

LGBTQ+ DATA AVAILABILITY

WHAT WE CAN LEARN FROM FOUR MAJOR SURVEYS

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Executive summary

LGBTQ+ is an inclusive acronym that refers to individuals who identify as lesbian, gay, bisexual, transgender, queer or questioning, or with any other identities outside a heteronormative or gender binary framework. These terms are used to describe a person's sexual orientation or gender identity. According to GLAAD, "sexual orientation¹ describes a person's enduring physical, romantic, and/or emotional attraction to another person (for example: straight, gay, lesbian, bisexual, [queer]). Gender identity is [one's] own, internal, personal sense of being a man or a woman (or as someone outside of that gender binary)."

As our report and other [studies](#) show, there has been a steady growth of LGBTQ+ identification over the past decade. Thus, it is increasingly important to understand the size, distribution, and outcomes of the LGBTQ+ population for economic and social policy. Typically, researchers use data from large, nationally representative surveys such as the American Community Survey and the Current Population Survey to conduct economic analyses. However, there are few federally supported surveys that consistently include questions related to an individual's sexual orientation and gender identity (SOGI). This is an important issue because these surveys are key sources for other crucial information such as an individual's race, income, earnings, time use, education, and occupation that are needed to study economic outcomes. Omitting or asking incomplete SOGI questions leaves a data gap that can result in a lack of understanding within research and policy circles, with potentially adverse effects on the increasingly significant LGBTQ+ community.

The goals and main results of our piece are threefold:

1. We provide an overview of four large, nationally representative, and publicly accessible datasets that include information relevant for economic analysis. We mainly focus on the LGBT population because it is difficult to identify "Q" populations accurately in any of these surveys, as described below. We find that there is considerable difference in measured LGBT prevalence across datasets, but each survey documents a substantial increase in non-straight identity over time. This is largely driven by young adults, who are increasingly likely to identify as LGBT over the past ten years.
2. We highlight the number of LGBT individuals not counted by the American Community Survey because it identifies same-sex households but has no questions related to sexual orientation or gender identity. We do this by comparing age cohorts with those in other datasets that contain more detailed SOGI information. We estimate that the ACS only captures between 12-26% of the total LGBT population, with the largest gaps being among the younger age groups. We estimate that up to 4.5 million young adults go unidentified as LGBT in the ACS.
3. We examine current economic outcomes of the LGBT population using the new Census Bureau Household Pulse Survey. The LGBT population has worse economic outcomes on average than the non-LGBT population, a difference which is only partially explained by age and other demographic characteristics. By comparing similar outcome variables across the Pulse and the ACS, we see that the ACS overstates the economic well-being of LGBT people because the proxy for LGBT includes individuals in cohabiting relationships who tend to be older and advantaged in other ways.

Background

The body of economic research about LGBTQ+ people in the United States has grown over the past decade (Badgett, Carpenter, and Sansone 2021). However, data limitations and the lack of appropriate survey questions make it hard for researchers to more closely analyze outcomes of LGBTQ+ people. There are [several sources](#), including the American Economic Association, that have compiled an informal and ongoing list of “large, representative, population-based datasets” that include information on sexual orientation and/or gender identity and potential outcome variables. These datasets vary by sample size, sample unit, periodicity, and the SOGI information they collect.

In this piece, we focus on the American Community Survey as one of the most important datasets for microeconomic research that includes no information about LGBTQ+ status per se. To highlight the information lost from the American Community Survey’s incomplete SOGI data collection, we identify three other large, national datasets that include questions about sexual orientation and/or gender identity. These include the Behavioral Risk Factor Surveillance System (BRFSS), the National Health Interview Survey (NHIS), and the Census Bureau Pulse Survey (the Pulse). With each of these sources, we explore how LGBT people are identified and how the information is used to characterize the LGBT population.

MEASURING LGBT IDENTITIES

Given that the conceptual definition of LGBTQ+ includes both sexual orientation and gender identity (SOGI), it is useful for surveys to design and ask questions related to both in order to develop an accurate measurement of the population (Baker, Durso, and Ridings 2016). Datasets which only collect information related to one of these components only identify a portion of the LGBT population. Appendix Table 1 indicates whether the four different datasets include information related to sexual orientation and gender identity.

The BRFSS, NHIS, and the Pulse datasets all ask a question related to the individual’s sexual orientation. They record an individual’s sexual identity by asking them to identify as “straight, lesbian or gay, bisexual, other/something else, or don’t know/not sure.” Typically, researchers only categorize those who respond “lesbian or gay” or “bisexual” as LGB for the purpose of analysis. While there are other sexual identities with which people might identify, it has been documented that those who respond “other/something else” in population surveys often do so because they are not sure which category to choose from due to not fully understand the question (Badgett et al. 2009). This makes it difficult to categorize the respondent’s sexual orientation based upon their selection, even if the survey follows up with an open-ended question. In addition, those who write in responses to the “something else” category may not actually be capturing the intended population. For instance, Bates et al. (2019) find that some respondents write protest responses such as “Christian male,” “normal,” or “not your business.” For this reason, we classify those who indicate “other/something else” or “don’t know/not sure” into a separate category, as the [United States Census does](#). We use the acronym LGBT as our primary measurement while acknowledging that it may not perfectly capture the more inclusive definition of LGBTQ+.

Among the four datasets we examine, only the BRFSS and the Pulse record an individual's gender identity, and each does so in a different way. The BRFSS directly asks the individual about their gender identity:

"Do you consider yourself to be transgender?"

1. Yes, transgender, male-to-female
2. Yes, transgender, female-to-male
3. Yes, transgender, gender nonconforming
4. No
5. Don't know/not sure

On the other hand, the Pulse Survey uses a two-step approach by first asking the individual their sex at birth and then their current gender identity:

"What sex were you assigned at birth, or on your original birth certificate?"

1. Male
2. Female

"Do you currently describe yourself as male, female, or transgender?"

1. Male
2. Female
3. Transgender
4. None of these

In the BRFSS method, an individual is coded as being transgender if they indicate "Yes" to the question. In the second method, an individual is coded as being transgender if (1) they currently identify themselves as being transgender, or (2) if their current gender identity does not match with their assigned sex at birth. It is important to note that simply asking the second of the two questions can result in incomplete identification. This is because many transgender people identify themselves solely as men or women, which could potentially undercount the number of transgender people.

The two-step questionnaire in the Pulse is arguably more comprehensive in measuring non-cisgender identity. This is because the "none of these" option

may capture those who may otherwise be missed in the yes/no single-question approach in the BRFSS. As it turns out, those who select "none of these" make up the majority of gender minority individuals in the Pulse and have systematically different employment outcomes than other non-cisgender individuals (Carpenter, Lee, Nettuno 2022). We are also confident that those who select "none of these" actually identify as non-cisgender because the Pulse includes an explicit confirmation question if a respondent indicates a sex at birth that does not match their current gender, so the issue of question misinterpretation is not as strong here. While it is difficult to determine who comprises this group, we believe it is important to include them in our overall LGBT analysis.²

Finally, as previewed, the ACS currently does not include any SOGI information. Instead, the ACS can only classify households that are same-sex households (SSH) and different-sex households (DSH) based on cohabitation. The primary method of identifying SSH is by using the responses to a question of how other people in the household are related to a household "reference person." Response categories include those such as "spouse," "unmarried partner," and "partner/roommate." If an individual indicates a married/unmarried couple relationship to the household reference person and also reports a gender that matches the reference person's reported gender, then the household is classified as an SSH. However, there has been a history of misclassification and measurement error with this method (Macklin et al. 2022). Beginning in the 2013 ACS, the Census minimized the amount of measurement error by explicitly asking respondents whether their partnership is same-sex or opposite-sex.

