Acceptance of Same-Sex Couples and Their Location Choices

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Abstract

This paper shows that social acceptance of same-sex couples affects their location decisions, especially those with college degrees, resulting in higher educational sorting of same-sex couples across cities. I derive the mean utility of each city from a conditional logit model of location choice, separately for same-sex couples with and without college degrees and different-sex couples with and without college degrees. I then run a regression of the mean utility on acceptance for each group to see the effect of acceptance on location choices. To deal with endogeneity from the simultaneity between acceptance and the location choice of same-sex couples, I use a novel instrument based on the historical number of churches. I find that acceptance has a substantial impact on the location choices of college-educated same-sex couples. Counterfactual analysis suggests significant implications for productivity in an area and the welfare of same-sex couples.

Keywords: Same-sex couples. Location choice. Amenities. Acceptance. Education.

JEL Classification Numbers: J12, R11, R23, Z13.

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1 Introduction

Same-sex couples are not evenly distributed across metropolitan areas in the United States. In San Francisco, 3.0% of cohabiting couples are same-sex couples, whereas in Detroit, the figure is 1.2%.[1] Among smaller metropolitan areas, Ithaca, New York, has a share of same-sex couples at 3.1%, in contrast to Yuma, Arizona, which has a lower share at 0.7%. While multiple factors may influence their decisions about where to live, one crucial factor that has received limited attention is the social acceptance of same-sex couples.

Understanding the influence of acceptance on the residential choices of same-sex couples is crucial for two reasons. First, the concentration of same-sex couples could increase the productivity of an area in several ways. Diversity itself is known to attract certain types of firms and to make existing workers and firms more productive (Glaeser et al., 1992; Rosenthal and Strange, 2003; Tao et al., 2019). Moreover, individuals in same-sex relationships tend to have higher educational attainment than those in different-sex relationships and are more likely to participate in the labor market (Badgett et al., 2021), contributing to the overall productivity through human capital externalities and agglomeration effects (Moretti, 2004; Rosenthal and Strange, 2008). They may also attract other highly educated individuals, given the strong correlation between educational attainment and preferences for liberal or progressive values (Leguizamon and Leguizamon, 2017; Downey and Liu, 2023). Second, individuals who openly identify as lesbian, gay, or bisexual represent a significant minority group that has grown substantially in recent years.[2] Therefore, understanding their location preferences has become increasingly important. In this paper, I show that the acceptance of same-sex couples affects their location decisions, especially those with college degrees, resulting in higher educational

[1] The statistics are from the American Community Survey (ACS) 2015-2019 5-year pooled sample. Due to data limitations, I focus on same-sex couples who are living together. See Section 3 for details.

[2] According to the ACS 2015-2019 5-year pooled data, 1% and 5.3% of married and unmarried cohabiting couples, respectively, are same-sex couples.

sorting of same-sex couples across areas.

I first present a simple model to generate intuition. In the model, acceptance does not affect wages in equilibrium due to heterogeneity in the preferences of the broader population. According to the model, same-sex couples are more likely to move to areas with higher acceptance. This is because there is a surplus for same-sex couples from choosing a location with higher acceptance since acceptance is not translated into wages in equilibrium. Also, this would be more prominent among college-educated same-sex couples due to lower barriers to migration and a higher marginal rate of substitution of acceptance for wage.

I construct a measure of acceptance of same-sex couples in each city using data from the 2018 General Social Survey (GSS). The GSS has a question about attitudes toward same-sex relationships. It also includes information on some demographic characteristics and whether the respondent voted for the Democratic Party in the most recent presidential election. Because I do not observe reliable estimates of acceptance at the city level due to data limitations, I first estimate a logit regression of acceptance of same-sex couples, where the dependent variable is binary, taking the value of 1 if the respondent states that "Same-sex relationship is not wrong at all", and 0 otherwise. To select relevant predictors among individual characteristics, including partisanship, I use the LASSO technique (Tibshirani, 1996; Hastie et al., 2015). I then use the estimated coefficients from the logit regression with city-level average characteristics from the American Community Survey (ACS) 2015-2019 5-year pooled data and the Democratic vote share in each city from the 2016 presidential election and estimate the average level of acceptance of same-sex couples in each city.

To investigate the impact of acceptance of same-sex couples on location choices, I first specify a conditional logit model of location choice (McFadden et al., 1973; Diamond, 2016; Berry et al., 1995; Berry et al., 2004; Nevo, 2001). I derive mean utilities of each city by estimating the model using the ACS data, separately for same-sex couples with and

without college degrees and different-sex couples with and without college degrees. A city's mean utility is defined as a utility common to all individuals in each group in the city and not explained by hometown attachment. I then regress the mean utilities of each group on the acceptance of same-sex couples, controlling for city characteristics. The OLS results show a positive effect of acceptance on the mean utilities of college-educated same-sex couples, while there was no statistically significant effects for other groups.

However, the OLS estimates may be biased due to many different sources of endogeneity. Same-sex couples have a higher demand for consumption amenities, tend to attain higher levels of education, and are more likely to participate in the labor force (Black et al., 2002; Badgett et al., 2021). As a result, their preferences for city characteristics may align with those of college-educated individuals. Furthermore, college-educated individuals are known to prefer liberal or progressive values (Downey and Liu, 2023). This suggests that higher levels of acceptance may reflect shared preferences for other city characteristics between same-sex couples and college-educated individuals. In addition, acceptance may evolve endogenously over time. For example, acceptance may increase in areas with more same-sex couples, attracting more same-sex couples, thus creating a self-reinforcing cycle.

To address endogeneity concerns, I employ a novel instrumental variable, the number of evangelical churches present in each city in 1952, obtained from the Association of Religion Data Archives. Evangelical churches, known for their conservative views on same-sex relationships (Williams, 2015), could have influenced attitudes toward same-sex couples in each area (Steensland et al., 2000; Bazzi et al., 2023). The estimate from the instrumental variable specification still indicates a positive effect of acceptance on the mean utilities of college-educated same-sex couples. Estimates for other groups remain statistically insignificant.

Using the IV estimates, I draw implications for the distribution of college-educated same-sex couples across cities and their welfare. I assume a counterfactual scenario

where every city has the same level of acceptance at the mean. Cities with relatively high acceptance, such as San Francisco, turn out to lose almost half of their college-educated same-sex couples, while cities with lower acceptance, such as Memphis, have more than twice as many college-educated same-sex couples as they actually have. This suggests that having higher acceptance would allow cities with currently lower acceptance to attract college-educated people, potentially increasing productivity. In another counterfactual, where I increase acceptance by 1% in every city, I find that the change is equivalent to a 1.5% increase in the wages of college-educated individuals in same-sex relationships.

Potential threats to the validity of the instrument are examined. First, a historical correlation between the number of evangelical churches and the share of same-sex couples could threaten the validity of the instrument. I show a small and stable difference between members of evangelical churches and non-evangelicals in their acceptance from 1973 to 1990, suggesting that evangelical churches would not have had a significant effect on the location choices of same-sex couples before 1990, at least not through acceptance. I also show that even as late as 2000, there was no correlation between the historical number of evangelical churches and the share of same-sex couples. Second, evangelical churches may have influenced location choices through amenities other than acceptance. I include amenities correlated with evangelical churches as controls in the IV regression. The coefficient on acceptance does not change much, suggesting that the baseline controls capture potential unobserved amenities reasonably well.

To provide further evidence of educational sorting, I analyze annual migration decisions using information on individuals' metropolitan areas of residence one year ago. I construct a measure of acceptance for each year using the GSS, the ACS 1-year file, and the most recent presidential election for each year. I run a regression of the difference in acceptance between destination and origin on individual characteristics. The results indicate that college-educated same-sex couples move to metropolitan areas that are 0.053 pp more

accepting than their non-college-educated counterparts, while there is a smaller difference of 0.009 pp between different-sex couples with and without college degrees.[3] These results support the main analysis by showing a pattern of location decisions from observable annual migration decisions.

This paper contributes to the literature on the location choice of same-sex couples by establishing a causal link between the acceptance of same-sex couples and their location choices. Despite the aforementioned importance, the topic is highly understudied. Black et al. (2002) suggest that differences in family formation patterns of same-sex couples are a driving mechanism for why same-sex couples would disproportionately live in certain cities. They show that when controlling for other locational amenities, the importance of acceptance diminishes or loses its significance in the concentration of same-sex couples. However, using the historical number of evangelical churches as an instrument for acceptance, this paper shows that acceptance remains a significant factor in the location choices of same-sex couples, especially for those with college degrees. To my knowledge, this paper is also the first to examine the educational sorting of same-sex couples across cities.

The results of this paper also contribute to the broader literature on geographic sorting in the United States by political preference (Brown et al., 2022; Kaplan et al., 2022; Downey and Liu, 2023) and education (Diamond, 2016; Moretti, 2012; Diamond and Gaubert, 2022). This paper adds to the literature by highlighting the nuanced interaction of minority status, acceptance, and educational attainment.

