different-sex couples in Hellyer (2021), but the author emphasized that the study was conducted in early 2020 at the beginning of the COVID-19 pandemic, at a time when housing demand in the US was low. Similarly, Mazziotta, Zerr, and Rohmann (2015) found no evidence of discrimination against gay male couples in large German cities, similar to the findings in Abbate et al. (2023) for Latin America. Therefore, more research is needed to investigate whether such estimates are specific to certain contexts and time periods, or they are part of a larger trend reflecting improvements in the treatment of sexual minority men.

With the exception of the earlier studies in the US (Page 1998; Friedman et al. 2013), plus some mixed results from Serbia (Koehler, Harley, and Menzies 2018), there is no evidence from most of the studies mentioned above of women in same-sex couples being treated on average differently than individuals in different-sex couples. As hypothesized in Ahmed, Andersson, and Hammarstedt (2008), landlords' preference for female tenants may compensate any distaste for renting to sexual minorities.

The meta-analysis by Flage (2021) combines most of these studies and reports a statistically significant 10 percent lower likelihood of receiving a positive response from landlords for men in same-sex couples than individuals in different-sex couples, and no statistically significant difference for women in same-sex couples. While one could argue that these differences are due to statistical discrimination (e.g., landlords believing that gay men earn less, are promiscuous, and are more at risk of drug abuse, suicide, and HIV), Flage noted that discrimination against men in same-sex couples did not decrease when providing information about applicants' financial stability. Moreover, the level of discrimination was higher in countries with less tolerant attitudes

towards homosexuality.³⁸ These finding suggests that taste-based discrimination may be the primary factor driving differences in call back rates by landlords. It is also worth noting that prejudiced landlords in high-demand markets do not see their profits substantially hit due to their taste-based discrimination since they can choose from a large number of qualified applicants (Schwegman 2019).

In this context, it is important to stress that, even if some US states have passed laws banning housing discrimination and the US Department of Housing and Urban Development currently interprets discrimination based on sexual orientation and gender identity as sex discrimination, there is no federal law protecting sexual and gender minorities against housing discrimination (unlike most EU countries). One may wonder if government interventions may reduce these disparities, but Friedman et al. (2013) showed in their correspondence experiment that the rate at which different-sex couples were favored over men in same-sex couples was not lower in states with laws prohibiting housing discrimination on the basis of sexual orientation. Similar results were reported in Hellyer (2021), while Schwegman (2019) found mixed evidence. Relatedly, Leppel (2007a) found no higher home-ownership rates among same-sex couples in states that had equal housing laws protecting sexual minorities. However, these laws are correlated with housing prices. Due to intrinsic data limitations, none of these studies could properly account for the endogeneity of such laws and recover the causal impact of housing anti-discrimination policies. This concern is at least partially addressed by Dillbary and Edwards (2019) using a difference-in-difference approach to estimate the impact of local laws expressly prohibiting discrimination based on sexual orientation in lending. The authors did find a reduction in disparities between male same-sex co-applicants and different-sex co-applicants following the passage of such laws, thus providing a more optimistic view of the effectiveness of anti-discrimination laws.

Studies on gender minorities are, as usual, quite rare. Langowski et al. (2018) implemented an audit study in Boston comparing the rental experiences of transgender and gender-nonconforming testers with the experiences of cisgender and gender-conforming testers. Transgender and gender-nonconforming testers in site visits were more likely to be quoted a higher rental price, were shown fewer areas in a building, and were less likely to be offered a financial incentive to rent the apartment. Transgender testers in Levy et al. (2017) were quoted the same rent as cisgender testers, but they were told about fewer available units. Fritzson and Jansson (2022) implemented a correspondence experiment in Sweden indicating a name change in their messages to landlords: all fictitious applicants reported a name change in their message, with cisgender applicants reporting a name change of the same gender, and transgender applicants reporting a switch to a name typically used for individuals of a different gender. The authors found that transgender individuals were more likely to receive invitations to showings than cisgender men but were less likely to receive invitations to showings than cisgender women. Another correspondence experiment in

³⁸ Relatedly, it is worth noting that Gouveia, Nilsson, and Berggren (2020) found *lower* levels of discrimination in *more* religious Portuguese parishes. The authors suggested that in this context the Catholic norms of compassion and care may have reduced discrimination against minorities, although this is not consistent with the relationship between Christianity and homophobic attitudes discussed in Appendix A.

Latin America found discrimination against couples with a transgender individuals (Abbate et al. 2023). The authors then noticed lower discrimination for couples with high socio-economic status: thus suggesting that in this case, unlike the studies on same-sex couples discussed in the previous paragraphs, the differential treatment may be partly driven by statistical discrimination.

Correspondence experiments have also been implemented to analyze the treatment of sexual minorities in short-term accommodations. In a pioneering study, Jones (1996) posted letters requesting reservations for a room with one bed: both men and women in same-sex couples were less likely than different-sex couples to be granted a hotel reservation, especially in establishments with a small number of rooms. Similarly, Ahuja and Lyons (2019) created fictitious guest accounts on Airbnb to show that men in same-sex couples were less likely to receive a positive response from hosts than guests in different-sex couples. On the other hand, in line with the aforementioned treatment of sexual minority women in the housing rental market, the authors found no evidence of lower acceptance rates for female guests in same-sex couples. Using instead observational data from Airbnb listings in San Francisco, Kakar et al. (2018) focused on hosts rather than guests and found that whether the host was gay did not affect the listing rental price or occupancy rate. However, the host's sexual orientation could be inferred only if disclosed on their profile, and the number of listings from gay hosts was small.

B.2 LGBTQ+ Residential Location Choices

A different branch of this literature has investigated the location choices of LGBTQ+ individuals, and the impact of such choices on their neighborhood. As expected given the preference to live in tolerant and welcoming places, Black, Sanders, and Taylor (2007) noted that individuals in same-sex couples are more likely to migrate from their state of birth and tend to locate in urban areas. One possible explanation for these choices is that individuals in same-sex couples – especially men – are less likely to have children in their households, so they can afford to spend a higher share of their disposable income in non-child goods such as high-amenity urban locations (Black et al. 2002). These patterns have been confirmed using more recent data by Badgett, Carpenter, and Sansone (2021): individuals in same-sex couples continue to be overrepresented in places such as Washington DC and San Francisco CA. They are still less likely than individuals in different-sex couples to live in their state of birth, although the gap seems to have been shrinking in the past few years, especially for young women, potentially reflecting more widespread tolerant attitudes. Similarly, survey data including information on respondents' sexual orientation have confirmed that gay men – and to a lesser extent, lesbian women – are particularly mobile, while rates of geographical mobility for bisexual individuals are closer to their heterosexual counterparts (Levine 2022). Related to their higher geographical mobility, women in same-sex couples are willing to accept jobs farther from home (Oreffice and Sansone 2023).³⁹

³⁹ Relatedly, Oreffice and Sansone (2022) analyzed differences in choices for transportation to work between individuals in same-sex and different-sex couples.

A complementary question is what happens to neighborhoods experiencing an inflow of same-sex couples. There is evidence that an area with a higher share of same-sex couples is more likely to gentrify, i.e., to improve its relative standing with respect to average income or house prices (Christafore and Leguizamon 2018). At the same time, there are some important heterogeneities based on the racial composition of the local community: Christafore, Leguizamon, and Leguizamon (2013) documented a decline in house prices in predominantly Black neighborhoods following an increase in same-sex couples living in the area, while the opposite pattern was observed in predominantly White neighborhoods.

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