LGBTQ PREVALENCE

The difference in how these datasets collect SOGI information impacts the estimates of LGBTQ prevalence. To better understand measured prevalence of LGBT identities, we compare the NHIS, BRFSS, and Pulse surveys to highlight differences in each dataset. Table 1 reports the estimates broken down by responses to sexual orientation and gender identity questions, if any, using 2021 data. The Pulse survey has the highest share of adults who report being gay/lesbian or bisexual.

TABLE 1

LGBTQ Prevalence

	BRFSS	NHIS	Pulse	ACS
	2021 (34 states)	2021	2021	2021
Sexual orientation				
Straight	88.90%	93.20%	86.20%	-
Gay/lesbian	1.90%	2.00%	3.10%	-
Bisexual	3.60%	2.30%	4.30%	-
Something else/Other	1.90%	0.60%	1.90%	-
Don't know	1.30%	1.20%	2.10%	-
Gender identity*				
Cisgender men/male	46.90%	48.30%	47.10%	49.00%
Cisgender women/female	50.50%	51.70%	50.40%	51.00%
Reported transgender	-	-	0.60%	-
Transgender, Male-to-female	0.20%	-	0.20%	-
Transgender, Female-to-male	0.30%	-	0.20%	-
Transgender, Gender non-conforming	0.30%	-	-	-
None of these	-	-	1.60%	-
Don't know/Not sure	0.50%	-	-	-
Share same-sex relationships among all couples**				
Same-sex male	1%	1%	-	0.80%
Same-sex female	0.90%	0.90%	-	0.90%
Different-sex	97%	98.10%	-	98.30%
Share same-sex relationships among all individuals***				
Same-sex male	0.40%	0.60%	-	0.40%
Same-sex female	0.40%	0.50%	-	0.50%
Different-sex	40.20%	55.30%	-	53.40%

NOTE: Weighted statistics.

* The BRFSS and Pulse are the only two datasets that ask complete questions related to gender identity. The NHIS and ACS ask about the respondent's sex (male/female) but do not determine cisgender status. We use the Pulse's two step question to fit the categories of transgender identity used in the BRFSS. "Reported Transgender" in the Pulse includes individuals who describe themselves as transgender in answer to the current gender identity question. "Male-to-female" includes individuals who report sex assigned at birth as male and current gender as female in the Pulse, and those who report being "Transgender, Male-to-Female" in the BRFSS. "Female-to-male" includes individuals who report sex assigned at birth as female and current gender as male in the Pulse, and those who report being "Transgender, Female-to-male" in the BRFSS. The Pulse asks the question "Do you currently identify as male, female, or transgender?" with the response categories "Male/Female/Transgender/None of these." Those who select "None of these" are reported as its own category from the other non-cisgender categories.

** We identify same-sex cohabiting relationships by looking at household structure. In the NHIS and ACS, these are identified using a variable that indicates an individual's relationship to a household reference person and each person's reported gender. In the BRFSS, it is identified by using a count of how many male or female adults live in a household as well as an indicator of whether an individual is in a married/coupled relationship. Same-sex male (female) couples in the BRFSS are defined as whether there exactly two adult men (women) and zero adult women (men) living in the household who are in a relationship. Estimates are calculated as the number of same-sex relationships (married or unmarried) over the total number of all same-sex and different-sex relationships.

*** The BRFSS only contains information about the number of adults in the household and its sex composition in the landline survey. Our sample for analyzing same-sex relationships is limited to those who only were a part of the landline survey and not the cellphone survey.

ual as well as those who respond that they do not know how they currently identify. On the other hand, the NHIS measures lower rates of bisexuality and those who report something else/other. The BRFSS, which only collected SOGI data from 34 states in 2021, has prevalence estimates between those of the NHIS and Pulse.

Because the NHIS doesn't include a question on gender identity, we can only compare information on gender identity between the BRFSS and Pulse. The share of individuals who indicate a gender transition (male-to-female or female-to-male) in the BRFSS and Pulse are similar, but the proportion gender non-conforming is notably much higher in the Pulse than in the BRFSS. In addition to identifying gender transitions through their two-part questionnaire, the Pulse also includes a reported transgender option, but it does not include its own option for "don't know/not sure."

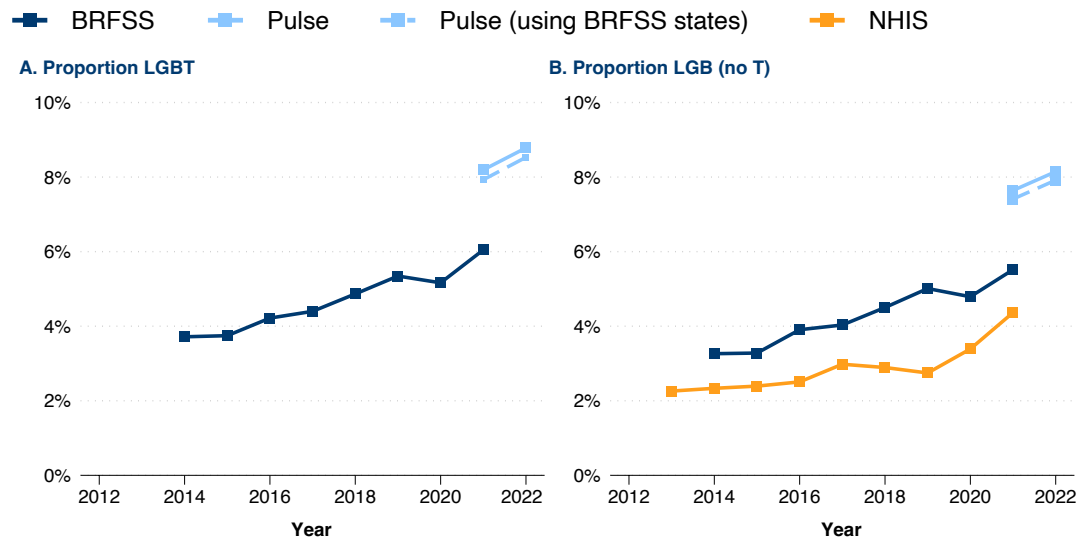
Finally, the BRFSS, NHIS, and the ACS all have comparable ways of identifying same-sex relationships. This is implicitly done by looking at household structure. Researchers have preferred this method because it does not require respondents to explicitly self-identify as a sexual minority to the interviewer and proxies well for those who are in a relationship and are not straight (Carpenter et al. 2018). Despite being a household survey, the Pulse only interviews an adult in the household rather than asking about each member. Therefore, it includes information on a responding individual's marital and LGBT status but not any additional household information that could infer a same-sex relationship.

The share of all cohabiting relationships (both married and unmarried) that are same-sex relationships are similar across the NHIS, BRFSS, and ACS. This gives some confidence that the ACS is able to identify same-sex residential relationships consistently well with other surveys, but it still does not identify LGBT individuals not in residential partnerships. A further limitation of using cohabitation as a measurement of same-sex relationships is that it does not capture individuals who live in "living apart together (LAT)" relationships. These are individuals who traditionally would be classified as single but identify as being in an unmarried romantic relationship who do not live with each other. Studies find that gay men are somewhat more likely than heterosexual men to be in LAT relationships (Strohm et al. 2009).

Figure 1 looks at LGBT prevalence over time. First, we only compare the BRFSS and Pulse estimates since both surveys ask SOGI questions. The BRFSS contains data that span from 2014 to 2021 for adults 18 years and older. Each year, states decide whether or not to administer the SOGI questions to their residents. For instance, only 19 states in 2014 administered the SOGI module, compared to 34 states in 2021. Only five states, however, consistently administer the SOGI module every year: Hawaii, Minnesota, Ohio, Virginia, and Wisconsin. It is therefore crucial for health surveys like the BRFSS to make SOGI questions a core component in their questionnaires since sexual orientation and gender identity are often important predictors of health outcomes.