The rest of the paper proceeds as follows. Section 2 presents a theoretical model of migration choice and motivates some empirical questions. Section 3 describes the data, including the measure of acceptance. Section 4 explains my empirical strategy. Section 5 presents empirical evidence on the effect of acceptance of same-sex couples on their location choices. Section 6 provides further evidence of selective migration from annual

[3]The coefficients are relatively small overall because the sample includes people who have not moved within the past 12 months, which is more than 95 % of the sample.

migration flows. Section 7 concludes.

2 Theoretical framework

In this section, I present a simple model that explains the sorting of same-sex couples across cities. Individual i living in origin o chooses destination d. Individuals are either in a different-sex relationship, D, or in a same-sex relationship, S. Each location j offers a level of acceptance of same-sex couples, a_j, other amenities, ψ_j, and a wage level, w_j.[4] The utility of individual i is $V^i(w_j, a_j, \psi_j)$. I denote the average utilities enjoyed by different-sex and same-sex couples in location j as V_j^D and V_j^S, respectively.

Suppose that same-sex couples have a strong preference for living in areas with greater acceptance, while among the broader population, there is a high degree of preference heterogeneity for acceptance of same-sex couples. Also, assume for simplicity that there is no preference heterogeneity for other amenities, ψ_j. The level of ψ_j affects the equilibrium wage in j, w_j^*. That is, the wage level adjusts to compensate for the level of ψ_j, thereby equalizing the level of utility an individual can obtain in different locations. Suppose, however, that due to the high degree of heterogeneity in preferences for acceptance of same-sex couples, such acceptance is not reflected in equilibrium wages. In other words, some people like the acceptance of same-sex couples, but a similar proportion of people do not like it, so the equilibrium wage does not depend on the level of acceptance. Therefore, the equilibrium wage depends only on the level of ψ_j.

Now, consider two destinations, d and d', with $a_{d'} > a_d$ and $\psi_{d'} = \psi_d$.[5] Suppose there are no migration costs. Since the levels of ψ are the same in d and d', equilibrium wages are also the same. Given the same wage levels in d and d', the average utility levels for different-sex couples in d and d' are the same. This is because they have high preference

[4] For simplicity, I assume away the rent level of each city. The same implication can be derived with rent in the model.

[5] One can think of these as the top two destination candidates.

heterogeneity for a. Same-sex couples, however, get a greater average utility in d' than in d. This is because they receive the same equilibrium wage in both locations, while they strongly prefer the higher level of a in d'. Furthermore, there is a wage level, w', that could make same-sex couples' utility levels in d' the same as in d with w^*. Abusing notation, it can be written as $V^S_{d'}(w') = V^S_d(w^*)$. There is also a surplus when same-sex couples choose d'. That is, $V^S_{d'}(w^*) > V^S_d(w^*)$. Therefore, same-sex couples will choose d' over d. Note that the surplus increases with w^* since the marginal rate of substitution of a for w increases with w. The graphical representation is in Figure 1.

Now suppose there are migration costs. Without migration costs, d' is strictly preferred by same-sex couples. With migration costs, however, d might be a better choice for *some* same-sex couples, depending on the origin and size of migration costs. That is, holding origin fixed, the degree to which same-sex couples prefer d' to d would be higher for same-sex couples with smaller migration costs. Imposing spatial equilibrium, the two locations d and d' with the same level of ψ are generalizable to two destinations with different levels of ψ_j.

The model has three main implications. First, same-sex couples would be more likely to choose locations with higher acceptance. This may seem obvious, but it is based on the high degree of preference heterogeneity for acceptance of same-sex couples in the broader population. Because of the high degree of preference heterogeneity, acceptance in each area does not translate into an equilibrium wage. Therefore, same-sex couples may enjoy a higher level of acceptance in d' without actually "paying" for it. This could be the reason why their concentration in locations with higher acceptance is exceptionally high compared to concentrations with other amenities that translate into an equilibrium wage.

The second implication is that there will be a difference in the tendency to choose locations with higher acceptance between same-sex couples with and without college degrees. There are two reasons for this. First, the equilibrium wage in an area increases

with education. As noted earlier, this increases the surplus from choosing a more accepting location because the marginal rate of substitution of acceptance for wages increases with wages. Second, higher education lowers the barriers to migration (Diamond, 2016). Education increases earnings potential, making the financial aspects of relocating more manageable. Higher education also equips individuals with a broader range of skills and qualifications, providing more opportunities in different locations.

Lastly, the model suggests that because of the surplus from choosing a destination with a higher acceptance, same-sex couples might choose d' even when there is a wage offer lower than w^*. This is because even if they are offered a wage lower than w^*, they would still be better off by accepting it and choosing d' as long as the wage is higher than w'.

While this model provides some intuition about how acceptance might affect the location choices of same-sex couples, it makes some rather strong assumptions and does not explicitly model some of the key aspects of location choice, including education and migration costs. I extend the model in Section 4 imposing some parametric assumptions on the indirect utility of individuals.

In Section 5 and Section 6, I will examine whether these model implications hold empirically. In the next section, I provide information on the data I use.

3 Data

3.1 Census and American Community Survey (ACS)

The main analysis of this paper uses data from the American Community Survey (ACS) 2015-2019 5-year pooled sample. It includes demographic characteristics, economic characteristics, and family characteristics. According to the Census Bureau, sample weights of the ACS 2015-2019 5-year pooled data are constructed to represent the total population over the entire 5-year period, and the 5-year pooled data is considered a 2017 cross-section

in practice. I also use the 2000 Census to measure the lagged share of same-sex couples. The ACS 2005-2019 stacked 1-year samples are used for analyzing annual migration flows.

Same-sex couples in the sample

Because the ACS does not ask directly about an individual's sexual orientation, same-sex couples are identified in the ACS by their relationship to the household head and their sex (Goodnature and Neto, 2021). If a respondent reports that their relationship to the household head is "Husband or wife" or "Unmarried partner" and they are of the same sex, then they are identified as being in a same-sex partnership.[6]. Therefore, individuals are identified as being in a same-sex partnership if they live with their same-sex partner. Admittedly, they are not a random sample of same-sex couples since the identification is based on coresidence information. However, many of their key dimensions, such as income and education, are similar to those of individuals who report same-sex sexual orientation in the General Social Survey data whose identification is not based on coresidence (Black et al., 2007).

3.2 Measure of acceptance of same-sex couples

I construct a measure of acceptance of same-sex couples in each city using the General Social Survey (GSS) conducted by the National Opinion Research Center, average demographic characteristics in each city, and Democratic vote share from presidential elections in each city. The GSS has a question about attitudes toward same-sex relationships: "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?" It also includes demographic characteristics, information on which party each respondent voted for in

[6]There is a separate option for "Housemate/roommate'. For more information on how same-sex couples are recorded in the Census and the ACS, see Appendix A.1

the most recent presidential election, and information on residence at the Census division level.

Due to data limitations that I explain further later in this section, I do not observe reliable estimates of acceptance at the city level. Therefore, I employ the following approach to estimate acceptance at the city level. Using the responses to the question related to same-sex relationships and respondent characteristics, I estimate a logit regression equation of acceptance of same-sex couples, where the dependent variable is binary, taking the value of 1 if the respondent states that "Same-sex relationship is not wrong at all", and 0 otherwise. I use the estimated coefficients from the logit regression with city-level average demographic characteristics from the ACS and Democratic vote share in each city from the most recent presidential elections to estimate the average acceptance of same-sex couples in each city, a_j.

I include partisanship in the logit regression because it is a significant predictor of acceptance of same-sex couples. Individuals who vote for the Democratic party are known to have, on average, more positive attitudes toward same-sex couples than those who vote for the Republican party (Wilcox, 2018; Bazzi et al., 2023). Individuals who prefer a higher level of acceptance of same-sex couples may be more likely to vote for the Democratic party, and individual opinions may also be influenced by their political party affiliation (Bartels, 2002; Levendusky, 2009; Goren and Chapp, 2017).

Since the purpose of the logit regression is to find the best fit of acceptance given individual characteristics, I use a post-LASSO logit estimation method to select predictors among some individual characteristics (Tibshirani, 1996; Hastie et al., 2015).[7] I include sex, age, age squared, race categories, education categories, and Census division of residence, whether respondents voted for the Democratic party in the recent presidential election, and all interaction terms between Census division, Democratic dummy, and other individual

[7]The tuning parameter has been chosen by ten-fold cross-validation.

characteristics. I then use the variables chosen by LASSO to estimate their relationship with acceptance using logit regression and predict the average level of acceptance in each city, a_j.[8] Table 1 shows the top and bottom 15 a_j locations in 2017.[9]

In their paper, Black et al. (2002) uses the restricted version of the GSS with residence information at the city level. The advantage of using the restricted GSS is that it shows the attitudes towards same-sex couples directly. However, the GSS is a relatively small survey, and for any given year, the sample size in each city can be very small. For this reason, Black et al. (2002) combines the years in a 10-year window from 1983 to 1993. Also, the GSS sampling is stratified within cities, so a measure taken directly from the restricted GSS will represent respondents from only a few randomly selected blocks in each city. In addition, because the GSS is also stratified across cities, there are many cities that do not appear each year.[10] For these reasons, using the restricted GSS directly, especially to obtain a measure for each city for each year, could result in a measure that is not very reliable. Also, although the approach of Black et al. (2002) combining years in a 10-year window could be applicable in the late 20th century, it could be problematic in the recent decades, when attitudes toward same-sex relationships have shifted dramatically in a polarizing way, both demographically and geographically. Therefore, to the extent that partisanship and demographic characteristics are good predictors *within* Census divisions, using the public version of the GSS along with city characteristics in the way that I propose in this paper would be an appropriate way to measure acceptance of same-sex couples at the city level for the purpose of this paper.