The Pulse survey was deployed by the United States Census in mid-2020 to understand how households were dealing with the COVID-19 pandemic. It has been administered in biweekly samples, and it began asking SOGI questions beginning in Week 34 (July 21 – August 2, 2021). Our sample pools all the weeks following Week 34 until Week 51 (November 2 – November 14, 2022).

FIGURE 1
Trends in overall LGBT/ T identification



Note: Weighted statistics. The SOGI module is only administered to a subset of states each year in the BRFSS. In 2021, 34 states were sampled in the BRFSS. We additionally limit the analysis in the Pulse to the same sample of states, represented by the dashed light blue line. The Pulse definition of LGBT includes those who identify as gay/lesbian, bisexual, or transgender. It does not include those who identify as "something else/other."

Source: Authors' calculations. Behavioral Risk Factor Surveillance System 2014–2021, Census Household Pulse Survey 2021–2022. National Health Interview Survey 2013–2021

BROOKINGS

Figure 1a depicts the measurements using the Pulse (light blue lines) and BRFSS (dark blue line). The overall BRFSS measure estimates that roughly 6% of adults in 2021 identify as LGBT, increasing from around 3.7% of adults in 2014.³ We find that around 8% of adults ages 18 and older identify as LGBT using the Pulse in 2021.⁴ Even when limiting the Pulse estimate to the same set of available BRFSS states in 2021, the share of individuals who identify as LGBT remains substantially higher in the Pulse. This suggests that there might still be differences in LGBT measurement between the BRFSS and Pulse, despite both asking SOGI questions, as noted below.

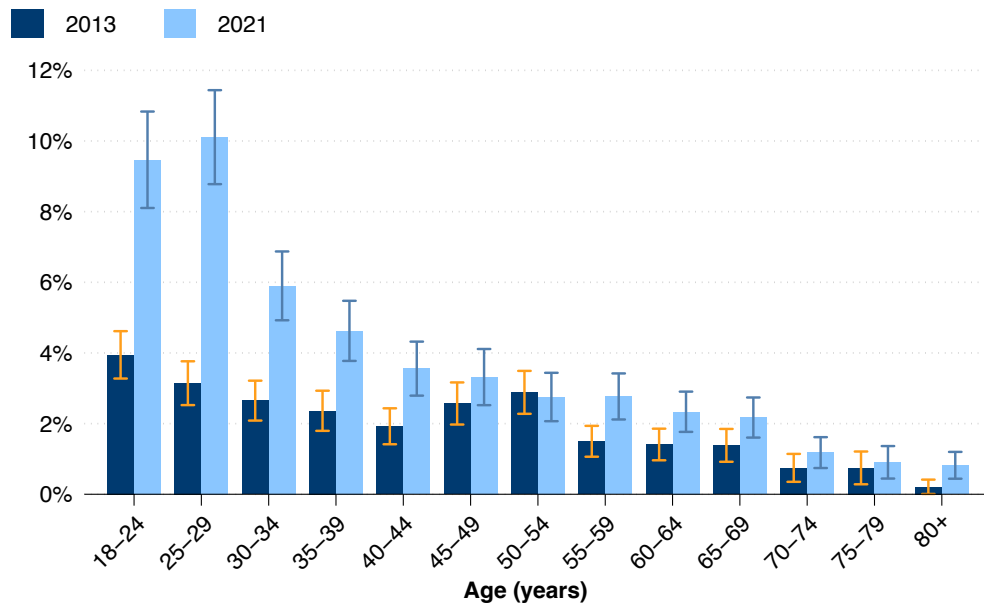
Figure 1b compares the BRFSS and Pulse estimates with the NHIS estimates. Because the NHIS does not include a question on gender identity, it measures lower levels of LGBT prevalence than the BRFSS or Pulse. To determine whether this lower measurement is due to the omission of the gender identity question or because of other differences, we also measure LGB prevalence (excluding T) within the Pulse and the BRFSS to make them more comparable with the NHIS.

The trends in the NHIS are consistent with those in the BRFSS, but there are still apparent level differences between the BRFSS and NHIS. One possible reason is that differences in the data collection method between the Pulse and the NHIS/BRFSS. The NHIS collects information in face-to-face surveys and the BRFSS is a cellular phone/landline survey, while the Pulse is a fully online survey. The stigma behind verbalizing a sexual minority identity may lead to lower overall levels in the BRFSS and NHIS.⁵

The general increase in LGBT prevalence in recent years is largely driven by the fact that younger adults are now more likely to identify as LGBT. Figure 2 shows that in the NHIS, around 4% of 18–24-year-olds in 2013 identified as LGB, which increased to 9.5% in 2021. Among middle aged adults (ages 45–49), LGBT identification only increased slightly from 3% in 2012 to 3.5% in 2021. Because of the short time horizon in these surveys, it is unclear how the current young adult cohort will identify as they age. Despite this, an important takeaway is that younger age groups clearly represent a substantial portion of the LGB community and are

FIGURE 2

Younger adults more likely to be LGBT, and more so over time



Note: Weighted statistics. LGBT defined as gay/lesbian or bisexual. Individuals who select “something else” are not included in analysis.
 Source: Authors’ calculations. National Health Interview Survey, 2013, 2021

BROOKINGS

important to incorporate in economic analyses. In fact, we estimate that around 23.6% of the LGBT population are young adults. As we show below, the bulk of LGBT individuals who we cannot identify in the ACS are young adults, which will continue to be a pressing issue if young adults continue to disproportionately identify as LGBT.

While the levels from these datasets might differ, Gates (2014) emphasizes that “the actual motivation for measuring LGBT identity on these surveys is less about a prevalence estimate and more about the ability to compare and contrast characteristics of LGBT individuals with their non-LGBT counterparts.” Nonetheless, we believe it is still important to highlight the differences in how surveys measure LGBT identity to develop more effective ways in identifying the LGBT population.

AMERICAN COMMUNITY SURVEY

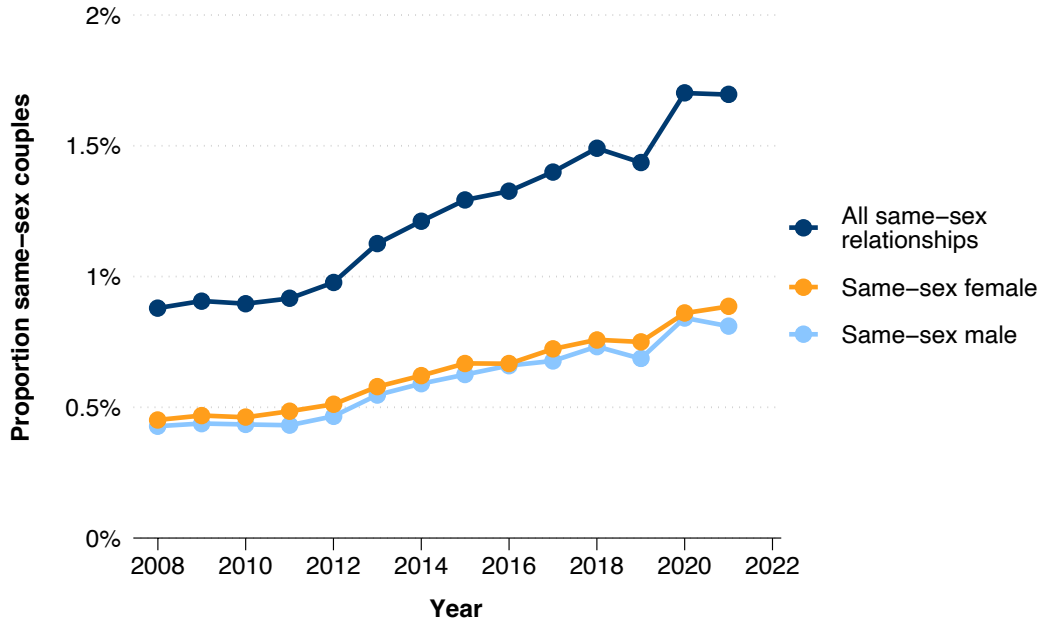
The American Community Survey is an annual one percent sample of those residing in the United States that reports information related to income, earnings,

and occupation. Despite its extensive usage, the ACS does not collect the information needed to fully identify LGBT people. Since the ACS identifies same-sex households, we can look at the share of cohabiting partnerships (either married or unmarried) that are same-sex. The number of people in same-sex residential relationships have grown over time. As Figure 3 shows using data from ACS 2008-2019, the proportion of all couples (same-sex and different-sex) who are same-sex has increased from around 0.8% in 2008 to 1.5% in 2019.

The trends and estimates for same-sex male and same-sex female couples are similar, but there are more same-sex female relationships than male relationships in younger age groups. As Figure 4 indicates, among individuals 18-24 years old in a residential relationship, same-sex female relationships (married and unmarried) account for over 3% of them while same-sex male relationships account for around 1.5%. With age, the proportion of those who are unmarried declines and the share of same-sex male and female relationships are roughly equal.

FIGURE 3

Share same-sex couples among all cohabiting couples



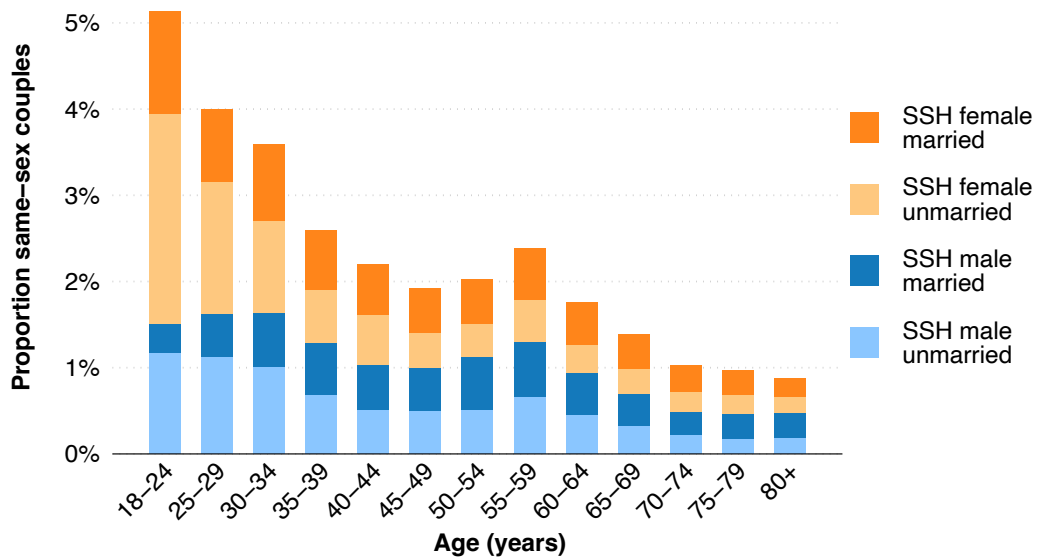
Note: Shares are calculated as the number of individuals in same-sex married/unmarried cohabiting households divided by the total number of individuals, ages 18+, in any coupled relationship (same-sex or different-sex).

Source: Authors' calculations. American Community Survey 2008–2021

BROOKINGS

FIGURE 4

Share same-sex couples among all cohabiting couples, by age and gender



Note: Shares are calculated as the number of individuals in same-sex married/unmarried cohabiting households divided by the total number of individuals ages 18+ in any coupled relationship (same-sex or different-sex).

Source: Authors' calculations. American Community Survey 2021

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How much are we missing: Synthetic comparisons with the ACS

Researchers have traditionally used household structure to identify same-sex relationships rather than asking individuals explicitly whether they are in a same-sex relationship. This is because this method still allowed for same-sex partnerships to be identified even before marriage equality became nationally recognized in 2015. Although the ACS added an explicit question about same-sex married couples in 2013, it still did not specify an option for unmarried, cohabiting couples. Moreover, using household structure to identify same-sex relationships may help reduce stigma associated with reporting one’s sexual minority status to an interview. For these reasons, our analysis adheres to the standard approach of using household structure to identify residential couples.

To test whether this method of identifying same-sex relationships accurately reflects sexual orientation, we examine how individuals in particular household structures identify using the 2021 NHIS, which has a comparable method of identifying same-sex households with the ACS.⁶ Table 2 indicates that this method captures a substantial portion of individuals who are

TABLE 2

Share of men/women in household structures who are LGB

Sample		Men				Women			
		Gay	Bisexual	Other/DK	Straight	Lesbian	Bisexual	Other/DK	Straight
Overall (all individuals)		2.40%	1.20%	1.60%	94.10%	1.70%	3.40%	1.90%	92.40%
Married	Different-sex household	0.20%	0.30%	0.90%	98.20%	0.20%	1.20%	0.80%	97.20%
	Same-sex household	70.50%	5.70%	1.60%	22.20%	65.40%	7.70%	7.10%	19.80%
Unmarried	Different-sex household	0.20%	1.50%	1.00%	97.20%	0.10%	9.50%	2.30%	88.00%
	Same-sex household	76.30%	13.20%	3.30%	7.20%	76.40%	12.00%	4.60%	7.00%

NOTE: Weighted statistics. Each row refers to a different sample of individuals, and the estimates represent the proportion of men/women who are gay, bisexual, or other in the respective samples. “Other/DK” refers to non-heterosexual individuals who respond “Other/something else” to the sexual orientation question or responds “I don’t know the answer.” NHIS 2021 identifies same-sex relationships by asking the sex of the spouse/partner as well as the sex of the respondent. If the sexes match, then the partnership is classified as same-sex. Note that the identification process changed slightly in 2018. Prior to 2018, NHIS contained a variable that asked for each person’s relationship to a household reference person and used this to identify spouses/unmarried partners.

SOURCE: NHIS 2021

non-heterosexual in same-sex relationships. Among households that are married, less than 1% of men in different-sex household structure are non-heterosexual. Among married households, more than 75% of men and women in same-sex marriages identify as non-heterosexual. The shares of non-heterosexual identities are even higher among same-sex unmarried households.