[8] For 2018 GSS, LASSO chose 74 variables out of a total of 169. The deviance ratio from the logit is 0.0791, indicating that the model fits the data relatively well.

[9] For acceptance (a_j) in 2017, I use the 2018 GSS that has information on who respondents voted for in the 2016 presidential election to get the post-LASSO logit estimates. Then, I use the coefficients on average demographic characteristics from the ACS 2015-2019 5-year file.

[10] Depending on the year, the number of cities that appear each year is at most about 80.

4 Empirical strategy

4.1 Deriving an estimating equation

To show the effect of attitudes toward same-sex couples on location choices, I specify a discrete choice model that imposes some parametric assumptions on the indirect utility of individuals in Section 2 following Diamond (2016). The setup is the conditional logit model, first formulated by McFadden et al. (1973) and widely used in the industrial organization literature (Berry et al., 1995; Berry et al., 2004; Nevo, 2001). Motivated by the theoretical framework in Section 2, I divide individuals into four groups: individuals in a different-sex relationship with and without college degrees, and individuals in a same-sex relationship with and without a college degree. The model allows me to obtain the mean utility of each city for each group.

Each individual i in group g chooses a city j in which to reside to maximize the following indirect utility:

$$V_{ij} = \beta_w^g \ln w_j^g - \beta_r^g \ln r_j + \beta_a^g a_j + \psi_j^g + \gamma_{\text{st}}^g d_{j,\text{st}(i)} + \gamma_{\text{div}}^g d_{j,\text{div}(i)} + \varepsilon_{ij}\,, \tag{1}$$

where w_j^g is the average wage of group g workers in city j and r_j is the average rent level in city j which does not vary across groups. There are N cities, and each city provides acceptance of same-sex couples, a_j, and other amenities excluding acceptance, ψ_j^g. $d_{j,\text{st}(i)}$ and $d_{j,\text{div}(i)}$ are dummies indicating that city j is in the state and census division of i's birth, respectively. Thus, γ_{st}^g and γ_{div}^g capture the value of living in i's state of and census division of birth. Each worker also has an individual, idiosyncratic taste for city amenities, ε_{ij}, which is drawn from a Type I Extreme Value distribution.

I define δ_j^g as the mean utility from city j that is common to all group g individuals in

the city and is not explained by hometown attachment:

$$\delta_j^g = \beta_w^g \ln w_j^g - \beta_r^g \ln r_j + \beta_a^g a_j + \psi_j^g. \tag{2}$$

Rewriting the utility (1) with δ_j^g,

$$V_{ij} = \delta_j^g + \gamma_{\text{st}}^g d_{j,\text{st}(i)} + \gamma_{\text{div}}^g d_{j,\text{div}(i)} + \varepsilon_{ij}.$$

By properties of the Type I Extreme Value distribution, the probability that worker i chooses to live in city j is

$$\Pr(V_{ij} > V_{ij'}) = \frac{\exp\left(\delta_j^g + \gamma_{\text{st}}^g d_{j,\text{st}(i)} + \gamma_{\text{div}}^g d_{j,\text{div}(i)}\right)}{\sum_{k=1}^{N} \exp\left(\delta_k^g + \gamma_{\text{st}}^g d_{k,\text{st}(i)} + + \gamma_{\text{div}}^g d_{k,\text{div}(i)}\right)}$$

for any city j'. Aggregated over individuals, the total population of each group in city j is

$$D_j^g = \sum_{i \in g} \frac{\exp\left(\delta_j^g + \gamma_{\text{st}}^g d_{j,\text{st}(i)} + \gamma_{\text{div}}^g d_{j,\text{div}(i)}\right)}{\sum_{k=1}^{N} \exp\left(\delta_k^g + \gamma_{\text{st}}^g d_{k,\text{st}(i)} + \gamma_{\text{div}}^g d_{k,\text{div}(i)}\right)}.$$

The population differences for workers of group g reflect differences in the mean utility values of these workers for these cities and also idiosyncratic deviations from the mean utilities reflected in migration costs. As discussed in Section 2, while population reflects the desirability of a city, migration costs may be a barrier to moving to more desirable cities. Diamond (2016) notes that the model accounts for migration costs by allowing workers to prefer to live in or near their state of birth. These costs represent the psychological and financial costs of migration, as well as the value of living near family and friends.

I estimate preferences for acceptance of same-sex couples using a two-step procedure (Berry et al., 2004; Diamond, 2016). First, I estimate the mean utility of each city for each group, δ_j^g, using a maximum likelihood estimator. The natural next step would be to

estimate the determinants of δ_j^g in Equation (2). However, wages and rents could be endogenous and threaten identification. In a similar model, Diamond (2016) treats wages and rents as endogenous and estimates the coefficients using a system of equations and multiple instruments. In the context of this paper, where the main focus is on a particular amenity, the attitude toward same-sex couples, this approach is not feasible. Instead, using the estimated δ_j^g, I define

$$\tilde{\delta}_j^g \equiv \delta_j^g - (\beta_w^g \ln w_j^g - \beta_r^g \ln r_j) \tag{3}$$

by borrowing estimates from Diamond (2016) where (β_w^g, β_r^g) is (2.116, 1.312) for groups with college degrees and (4.026, 2.496) for groups without college degrees. I then estimate the following regression equation of adjusted mean utility:

$$\tilde{\delta}_j^g = \beta_a^g a_j + Z_j' \eta + \epsilon_j \,, \tag{4}$$

where Z_j is a vector of city characteristics to control for general amenities, ψ, including total population, percentage of college graduates, percentage working full-time, average age, percentage of people with children, racial composition, and percentage of people born in the U.S. Controlling for the total population and percentage of college graduates potentially controls for general amenities because city size is correlated with the higher levels of local amenities (Carlino and Saiz, 2019; Albouy and Stuart, 2020), and college-educated people have a higher demand for local amenities (Diamond, 2016; Albouy, 2016; Albouy et al., 2021). Percentage working full-time accounts for the business environment. Controlling for the average age and percentage of people with children accounts for different demands for consumption amenities. These are important controls because same-sex couples may have a higher demand for nonchild amenities due to their lower propensity to have children (Black et al., 2002), and the average childbearing age of different-sex couples

with college degrees has also increased in recent decades (Couture and Handbury, 2020; Moreno-Maldonado and Santamaria, 2021). The racial composition and the percentage of people born in the U.S. control in part for general levels of tolerance toward different minority groups.

4.2 Potential endogeneity

Despite various controls, there are potential concerns about the endogeneity of the OLS estimate of β_a^g in Equation (4). First, there may be unobserved city characteristics that are correlated with acceptance. Individuals in same-sex relationships are known to have greater preferences for consumption amenities and higher levels of education, and to be more likely to supply labor (Black et al. 2002; Badgett et al. 2021). Thus, they may have been disproportionately attracted to growing, high-income, productive cities. Cities with these characteristics also attract people with higher levels of education, and people with higher levels of education are known to be more tolerant of same-sex couples. Figure 2 shows the percentage of people who think same-sex relationships are not wrong by education over time. There has always been a significant gap in the acceptance of same-sex couples between college and non-college populations, although the gap has narrowed somewhat over the past decade.

On the other hand, greater acceptance of same-sex couples may be associated with a lower availability of amenities typically favored by couples. This relationship arises because family formation adheres to more traditional norms, while accepting same-sex couples embodies a more progressive and non-traditional perspective. In essence, cities perceived as "family-oriented" may attract couples regardless of their orientation, resulting in a potential link between a high concentration of couples and lower levels of acceptance of same-sex couples. This could be the case here because my analysis is limited to the location choices of individuals living with their partners.

Another potential concern is that the acceptance may evolve endogenously. Cities with historically higher numbers of same-sex couples may have evolved into places with higher acceptance of same-sex couples, leading to more same-sex couples moving in. Also, people who are willing to live in areas with large numbers of same-sex couples would be more likely to be more accepting of same-sex couples themselves. This would make cities with higher numbers of same-sex couples more accepting of same-sex couples over time than cities with lower numbers of same-sex couples. On the other hand, it could also be the other way around (Brunner and Kuhn, 2018; Colussi et al., 2021). Cities with higher numbers of same-sex couples may have encouraged more backlash and, consequently, less acceptance.