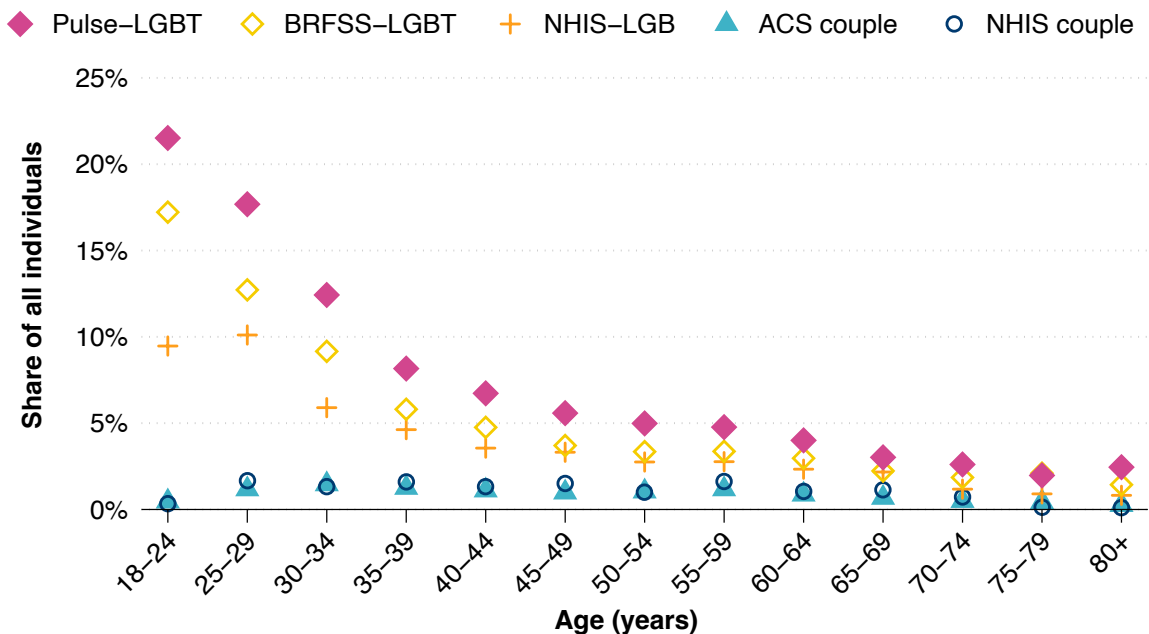
The comparability in methods between the ACS and NHIS and the strong proxy measures for non-heterosexual identity give us confidence in the same-sex measurements in the ACS. As Table 1 indicates as well, the NHIS and ACS roughly capture similar overall shares of same-sex relationships.

Despite the ACS being able to identify same-sex residential partnerships well, Figure 5 highlights the gaps in the shares of all individuals who are LGB/T and unidentified in the ACS. We plot various measurements across the four datasets by age brackets: The triangle and circle represent the proportion of all individuals who are in a same-sex relationship in the ACS and NHIS respectively. The plus symbol indicates the proportion of individuals who we can identify as LGB in the NHIS. The hollow diamond represents the share of individuals who identify as LGBT in the BRFSS, and the solid diamond represents the share of individuals who are LGBT in the Pulse.

As the figure shows, the share of young adults (ages 18-24) who are LGB/T ranges from around 10% in the NHIS to 22% in the Pulse. For those aged 50-54, the share of adults who are LGB/T ranges from 3% in the NHIS to 5% in the Pulse. We estimate that the ACS only accounts

FIGURE 5

Who goes unidentified: Synthetic comparisons across surveys



Note: Weighted statistics. Shares are calculated as the number of individuals in same-sex couples (married and unmarried) over all sample individuals ages 18 and older. Bands represent 95% confidence intervals.

Source: Authors' calculations. National Health Interview Survey 2021, American Community Survey 2021, Behavioral Risk Factor Surveillance System 2021, Household Census Pulse Survey 2021

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for between 12-26% of the total LGBT population and only 3-5% of the total number of LGBT youth nationally in 2021.

In Table 3, we compare the implied number of adults by age group who are identified as LGBT in the BRFSS, NHIS, Pulse, and ACS. In the ACS, we estimate that there are around 2.3 million individuals in same-sex couples, or about 1.2 million same-sex households.⁷ We estimate that up to 4.5 million LGBT youth go unidentified in the ACS. Even among middle-aged adults (ages 45-49), adults in same-sex couples only make up between 18 and 53% of all LGBT individuals. In sum, we estimate that the ACS fails to capture up to 17.3 million LGBT individuals due to the incomplete SOGI questions. Much of the discrepancy comes from the fact that the current ACS survey only identifies individuals as LGBT if they are in a cohabiting relationship with those of the same gender.

TABLE 3

Population estimates of LGBT individuals and those in same-sex relationships, by age, 2021

Age range in years	Pulse	BRFSS	NHIS	ACS
	LGBT	LGBT (only 34 states)	LGB	individuals in same-sex couples
18-24	4,657,737	2,898,024	2,664,377	136,760
25-29	3,557,721	1,298,935	2,170,251	252,139
30-34	2,833,157	1,256,310	1,288,559	328,603
35-39	1,798,068	645,273	919,067	275,467
40-44	1,472,549	606,703	730,291	230,804
45-49	1,070,901	356,744	613,725	190,355
50-54	1,029,093	407,034	538,632	212,757
55-59	988,439	402,164	543,591	242,171
60-64	835,010	397,109	487,844	183,261
65-69	661,028	238,638	370,976	122,512
70-74	401,242	176,951	180,071	75,111
75-79	176,246	139,474	88,506	42,273
80+	126,972	107,037	102,872	31,279
Total	19,608,163	8,930,398	10,698,759	2,323,492

NOTE: Author's calculations. Weighted statistics. Sample includes all individuals ages 18 and older. "LGBT" in the Pulse is defined as whether the respondent indicates they are either (1) gay/lesbian, bisexual, or transgender, or (2) reports a gender at birth that is different from their current gender identity. "LGBT" in the BRFSS is defined as whether the respondent indicates that they are either gay/lesbian; bisexual; transgender, male-to-female; transgender, female-to-male; or transgender, gender non-conforming. "LGB" in the NHIS is defined as whether the respondent indicates they are gay/lesbian or bisexual. Individuals in the ACS are counted in a same-sex household if they are in a cohabiting relationship with a spouse or unmarried partner of the same sex.

Analyzing economic outcomes

PULSE ANALYSES

The incomplete SOGI identification in the ACS is of particular concern if important outcome disparities across groups are misestimated. LGBT individuals in cohabiting relationships are likely to be different from the LGBT population as a whole on a variety of dimensions. Table 4 shows this by comparing how outcomes differ between groups using the Census Bureau Household Pulse Survey and the ACS. The newer Pulse Survey collects individuals' SOGI information along with some economic outcomes comparable to the ACS. These include individuals' employment status, income levels, SNAP receipt, homeownership, and health insurance.

As the basic demographic information from the Pulse shows in Table 4, LGBT people are more than a decade younger than non-LGBT people on average. Those who identify as LGBT are also more likely to identify as Hispanic and as an "other race" outside of the three major racial groups. LGBT people also have fewer children in the household compared to non-LGBT individuals on average. (These are not necessarily the children of the reference person, however.) Finally, the Pulse estimates that around 30% of the LGBT population are married. However, it does not report any information about individuals who are unmarried partners. Moreover, it does not include a variable indicating relationship to the householder as the NHIS and ACS do, which makes it difficult to identify SSHs in a similar manner.

To investigate educational outcomes, we restrict our sample to individuals aged 25 and older. While there is a slightly higher share of LGBT individuals than non-LGBT individuals who attained at least a bachelor's degree, there is not a statistically significant difference between groups in attaining a master's degree or higher.

TABLE 4

Demographic characteristics for individuals, 2021

	Pulse, 2021			ACS, 2021		
	LGBT	Non LGBT	Difference	In same-sex relationship	Not in same-sex relationship	Difference
Panel A: Demographic characteristics						
Age	36.81	49.09	-12.28***	45.13	48.02	-2.88***
White	0.75	0.76	-0.01***	0.68	0.64	0.04***
Black	0.11	0.12	-0.02***	0.09	0.12	-0.03***
Asian	0.05	0.06	-0.01***	0.04	0.06	-0.02***
Other race	0.09	0.05	0.04***	0.19	0.18	0.01**
Hispanic	0.21	0.17	0.04***	0.16	0.17	0
# children under 18 in HH	0.63	0.73	-0.11***	0.23	0.51	-0.28***
Married	0.29	0.57	-0.29***	0.59	0.56	0.02***
Unmarried couple	-	-	-	0.41	0.08	0.34***

TABLE 4 CONT.

	Pulse, 2021			ACS, 2021		
	LGBT	Non LGBT	Difference	In same-sex relationship	Not in same-sex relationship	Difference
Panel B: Education and health						
Bachelor's degree or higher	0.35	0.33	0.03***	0.52	0.35	0.16***
Master's degree or higher	0.15	0.15	0	0.24	0.14	0.10***
Any health insurance coverage	0.73	0.76	-0.03***	0.92	0.9	0.02***
Any disability	0.21	0.14	0.07***	0.12	0.16	-0.03***
Very anxious	0.47	0.24	0.23***	-	-	-
Very depressed	0.38	0.17	0.21***	-	-	-
No mental help	0.26	0.1	0.16***	-	-	-
Panel C: Employment and income						
Employed	0.63	0.57	0.07***	0.75	0.6	0.14***
Employed, ages 18-64	0.67	0.67	0	0.81	0.72	0.09***
In labor force	-	-	-	0.79	0.64	0.15***
Homeowner	0.54	0.72	-0.18***	0.64	0.67	-0.03***
Received SNAP	0.17	0.12	0.04***	0.1	0.12	-0.02***
Total household income below 35k	0.34	0.26	0.08***	0.1	0.19	-0.08***
Median household income	-	-	-	\$101,300	\$80,100	\$21,200***
Below poverty level	-	-	-	0.1	0.14	-0.04***
Food insufficient	0.13	0.09	0.05***	-	-	-
Recent job loss	0.21	0.16	0.05***	-	-	-
Displaced due to COVID-19	0.13	0.08	0.04***	-	-	-
Difficulty paying expenses	0.36	0.28	0.09***	-	-	-
Observations	36,478	468,724		23,447	2,544,369	

NOTE: Weighted statistics. Not in same-sex couple in the ACS refers to all individuals who are in different-sex relationships or not in either a same-sex or different-sex relationship. The denominator in each of these calculations are all individuals. Sample for education outcomes include individuals ages 25 and older.

We also consider some health outcomes in the Pulse. LGBT individuals are slightly less likely to have any health insurance and more likely to be disabled. Moreover, the Pulse includes additional variables about individuals' mental health status and indicates that the overall LGBT population has higher rates of anxiety and depression with less access to mental help among those needing counseling or therapy from a mental health professional than the non-LGBT population.

Panel C examines employment and income outcomes. While rates of employment are slightly higher among all LGBT people, the rates are similar between LGBT and non-LGBT prime working age people. Homeownership is notably lower among LGBT individuals. Other research suggests that this is because LGBT households are likely to reside in metropolitan areas where owning a home is less likely (Badgett, Carpenter, and Sansone 2021). The raw means indicate that LGBT people are 4 percentage points more likely to receive SNAP benefits and 8 percentage points more likely to have household income below \$35,000.

The Pulse also includes information about food insecurity and job loss. As other studies have also shown, a greater share of LGBT respondents lived in a household that experienced food insecurity or had a loss of household employment income compared to non-LGBT respondents (Anderson et al. 2021). A Williams Institute report also found that transgender people were almost 2.5 times more likely than cisgender people to face food insufficiency and almost twice as likely to face barriers accessing food beyond affordability (Conron and O'Neill 2022). Our results also show that a greater share of LGBT adults face difficulty paying expenses and have had someone in their household lose a job within the last seven days compared to their counterparts.

Overall, the differences in means suggest that LGBT individuals fare worse on many measures of economic well-being than non-LGBT people when not accounting for other differences between these groups. Group differences in the raw means are likely driven by other characteristics associated with these outcomes. Moreover, outcomes are likely to vary across sexual orientation categories and gender identity. For instance, as seen in Appendix Table B1, the partnership patterns

for individuals who identify as bisexual or "something else/other" show a higher share of men and women being in different-sex relationships than same-sex relationships. This may suggest that those who identify in those categories may have similar economic behaviors or outcomes as the straight population, which makes it important to disaggregate by identity.

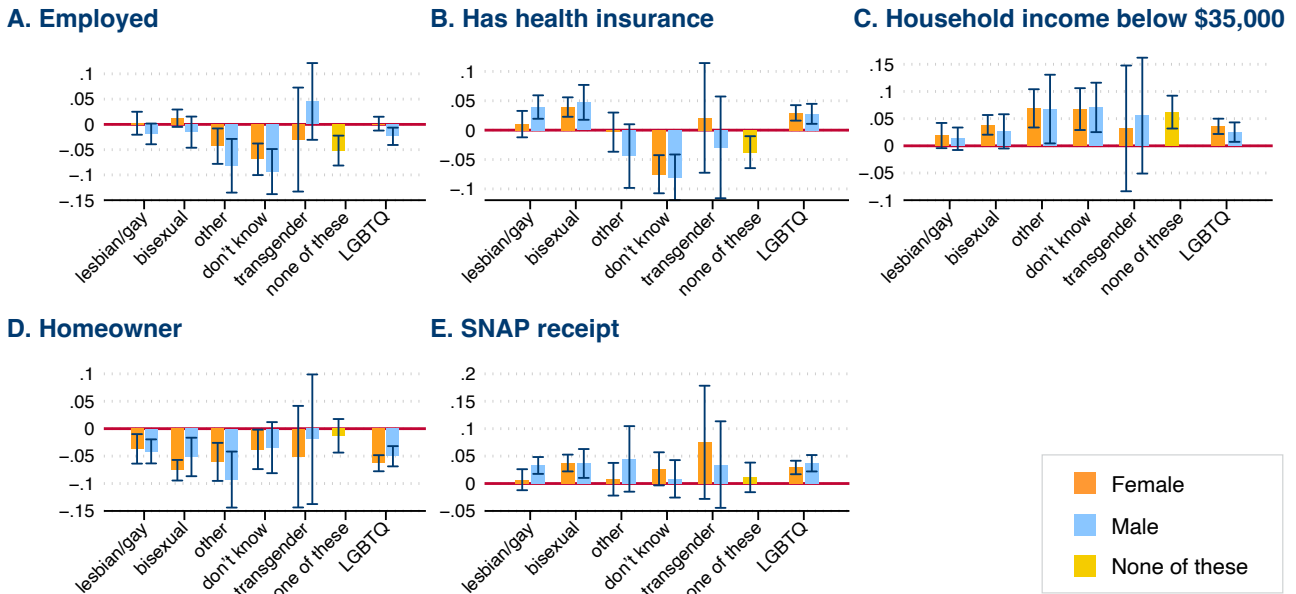
To further investigate the relationship between economic outcomes and LGBT status, we estimate a series of linear regressions on a set of outcome variables. The detailed methodology can be found in the Appendix. Figure 6 highlights the results in the Pulse broken down by current gender identity and sexual identity as well as an aggregate measure of all LGBTQ identities. The coefficients reflect the difference in outcomes between the group and the straight subpopulation, controlling for demographic characteristics such as age, race/ethnicity, educational attainment, state of residency, marriage, and number of children. Appendix C reports complete regression tables.

We find that those who identify as "something else/other" or "don't know" for their sexual identity seem to have more negative economic outcomes than straight people and from other sexual identity groups in our full model. For instance, men who "don't know" how to identify are 9 percentage points less likely to be employed, 8 percentage points less likely to have health insurance, and 7 percentage points more likely than straight men to have household income below \$35,000. Women who identify as "don't know" have similar outcomes to men who "don't know" and appear to have worse outcomes than straight women.

On the other hand, there is not a statistically significant difference in employment outcomes between bisexual men and women with their heterosexual counterparts. Our results do suggest, though, that bisexual men and women are more likely to have household income below \$35,000 than their straight counterparts. Bisexual individuals are also more likely than straight people to be in a SNAP recipient household. This may suggest that bisexual men and women do, in fact, have economically different outcomes from their straight counterparts and may experience discrimination or have different choices or preferences.