Because of the competing channels discussed, the OLS estimate of β_a^g would capture the net effect, and the expected sign of the bias is theoretically ambiguous. I address these endogeneity concerns by employing a novel instrumental variable.

4.3 Historical evangelical church share

I use the historical number of evangelical churches in each city to instrument the acceptance of same-sex couples in recent years. Specifically, I use the number of evangelical churches per capita in 1952 from The Association of Religions Data Archives.[11] I define evangelical denominations according to the categorization provided by Steensland et al. (2000).[12]

To be a valid instrument, the instrument should first satisfy the relevance condition. The relevance condition in the context of this paper requires that the historical presence of

[11] I use the number of churches rather than the number of members because brick-and-mortar churches can be long-lived compared to church members. Churche buildings outlive the people who live in an area, while people die or move away. Even if there were a small number of members in a church in 1952, since the building could not move, it could have a long-term effect.

[12] There is no strict definition of evangelical churches. However, according to Encyclopædia Britannica, evangelical churches are "Christian churches that stress the preaching of the gospel of Jesus, personal conversion experiences, Scripture as the sole basis for faith, and active evangelism (the winning of personal commitments to Christ)." See Table A.1 for the list of evangelical denominations used in the analysis.

evangelical churches affects the acceptance of same-sex couples today in an area. In recent decades, evangelical churches have been known to have some of the most conservative views on same-sex relationships. The 2018 GSS survey shows that only 32% of people who are members of evangelical churches state that same-sex relationships are not wrong at all, compared to 61% of people who are not members of evangelical churches. In the same survey, 65% of members of Catholic churches state that same-sex relationships are not wrong at all. A literature on American religion suggests the critical role of evangelical churches in transmitting conservative ideology. Churches have effectively propagated religious values and broader moral and political ideas (Wald et al., 1988). Evangelical churches have typically sought greater separation from the broader culture, emphasized missionary activity and individual conversion, and taught strict adherence to particular religious doctrines (Steensland et al., 2000). Therefore, the greater presence of historical evangelical churches may have decreased the acceptance of same-sex couples in a city over time.

Other than the relevance condition, a valid instrument for acceptance of same-sex couples should not affect the location decisions of same-sex couples other than through acceptance. This could be violated if a higher number of churches were correlated with a lower share of same-sex couples in 1952. This is because areas with more same-sex couples could have evolved into areas with a higher acceptance of same-sex couples because of the higher number of same-sex couples and not because of the lower number of churches. Another concern exists if evangelical churches affect unobserved amenities that might impact the location decisions of same-sex couples. I explore these potential threats to the instrument validity in the analysis that follows.

5 Results

In this section, I first discuss the estimates from the conditional logit model, including hometown attachment and mean utilities, δ_j^g. Then I present the results of the two-stage least squares (2SLS) regression of adjusted mean utilities, $\tilde{\delta}_j^g$, on attitudes toward same-sex couples, a_j.

5.1 Conditional logit results

5.1.1 Hometown attachments

Table 2 shows the estimated coefficients of hometown attachment, which represents the value of living in or near one's birthplace. For both same-sex and different-sex couples, the coefficient on individuals' state of birth, γ_{st}, is smaller for college-educated individuals. The coefficient on individuals' census division of birth, γ_{div}, shows a similar pattern, although the estimates are quite similar for same-sex couples with and without college degrees and quite noisy for different-sex couples. Overall, college graduates tend to have lower levels of hometown attachment. Also, same-sex couples are shown to have lower hometown attachment than different-sex couples.

5.1.2 Mean utilities

Figure 3 plots the estimated mean utilities of each city for each group, separately for same-sex and different-sex couples.[13] The dots on the top right of each plot are cities that are relatively preferred or have a larger population of each group, and the dots on the bottom left are cities that are less preferred or have a smaller population of each group.

Although there does not appear to be a large difference between different-sex and same-sex couples in the distribution of mean utilities across cities, one thing is worth noting. The

[13]The mean utilities are relative to Akron, Ohio, where the mean utility is 0 for all four groups. I divided the mean utilities by the standard deviation within each group.

dots are more scattered in the bottom two-thirds for same-sex couples while denser for different-sex couples. On the other hand, in the top third, the two plots show a similar or even denser density for same-sex couples. This shows that cities with a large population of same-sex couples with and without college degrees tend to be equally preferred by both college graduates and non-college graduates. By contrast, for cities with a relatively small population of same-sex couples, same-sex couples with and without college degrees have different opinions about the attractiveness of the cities. In the context of this paper, this may be because cities with large populations often have both a tolerant environment and a high level of local amenities simultaneously. This is not often the case in small cities, which makes the preferences of same-sex couples with and without college degrees appear more distinct from each other.

5.2 Effect of attitudes toward same-sex couples on mean utilities

5.2.1 First stage

Table 3 reports the coefficient estimate from the regression of log acceptance on the historical number of evangelical churches per 10,000 population and other city characteristics.[14] The number of evangelical churches in 1952 is negatively associated with acceptance in 2017. One more evangelical church per 10,000 population in 1952 is associated with 1.5% less acceptance of same-sex couples in 2017. The first stage F-statistic associated with the hypothesis that the instrument is unrelated to the endogenous regressor is 38.32. The Kleibergen-Paap LM test strongly rejects the null hypothesis that the equation is under-identified.

[14] See Table A.2 in the Appendix for results for control variables.

5.2.2 2SLS results

Table 4 shows the results of the OLS and 2SLS regressions. In panel A, I report the results for same-sex couples. In column (1), the OLS specification finds that doubling a_j increases the mean utility of college-educated same-sex couples by 2.227. The IV specification in column (2) shows a slightly larger coefficient on acceptance of 3.099. Although the point estimate of the IV specification is slightly larger, there is no significant difference between the OLS and IV estimates. This could be due to an offset of the competing biases discussed in Section 4.2. Using the estimate of coefficient on log wage of 2.116 for college graduates from Diamond (2016) that is used to obtain adjusted mean utility, the IV estimate indicates that same-sex couples are willing to give up 1.46% of their wages for 1% higher acceptance.

Columns (3) and (4) in Panel A show the results for same-sex couples without a college degree. Although the signs are different, both the OLS and IV estimates are not statistically significant. Panel B shows the results for different-sex couples. Although the signs are positive for different-sex couples with college degrees and negative for those without, all the OLS and IV estimates, both for college and non-college, are noisy and not statistically significant.

Overall, my results show that acceptance has a positive effect in attracting college-educated same-sex couples and no significant effect for same-sex couples without college degrees and different-sex couples with and without college degrees. As noted in Section 2, this could be because college-educated same-sex couples are more sensitive to acceptance. This is consistent with Diamond (2016), who finds that college workers are more sensitive to the general amenity level than non-college workers. The results imply higher educational sorting among same-sex couples across cities due to varying acceptance levels in different cities.

5.2.3 Counterfacual distribution of college-educated same-sex couples

One way to understand the effect is to think about a counterfactual situation where the acceptance is equal across cities and how this would change the distribution of individuals according to the estimate. To show the effect of acceptance on sorting, I calculate the share of college-educated same-sex couples among all cohabiting couples in a counterfactual scenario where acceptance is at the empirical mean level in all cities. Figure 4 compares the counterfactuals to the actual shares. The red line is a 45-degree line. Cities above the red line have higher same-sex college shares in the counterfactual, and those below have lower shares in the counterfactual. Cities with relatively high acceptance, such as San Francisco or Portland, lose some college share in the counterfactual. On the other hand, cities with relatively low acceptance, such as Memphis or Houston, have a higher college shares in the counterfactual.

Many Southern states spend millions on advertising to attract high-skilled workers (Moretti and Wilson, 2017), while they may be losing college-educated people due to their less accepting culture. A Democratic city councilman noted after Indiana Governor signed a controversial anti-LGBTQ bill, "Indiana is losing jobs and young professionals like crazy. How much more can our state government make Indiana uninviting" (Eason, 2015). The counterfactual analysis suggests that having higher acceptance will allow cities with currently lower acceptance to attract college-educated people, potentially increasing productivity.

5.2.4 Welfare implication

One question related to acceptance would be how it affects the welfare of individuals who care about acceptance. I provide an implication for the welfare of an individual in terms of wages, S_i, from the increase in acceptance.

Under the logit assumptions, the expected welfare associated with the cities in the

choice set takes a closed form and can be calculated as follows (Williams, 1977; Small and Rosen, 1981):

$$E(S_i) = \frac{1}{\beta_w^g} \ln\left(\sum_j e^{\delta_j}\right) + C,$$

where C is an unknown constant representing the absolute level of utility. Then, the change in welfare from 1% increase in a_j in every city is

$$\Delta E(S_i) = \frac{1}{\beta_w^g}\left[\ln\left(\sum_j e^{(\delta_j + 0.01\beta_a^g)}\right) - \ln\left(\sum_j e^{\delta_j}\right)\right].$$

Using β_w^g = 2.116 for college-educated individuals as in Equation (3), the estimated change in welfare from a 1% increase in a_j is about a 1.5% increase in wage.

5.3 Probing instrument validity

5.3.1 Historical share of same-sex couples and number of churches

As mentioned in Section 4.3, a historical correlation between the number of churches and the share of same-sex couples could threaten the instrument's validity. If cities with a lower number of churches in 1952 had a higher share of same-sex couples, to begin with, then the subsequent change in acceptance would not necessarily be due to the evangelical churches in the city, but could be explained by the influence of a higher proportion of same-sex couples. Because there is no reliable data on the share of same-sex couples in 1952, it is not possible to check whether there was a significant relationship between these two in the historical period.[15]

[15] Table A.3 in the appendix shows no correlation between evangelical churches and same-sex cohabiting partners/friends. However, because "partner" in the 1940 Census refers to any non-relative who shares the home and expenses with the household head, including responses such as co-head and business partner, it is difficult to conclude that there was no correlation between evangelical churches and the share of same-sex couples from the results alone.

However, one question that could provide an indirect implication for the relationship is when evangelical churches began to become politicized and vocal in their opposition to same-sex relationships. Evangelical churches began to be politicized on the right in the second half of the 20th century (Bazzi et al., 2023). For example, members of evangelical churches received almost no church teaching on abortion issues in the 1950s and 1960s (Rosen, 1967). Similarly, the antigay movement in evangelical churches began in the late 1970s (Williams, 2015). The issues at the center of the politicization of evangelical churches have varied over time, and the issue of same-sex couples was not one of them until the last few decades. Figure 5 shows the change over time in the percentage who think same-sex relationships are not wrong among members of evangelical churches and among non-evangelicals. The oldest GSS survey, in 1973, shows very low levels of acceptance of same-sex couples among both evangelicals and non-evangelicals. Although there was a difference between evangelicals and non-evangelicals, this difference may have had a negligible effect on the location choices of same-sex couples since the general attitude toward same-sex couples across the country was very negative regardless of religion.

The earliest year for which I can observe a reliable estimate of the share of same-sex couples for each city is 2000. Table 5 shows the results of the regression of the share of same-sex couples on the historical number of evangelical churches per capita and other city characteristics. Interestingly, even as late as 2000, there was no discernible correlation between the historical number of evangelical churches and the share of same-sex couples. In contrast, there is a clear negative relationship between the number of churches and the share of same-sex couples in 2017. This lack of correlation in 2000 could be due to the relatively recent change in societal attitudes toward same-sex couples. As shown in Figure 5, although there has been a difference between evangelicals and non-evangelicals, the dominant public opinion on same-sex relationships has been against them until recently. Notably, evangelical churches have become more vocal in their opposition to same-sex

relationships in response to this evolving public opinion in recent decades. It may be that until about 2000, same-sex couples did not feel particularly unaccepted by members of evangelical churches since they were not accepted by majorities.

5.3.2 Other influence of evangelical churches

Apart from the historical correlation between evangelical churches and the share of same-sex couples, there is a valid concern that evangelical churches may have influenced various local amenities, thereby impacting location choices through these amenities instead of solely through their effects on acceptance. This could potentially threaten the validity of the instrument if the controls do not fully capture some of these amenities in the IV specification.

To see the correlation between churches and other amenities, I run a set of regressions of amenities on evangelical churches in 1952, controlling for city characteristics as in the IV specification. Figure 6 shows the coefficients on the churches in each amenity regression, where amenities have been normalized to have a standard deviation of one.[16] Historical churches are positively correlated with employment rates and negatively correlated with restaurants and bars per capita.

I add these correlated amenities as controls to the 2SLS regression of mean utilities of college-educated same-sex couples and see how the coefficient on churches changes. Column (1) in Table 6 reproduces column (2) of Panel A in Table 4. Column (2) shows that the estimated coefficient of acceptance remains relatively stable after adding the amenities. In column (3), I also control for the percentage of same-sex couples in each city in 2000 to control for other potential amenities that same-sex couples may prefer. Again, the coefficient remains stable. The results suggest that while there can be unobserved amenities correlated with churches that could affect the location choices of same-sex

[16] See Table A.4 in the Appendix for the full regression results corresponding to the figure.

couples, the controls in the main specification capture various amenities quite well. This could be because I control for amenities using average demographic characteristics of each city, and average values of demographic characteristics differ across cities mainly because individuals with different characteristics value city amenities differently (Altonji and Mansfield, 2018).

In addition, the two aforementioned facts may alleviate some of the lingering concerns about unobserved amenities. First, evangelical churches began to diverge from the dominant public opinion in the 1990s. Second, there was no correlation between the number of evangelical churches and the concentration of same-sex couples even until 2000. These two facts provide supporting evidence that evangelical churches had a limited impact on the location choices of same-sex couples through other amenities.

6 Evidence from migration flows

In this section, I provide further evidence of selective migration regarding the acceptance of same-sex couples by looking directly at one-year migration decisions. I use the stacked cross-section ACS 1% samples from 2005 to 2019. Although the sample is cross-sectional, respondents are asked where they lived one year ago. Individuals living in a different MSA of residence than one year ago are considered to have migrated. Using the sample of partnered individuals aged 25 to 55, I run the following regression of acceptance of same-sex couples:

$$\begin{aligned} a_{idt} - a_{iot} = \beta_1 College_{it} + \beta_2\, Samesex_{it} + \beta_3\, College_{it} \times Samesex_{it} \\ + X_{it}\gamma + Z_{dt}\delta + \mu_{ot} + \varepsilon_{idot} \end{aligned}$$

where the dependent variable is a difference in acceptance between the destination d and origin o of individual i in year t. Individuals who have not moved within the last 12

months have a difference of 0. The variables *College* and *Samesex* are dummies for college degree and same-sex relationship, respectively. The interaction term between college and same-sex relationship dummies, which is the variable of interest, is also included in the regression. X_{it} is a vector of individual-level controls including income, sex, age, age squared, race, presence of child, and years in the U.S. Z_{dt} is a vector of MSA characteristics including total population, percentage college-educated, and average income. Origin-year fixed effects, μ_{ot}, are included to capture the time trend specific to individuals from each origin. Standard errors are clustered at the origin-year level.

The first column in Table 7 shows the regression results without including destination characteristics. The coefficients are small overall since the sample includes people who did not move within the past 12 months, which is more than 95% of the sample.[17] The coefficient on the college degree dummy indicates that individuals in a different-sex relationship with a college degree move to MSAs that are 0.044 pp more accepting than their counterparts without a college degree. Same-sex couples without a college degree go to MSAs with acceptance 0.038 pp higher than different-sex couples without a college degree. Same-sex couples with a college degree move to MSAs with acceptance of 0.099 pp (0.044 pp + 0.045 pp) higher than their counterparts without a college degree. However, these coefficients may capture many different MSA characteristics other than preferences for acceptance of same-sex couples. MSAs with more individuals who prefer liberal or progressive values are more likely to have higher local amenities and better labor market situations because college-educated individuals are known to have stronger preferences for liberal and progressive values (Downey and Liu, 2023), and they also have stronger preferences for consumption amenities and value greater labor market opportunities (Chen and Rosenthal, 2008).

[17] See Table A.5 for the results for the sample of people who have moved from one MSA to another within the last 12 months. Looking at the whole sample gives an idea of the overall migration decision, including the decision not to move, while looking at the sample of movers shows where they end up moving when they do decide to move.

The second column mitigates this concern by including destination characteristics of the total population, the percentage of college graduates, and the average income level that can explain consumption amenities and labor market opportunities. The coefficient on the college degree dummy decreases significantly, suggesting that the included destination characteristics do a good job of controlling for consumption amenities and labor market opportunities. The coefficient on the same-sex dummy decreases in magnitude as well. This is consistent with results from Black et al. (2002), who argue that the concentrations of same-sex couples in high amenity cities are due to their higher demand for consumption amenities resulting from the difference in family formation of same-sex couples. They find that the importance of "gay friendliness" decreases or loses significance when controlling for other local amenities. However, the coefficient on the interaction term does not change much even when the destination controls are added. The coefficient indicates that college-educated same-sex couples move to MSAs with 0.053 pp higher acceptance than their non-college-educated counterparts.

In Column (3), I add the percentage of same-sex couples in the destination to account for the preference of same-sex couples to live near other same-sex couples. Adding the percentage of same-sex couples in the destination makes little difference to the college dummy and the interaction term. However, it makes the same-sex dummy statistically insignificant. This reflects the correlation between acceptance of same-sex couples and the share of same-sex couples. It also shows a difference in migration decisions between same-sex couples with and without college degrees.