FIGURE 6

Pulse outcomes, by sexual orientation and gender identity



Note: Columns represent coefficients from the full regression model, which controls for individual age, race/ethnicity, educational attainment, state fixed effects, marital status, and number of children in household. Lesbian/gay, bisexual, other, and "don't know" all refer to an individual's sexual identity, with straight/heterosexual as its baseline comparison. Transgender and "none of these" refer to an individual's current gender identity, with cisgender as its baseline comparison. Female/male are defined based on current gender identity.

Source: Authors' calculations. Census Household Pulse Survey 2021

BROOKINGS

Gay men are slightly less likely than straight men to be employed, are more likely to be in a SNAP household, and are less likely to own a home than straight men. They do exhibit higher rates of health insurance, however. On average, lesbian women are similar to straight women in terms of most economic status variables but are less likely to own a home.

What can explain the difference in outcomes between the LGB category and the "other"/ "don't know" category? Some studies suggest that those who respond in those categories tend to have other characteristics that might also be correlated with negative economic outcomes. For instance, individuals who might not speak English well or come from non-U.S. backgrounds might select "other" or be less likely to identify as LGB (Badgett et al. 2009, Chae et al. 2010, Kim and Frederikson-Goldsen 2013). At the same time, individuals who are foreign-born are likely to have lower income and may be less likely to qualify for programs

like Medicaid or SNAP. This may potentially explain why those who identify as "something else" or "don't know" are less likely to have any health insurance.

Due to data limitations, however, we are unable to assess whether controlling for additional key characteristics like citizenship or language would impact our estimates. Other key variables that the Pulse does not collect are detailed industry or occupational codes, which may be important in the context of understanding the impact of COVID-19 on employment and economic wellbeing. Finally, similar to findings by Carpenter, Lee, and Nettuno (2022), economic outcomes for those whose gender identity is "none of these" are different from other non-cisgender people.⁸ In particular, those whose gender identity is "none of these" face stronger employment penalties, are less likely to have any health insurance, and more likely to be in a household with income less than \$35,000. Carpenter, Lee, and Nettuno (2022) also examine the cross rela-

tionships between race/ethnicity and gender minority status and find that Black non-cisgender individuals are significantly less likely to be employed, more likely to be enrolled in Medicaid, and participate in SNAP or be food insecure.

COMPARING THE PULSE AND ACS

Table 4 also allows us to learn some key differences between the Pulse and the ACS in the characteristics of the identified non-straight population. While the Pulse samples the full LGBT population, the ACS only captures individuals in cohabiting relationships, who tend to be older and advantaged in other measures. For instance, individuals in same-sex relationships in the ACS are around 10 years older than the overall LGBT population in the ACS. This is expected because younger individuals are less likely to be in cohabiting relationships. Individuals in same-sex couples have fewer children in the household compared to those not in a same-sex relationship. Interestingly, though, LGBT people in the Pulse have more children on average in the household than individuals in same-sex couples in the ACS. (As noted above, the children may not be the child of the LGBT-identifying person. For example, younger individuals not in cohabiting relationships may be more likely to live with siblings under age 18.)

According to the ACS sample means, the share of individuals in same-sex couples who have at least a bachelor's degree is higher than the LGBT population overall. They are also more likely to have any health insurance and less likely to be disabled. However, the Pulse suggests that the reverse is true among all LGBT individuals compared to non-LGBT people.

Outcomes of individuals in same-sex relationships in the ACS appear to overstate the economic well-being of the LGBT population in general. As Panel C of Table 4 shows, compared to their counterparts, individuals in same-sex relationships are more likely to be employed and in the labor force and less likely to receive SNAP benefits or live below a poverty threshold. Individuals in same-sex relationships also have a median household income that is \$21,200 more than the household income for non-same-sex relationships. This again may be driven by the age composition within each sur-

vey, but also by the economic selection into and effect of partnership.

To parse out sample differences in age, education, and other characteristics between the Pulse and ACS, we run the same linear regressions from the Pulse using the ACS on five economic variables available in both surveys. These include employment status, whether the individual has health insurance, whether household income is below \$35,000, homeownership, and SNAP receipt. In these models, we aggregate the separate sexual identity categories in the Pulse to better compare against the general indicator variable for same-sex relationship.

In Figure 7, we depict four different models. The first model (teal bars) simply represents the mean differences between LGBT/non-LGBT (SSH/not in SSH) as in Table 4. The second model (sky blue bars) controls for age, race/ethnicity, gender, educational attainment, and state fixed effects. The third model (yellow bars) controls for everything in the second model as well as marital status and the total number of children in the household. The fourth model adds unmarried couple status only in the ACS, about which the Pulse does not include any information.

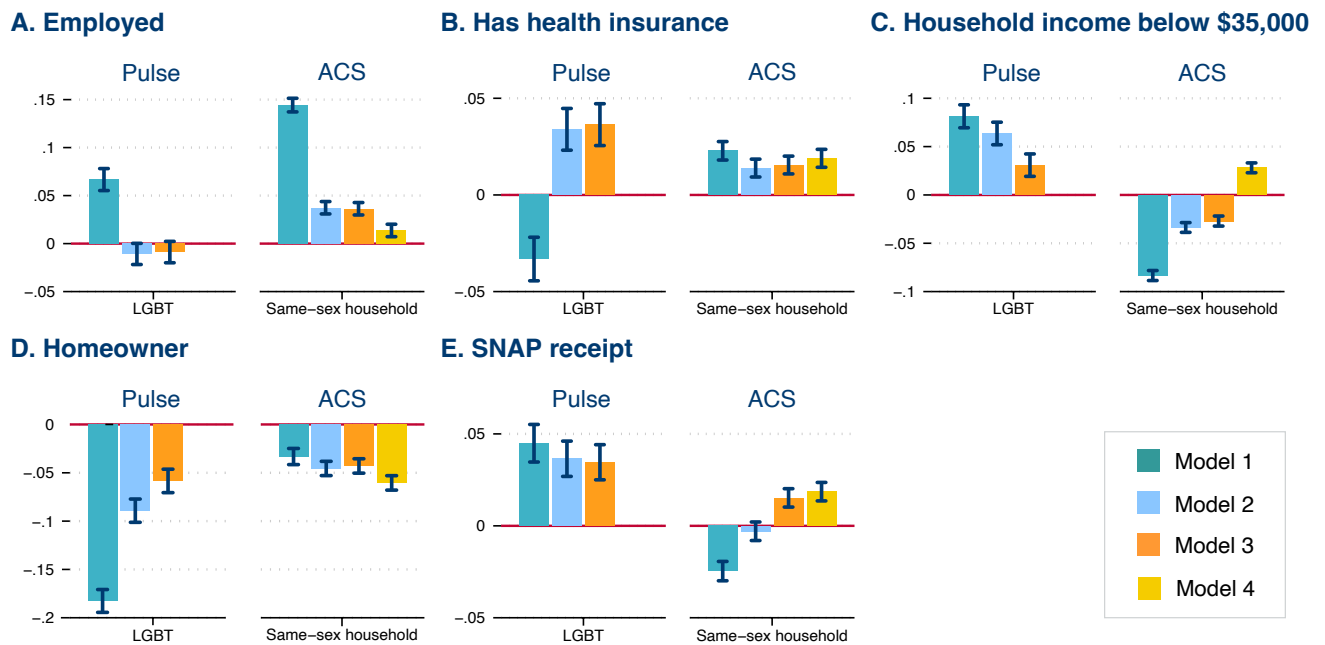
The results indicate that controlling for certain demographic characteristics—in particular, age and marital status—attenuates and even reverses the group differences between LGBT and non-LGBT adults. For instance, controlling for demographic characteristics in Model 2 now makes LGBT adults 2 percentage points ($p < 0.01$) less likely to be employed than their counterparts in the Pulse; in the ACS, the coefficient falls by 10 percentage points. When controlling additionally for marital status, number of children in the household, and unmarried couple status, individuals in same-sex relationships are only 1 percentage point more likely than those not in same-sex relationships to be employed.