Overall, the results show a sorting of individuals in same-sex relationships across MSAs by educational attainment. Same-sex couples with college degrees are more likely to move to more accepting MSAs than their counterparts without college degrees. Consistent with the literature showing preferences for progressive and liberal values among college-educated people (Downey and Liu, 2023), different-sex couples with college degrees are

also more likely to move to MSAs with higher acceptance. However, the difference is smaller for different-sex couples than for same-sex couples.

7 Conclusion

Acceptance of same-sex couples is one of the most important factors in the location choice of same-sex couples. This paper shows that acceptance indeed matters for same-sex couples, especially for those with college degrees, in their decision on where to live, resulting in the educational sorting of same-sex couples across metropolitan areas.

Further, the results presented in this paper could have significant implications for policymakers. Creating a more welcoming environment for individuals with non-normative sexual orientation can potentially increase the education level in an area both directly because of the inflow of same-sex couples with college degrees and also indirectly because higher concentrations of same-sex couples signal progressive values, which can be a pull factor for college-educated people.

A Appendix

A.1 Same-sex partners in the Census (based on Goodnature and Neto (2021))

Beginning with the 1990 Decennial Census, respondents were able to choose "unmarried partner" as a response option to describe how they are related to their household head. In 1990, same-sex marriages were not allowed so an edit was necessary for responses that said that the head of the household lived with their same-sex spouse. If the same-sex married couple's marital status indicated that they were "currently married" then the Census edited the sex of the spouse to make the couple an opposite-sex married couple. As the Census considered this a "logical edit," the Census does not flag these allocations.

While the 1990 Census changed the sex to record same-sex married couple households as opposite-sex married households, the 2000 Census changed the relationship to the household head, so that these households are recorded as same-sex unmarried partners. Again, the Census considers this a "logical edit" so the Census does not flag these allocations (Black et al., 2007).

The ACS used the 2000 Census method to deal with same-sex married couples until 2013. The ACS in 2013 and later finally allowed same-sex married couples to be recorded as same-sex married couples.

References

Albouy, D. (2016). What are cities worth? land rents, local productivity, and the total value of amenities. *Review of Economics and Statistics*, *98*(3), 477–487.

Albouy, D., Cho, H., and Shappo, M. (2021). Immigration and the pursuit of amenities. *Journal of Regional Science*, *61*(1), 5–29.

Albouy, D., and Stuart, B. A. (2020). Urban population and amenities: The neoclassical model of location. *International economic review*, *61*(1), 127–158.

Altonji, J. G., and Mansfield, R. K. (2018). Estimating group effects using averages of observables to control for sorting on unobservables: School and neighborhood effects. *American Economic Review*, *108*(10), 2902–46.

Badgett, M., Carpenter, C. S., and Sansone, D. (2021). Lgbtq economics. *Journal of Economic Perspectives*, *35*(2), 141–70.

Bartels, L. M. (2002). Beyond the running tally: Partisan bias in political perceptions. *Political behavior*, *24*, 117–150.

Bazzi, S., Ferrara, A., Fiszbein, M., Pearson, T., and Testa, P. A. (2023). The other great migration: Southern whites and the new right. *The Quarterly Journal of Economics*, *138*(3), 1577–1647.

Berry, S., Levinsohn, J., and Pakes, A. (1995). to econometrica. *Econometrica*, *63*(4), 841–890.

Berry, S., Levinsohn, J., and Pakes, A. (2004). Differentiated products demand systems from a combination of micro and macro data: The new car market. *Journal of political Economy*, *112*(1), 68–105.

Black, D., Gates, G., Sanders, S., and Taylor, L. (2002). Why do gay men live in san francisco? *Journal of Urban Economics*, *51*(1), 54–76.

Black, D. A., Sanders, S. G., and Taylor, L. J. (2007). The economics of lesbian and gay families. *Journal of economic perspectives*, *21*(2), 53–70.

Brown, J. R., Cantoni, E., Enos, R. D., Pons, V., and Sartre, E. (2022). The increase in partisan segregation in the united states.

Brunner, B., and Kuhn, A. (2018). Immigration, cultural distance and natives' attitudes towards immigrants: Evidence from swiss voting results. *Kyklos*, *71*(1), 28–58.

Carlino, G. A., and Saiz, A. (2019). Beautiful city: Leisure amenities and urban growth. *Journal of Regional Science*, *59*(3), 369–408.

Chen, Y., and Rosenthal, S. S. (2008). Local amenities and life-cycle migration: Do people move for jobs or fun? *Journal of Urban Economics*, *64*(3), 519–537.

Colussi, T., Isphording, I. E., and Pestel, N. (2021). Minority salience and political extremism. *American Economic Journal: Applied Economics*, *13*(3), 237–271.

Couture, V., and Handbury, J. (2020). Urban revival in america. *Journal of Urban Economics*, *119*, 103267.

Diamond, R. (2016). The determinants and welfare implications of us workers' diverging location choices by skill: 1980–2000. *American Economic Review*, *106*(3), 479–524.

Diamond, R., and Gaubert, C. (2022). Spatial sorting and inequality. *Annual Review of Economics*, *14*, 795–819.

Downey, M., and Liu, J. (2023). Political preferences and migration of college educated workers. *Working paper*.

Eason, B. (2015). Ballard, council to legislature: Repeal law, protect lgbt from discrimination. *The Indianapolis Star*.

Glaeser, E. L., Kallal, H. D., Scheinkman, J. A., and Shleifer, A. (1992). Growth in cities. *Journal of political economy*, *100*(6), 1126–1152.

Goodnature, M., and Neto, A. B. F. (2021). Same-sex unmarried partners in the census. *Journal of Regional Analysis & Policy*, *51*(1), 43–66.

Goren, P., and Chapp, C. (2017). Moral power: How public opinion on culture war issues shapes partisan predispositions and religious orientations. *American Political Science Review*, *111*(1), 110–128.

Hastie, T., Tibshirani, R., and Wainwright, M. (2015). *Statistical learning with sparsity: the lasso and generalizations*. CRC press.

Kaplan, E., Spenkuch, J. L., and Sullivan, R. (2022). Partisan spatial sorting in the united states: A theoretical and empirical overview. *Journal of Public Economics*, *211*, 104668.

Leguizamon, J. S., and Leguizamon, S. (2017). Disentangling the effect of tolerance on housing values: how levels of human capital and race alter this link within the metropolitan area. *The Annals of Regional Science*, *59*(2), 371–392.

Levendusky, M. (2009). *The partisan sort: How liberals became Democrats and conservatives became Republicans*. University of Chicago Press.

McFadden, D., et al. (1973). Conditional logit analysis of qualitative choice behavior.

Moreno-Maldonado, A., and Santamaria, C. (2021). Delayed childbearing and urban revival.

Moretti, E. (2004). Workers' education, spillovers, and productivity: evidence from plant-level production functions. *American Economic Review*, *94*(3), 656–690.

Moretti, E. (2012). *The new geography of jobs*. Houghton Mifflin Harcourt.

Moretti, E., and Wilson, D. J. (2017). The effect of state taxes on the geographical location of top earners: Evidence from star scientists. *American Economic Review*, *107*(7), 1858–1903.

Nevo, A. (2001). Measuring market power in the ready-to-eat cereal industry. *Econometrica*, *69*(2), 307–342.

Rosen, H. (1967). Abortion in america: medical, psychiatric, legal, anthropological, and religious considerations.

Rosenthal, S. S., and Strange, W. C. (2003). Geography, industrial organization, and agglomeration. *review of Economics and Statistics*, *85*(2), 377–393.

Rosenthal, S. S., and Strange, W. C. (2008). The attenuation of human capital spillovers. *Journal of Urban Economics*, *64*(2), 373–389.

Small, K. A., and Rosen, H. S. (1981). Applied welfare economics with discrete choice models. *Econometrica: Journal of the Econometric Society*, (pp. 105–130).

Steensland, B., Robinson, L. D., Wilcox, W. B., Park, J. Z., Regnerus, M. D., and Woodberry, R. D. (2000). The measure of american religion: Toward improving the state of the art. *Social forces*, *79*(1), 291–318.

Tao, J., Ho, C.-Y., Luo, S., and Sheng, Y. (2019). Agglomeration economies in creative industries. *Regional Science and Urban Economics*, *77*, 141–154.

Tibshirani, R. (1996). Regression shrinkage and selection via the lasso. *Journal of the Royal Statistical Society Series B: Statistical Methodology*, *58*(1), 267–288.

Wald, K. D., Owen, D. E., and Hill, S. S. (1988). Churches as political communities. *American political science review*, *82*(2), 531–548.

Wilcox, C. (2018). *Onward Christian soldiers?: the religious right in American politics*. Routledge.

Williams, D. K. (2015). The partisan trajectory of the american pro-life movement: How a liberal catholic campaign became a conservative evangelical cause. *Religions*, *6*(2), 451–475.

Williams, H. C. (1977). On the formation of travel demand models and economic evaluation measures of user benefit. *Environment and planning A*, *9*(3), 285–344.

Figure 1: Relationship between wage, amenities, and utility

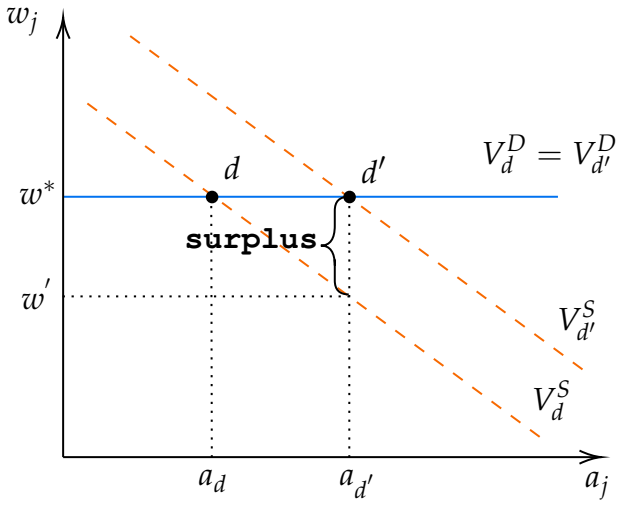
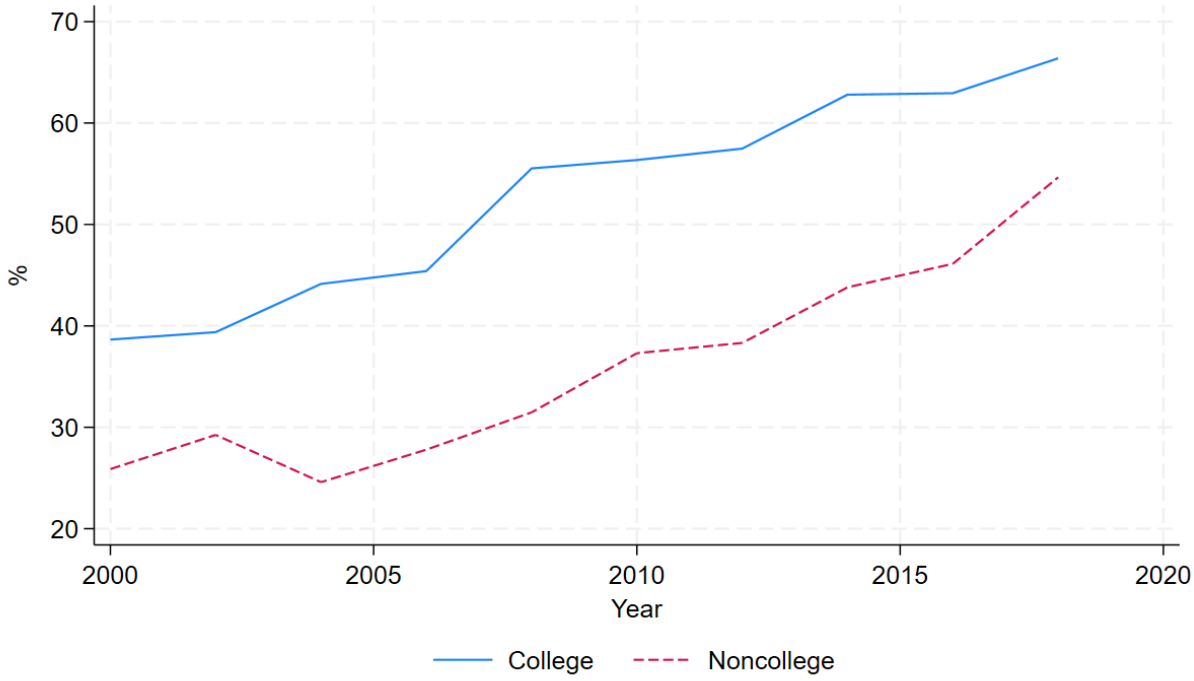
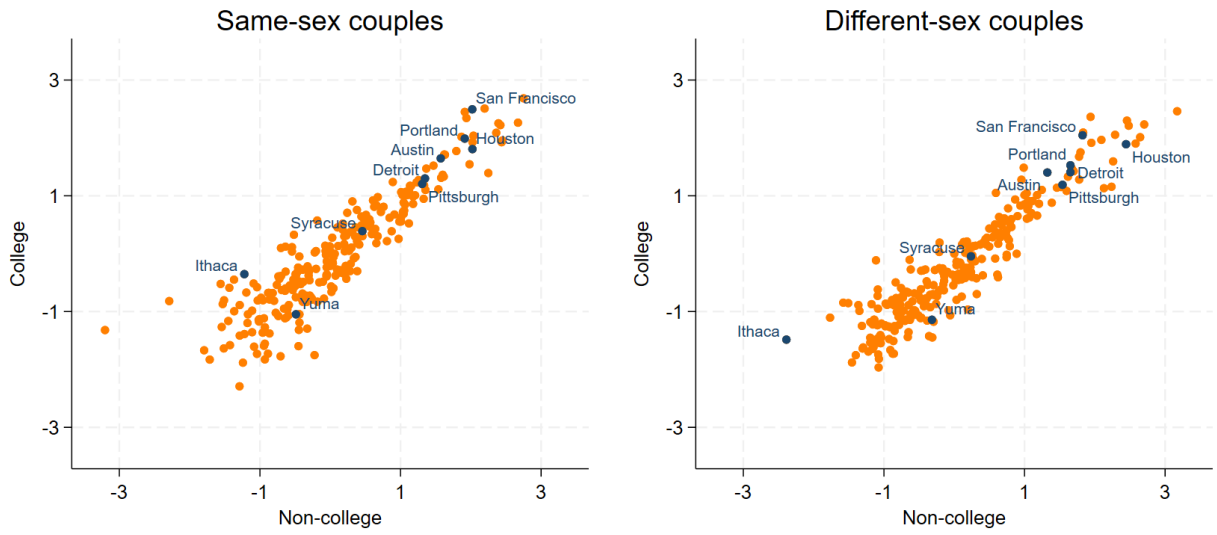


Figure 2: Percentage who believe same-sex relationships are not wrong by education



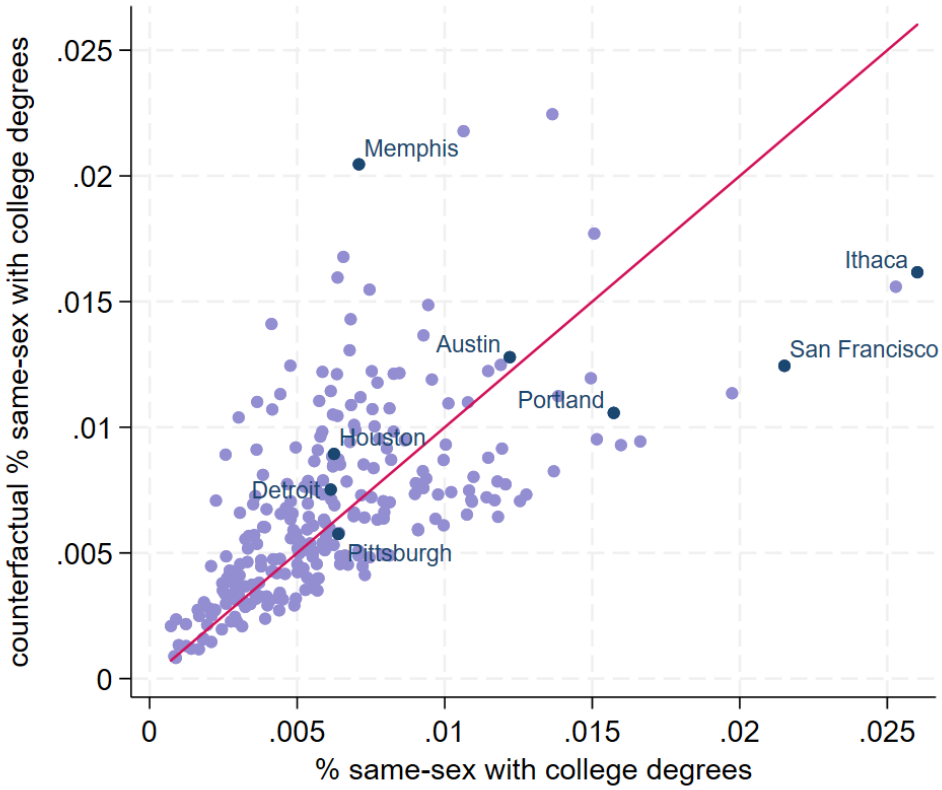
Note: Respondents are asked what they think about same-sex relationships: 1) always wrong, 2) almost always wrong, 3) wrong only sometimes, 4) not wrong at all.
Source: General Social Survey, 2000-2018.