Similarly, in Panel B, including demographic characteristics reverses the coefficient on LGBT and suggests that LGBT individuals are 3.6 percentage points more likely to have any health insurance than non-LGBT people. Controlling for the same set of variables in the

ACS leads to a similar estimate. In Panels C and E, the full specification in the ACS that adds the unmarried couple status leads to similar estimates in the Pulse. In Panel D, adding controls attenuates the coefficients in the Pulse, but it still suggests that LGBT individuals overall and those in same-sex relationships remain less likely to own a home than their counterparts.

The comparisons between the ACS and Pulse reveal three key findings, which are that (1) economic outcomes in the ACS appear better than in the Pulse due to sampling differences between the surveys, but (2) controlling for the same set of key characteristics in each—such as age and marital/couple status—can make the datasets more comparable. Finally, after controlling for key characteristics, (3) LGBT individuals and those in same-sex relationships are more likely to have any health insurance but are also more likely to receive SNAP benefits and have household income below \$35,000. These results suggest that LGBTQ individuals fare worse than non-LGBTQ individuals on some economic and social outcomes. A more nuanced understanding of these differences, such as the role of occupation, earnings, and labor supply, would be possible if SOGI information were collected in the American Community Survey and other major surveys.

FIGURE 7
Comparing ACS and Pulse outcomes



Note: Model 1 shows the raw means between demographic groups within the survey. Model 2 controls for age dummies, race/ethnicity, gender, educational dummies, and state FE. Model 3 represents the full specification in the Pulse, which additionally includes controls for marital status and number of children. Model 4 is the full specification in the ACS and additionally controls for unmarried couple status. The Pulse does not report this information in its survey.
Source: Author's calculations. American Community Survey 2021, Census Household Pulse Survey 2021

Policy/Data suggestions

Our work highlights the importance of more holistic data collection by large, federally supported economic datasets like the American Community Survey (or the Current Population Survey, which similarly only collects data about cohabiting relationships). Current work using the ACS can only perform individual-level analysis in same-sex households. For example, previous literature using the ACS has examined poverty in same-sex households, median household incomes, and the hourly wage gap for individuals in same-sex and different-sex households (Martell 2019; Schneebaum and Badgett 2019; Badgett, Carpenter, and Sansone 2021; Macklin, Bauer, and Clevestine 2022). Our results suggest that the methods used to identify same-sex relationships are a sound proxy for LGBT individuals in cohabiting relationships but not for those outside such relationships. There remain significant challenges in identifying and analyzing LGBT individuals who are not in a same-sex household, including single adults or those who may be in a different-sex household but identify themselves as bisexual or transgender. We estimate that up to 17.3 million adults who identify as LGBT go unidentified in the ACS, with the largest gap among young adults. Given the higher growth rate of LGBT identification among young adults over time, the gap in analysis will continue to grow if the overall trends in identification continue.

Economists and other researchers have made progress on the issue of LGBT data collection, and we urge demographers and federal agencies to begin including appropriate SOGI questions in their surveys. One collaborative effort from the [Sexual Minority Assessment Research Team](#) developed a comprehensive report on the best practices to ask sexual orientation questions on surveys. Another [Williams Institute report](#) documents the best ways to ask questions to identify transgender and other gender-minority respondents. Additional work by the [Federal Committee on Statistical Methodology](#) has evaluated different SOGI measurements. Most recently, the Biden-Harris administration released the [first federal evidence agenda on LGBTQI+ equity](#) that overviews the data needs and guidelines to better collect SOGI data. In tandem with the new [LGBTQI+ Data Inclusion Act](#) passed by Congress in 2022, we see these new federal efforts as a step in the right direction towards better data collection and analysis of the LGBTQ+ population.

In addition to efforts for better data collection in the ACS, we also recommend that health surveys like the NHIS include questions on both sexual orientation and gender identity. The omission of gender identity questions impacts LGBT measurement limits and analysis of transgender populations. This is particularly important since trans identity is often associated with negative health outcomes, such as suicide or social stressors (Reisner et al. 2014, Dejun Su et al. 2016).

Finally, we encourage surveys like the BRFSS to make the currently state-optional SOGI module a mandatory component of their core survey. State-level analysis can be important to understand the impact of state-level policies or legislation on outcomes for LGBT individuals. For instance, sexual and gender minority youth who lived in states with LGBT equity laws were less likely to experience bullying and possible reductions in binge drinking (Watson et al. 2021, Chien et al. 2022). Access to same-sex marriage also varied across states and time before national marriage equality in 2015, and research found that legal access to same-sex marriage improved health for gay adult men (Carpenter et al. 2018). Moreover, more complete state data would allow researchers to better understand the location choices of LGBT people.

The population of individuals identifying as LGBTQ+ in the United States is growing over time, and related social policies are evolving rapidly. At the same time, comparatively little is known about the economic status of the LGBTQ+ population, and efforts to infer LGBTQ+ status from existing government surveys may lead to misleading conclusions. Improvements in survey design can help fill a critical knowledge gap.

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END NOTES

- 1 Sexual orientation comprises of three separate, but related variables that surveys either use singly or together, depending on what their surveys are trying to collect: sexual identity, sexual attraction, and sexual behavior.
- 2 The “none of these” group in the Pulse current gender identity question may comprise of those who would answer “Transgender, gender nonconforming” in the BRFSS, but it may also include those who are not attached to the term “transgender” but still identify as “nonbinary” or “genderqueer.” Therefore, the “none of these” response in the Pulse is not necessarily a direct mapping of the gender non-conforming category in the BRFSS and we distinguish these two measurements in Table 1.
- 3 These estimates are drawn from data from 34 available states in 2021 and 14 states in 2014. We run an additional test that looks at the trends from the five states that are consistently sampled over all the years (Hawaii, Minnesota, Ohio, Virginia, and Wisconsin). The trend closely tracks the overall pattern, suggesting that the trend in prevalence is similar across the available states over time.
- 4 This estimate is similar to those calculated from a recent Census [data interactive](#).
- 5 The issue of stigma and response bias is particularly salient with any marginalized identity, and people may choose not to be honest or not respond. Over time, with increased prevalence in LGBT identity, it is difficult to determine whether the trends come from growing “truthfulness” or willingness to report a marginalized identity, or whether the trends capture changes in behavior and identity.
6. The ACS and NHIS contain the same questions of an individual’s relationship to a household reference person and each individual’s reported gender until 2018. After that, the NHIS discontinued the relationship to reference person variable and replaced it with a more direct question asking for the sex of the respondent’s spouse or partner.
- 7 This approach captures same-sex relationships in a comparable way to the ACS. The [United States Census](#) estimates that there were 1,209,462 total same-sex households in 2021, growing from 726,600 households in 2013. The [Williams Institute](#) reports a total estimate of 646,500 same-sex couples using the ACS 2011-2013, and we estimate 696,588 same-sex couples using ACS 2013 data. Fisher, Gee, and Looney (2018) leverage tax data to calculate the number of same-sex joint filers and estimate a total of 131,080 same-sex couples in 2013. The number of same-sex joint filers is only a fraction of the census estimate because a significant portion of same-sex couples who describe themselves as married tend to not be legally married and therefore ineligible to file joint tax returns.
- 8 Other non-cisgender people include those who explicitly respond “transgender” to the current gender identity question or indicate that they were male (female) at birth and currently identify as female (male).

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