Figure 3: Mean utilities of each city from conditional logit



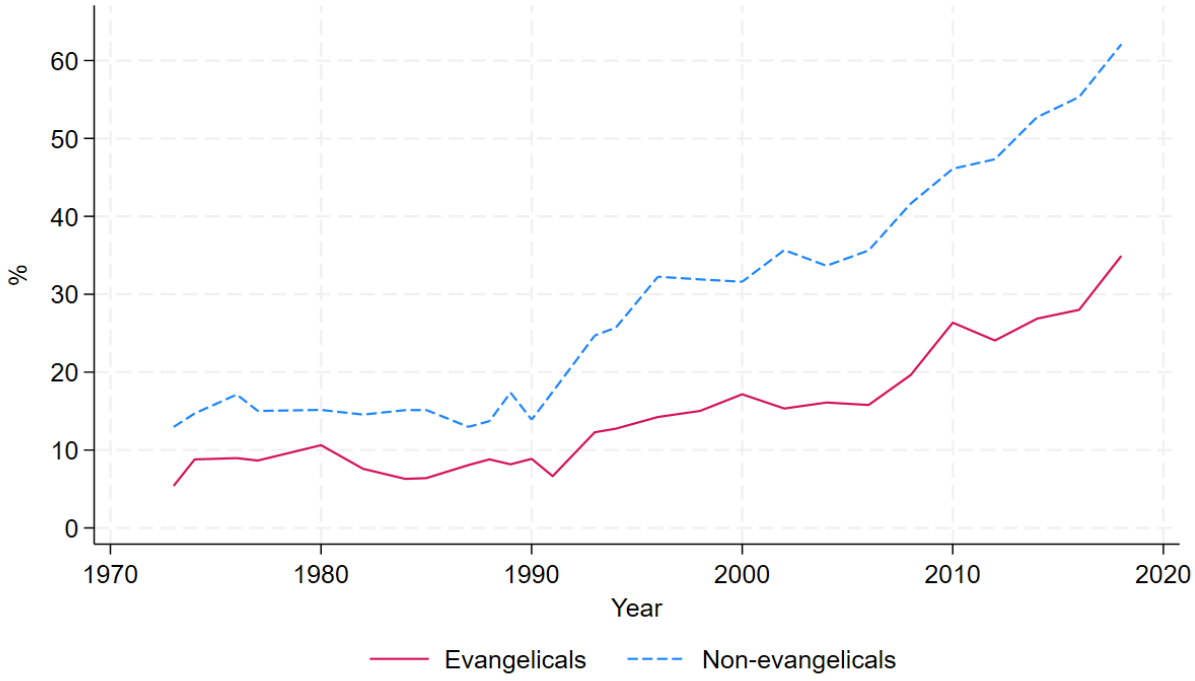
Note: (a) The figures plot the estimated mean utilities from the conditional logit model in Section 4.1. (b) The mean utilities are relative to Akron, Ohio, where the mean utility is 0 for all four groups (c) Mean utilities have been divided by the standard deviation within each group. (d) Each dot represents one city.
Source: ACS 2015-2019 5-year pooled file.

Figure 4: Counterfactual share of college-educated same-sex couples among total cohabiting couples



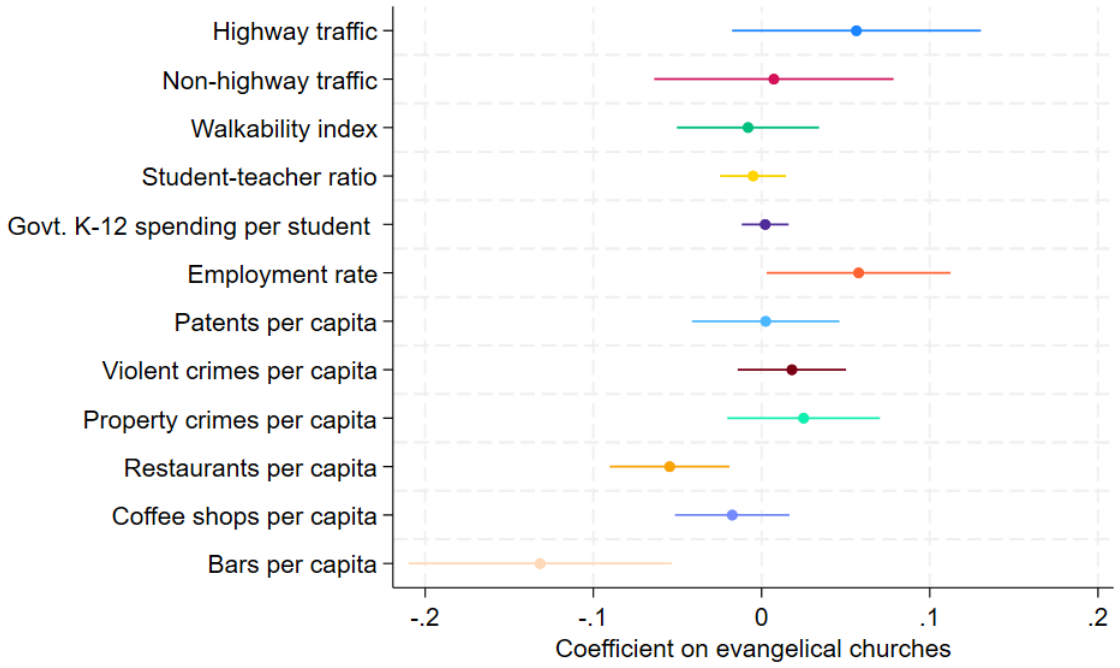
Note: (a) This figure plots the counterfactual share of college-educated same-sex couples out of total cohabiting couples against the actual share, given the IV estimate on acceptance from Section 5.2.2. (b) The counterfactual situation is where the level of acceptance is the same across cities at the mean level.
Source: ACS 2015-2019 5-year pooled file, 2018 GSS, 2016 presidential election results.

Figure 5: Percentage who believe same-sex relationships are not wrong



Notes: (a) Respondents are asked what they think about same-sex relationships: 1) always wrong, 2) almost always wrong, 3) wrong only sometimes, 4) not wrong at all. (b) Evangelical denominations are defined based on Steensland et al. (2000).
Source: General Social Survey, 1973-2018.

Figure 6: Correlation between 2017 amenities and 1952 evangelical churches



Note: (a) Evangelical denominations are defined based on Steensland et al. (2000). (b) Amenities have been normalized to have a standard deviation of one.
Source: ACS, ARDA, FBI, EPA, NaNDA, USPTO, US Census Bureau.

Table 1: Top and bottom 15 a_j locations

Top 15		Bottom 15	
Burlington-South Burlington, VT	0.781	Jackson, TN	0.448
Pittsfield, MA	0.771	Jackson, MS	0.449
San Jose-Sunnyvale-Santa Clara, CA	0.770	Montgomery, AL	0.450
Boston-Cambridge-Newton, MA-NH	0.769	Anniston-Oxford-Jacksonville, AL	0.458
Santa Cruz-Watsonville, CA	0.765	Mobile, AL	0.463
Santa Fe, NM	0.765	Gadsden, AL	0.467
San Francisco-Oakland-Hayward, CA	0.763	Memphis, TN-MS-AR	0.468
Portland-South Portland, ME	0.761	Decatur, AL	0.479
Flagstaff, AZ	0.755	Birmingham-Hoover, AL	0.479
Springfield, MA	0.751	Gulfport-Biloxi-Pascagoula, MS	0.481
Bridgeport-Stamford-Norwalk, CT	0.751	Shreveport-Bossier city, LA	0.482
Worcester, MA-CT	0.749	Tuscaloosa, AL	0.482
Providence-Warwick, RI-MA	0.749	Monroe, LA	0.484
El Centro, CA	0.748	Daphne-Fairhope-Foley, AL	0.484
Manchester-Nashua, NH	0.746	Rocky Mount, NC	0.503

Note: a_j is the percentage who state "Same-sex relationship is not wrong at all" in each city, estimated according to the post-LASSO procedure specified in Section 3.2.
Source: 2018 GSS, ACS 2015-2019 5-year pooled data, and Democratic vote share from the 2016 presidential election.

Table 2: Conditional logit results: Estimates of hometown attachment

	(1)	(2)	(3)	(4)
	Same-sex		Different-sex	
	College	No college	College	No college
γ_{st}	2.13***	2.84***	2.57***	3.27***
	(0.31)	(0.35)	(0.48)	(0.72)
γ_{div}	0.84***	0.91***	0.95*	1.00
	(0.17)	(0.27)	(0.38)	(0.63)

Note: Estimates from the conditional logit model in Section 4.1.
Standard errors are clustered at the city level.
Source: ACS 2015-2019 5-year pooled file.

Table 3: First stage: Acceptance and number of evangelical churches

Dependent variable: Log acceptance (log a_j)	
Number of evangelical churches, 1952	-0.015***
(per 10,000 population)	(0.002)
Other city characteristics	✓
Observations	223
Adj. R^2	0.7610
First stage F-statistic	38.32
Kleibergen-Paap LM, p-value	0.001

Note: (a) The dependent variable is the log estimated percentage of people who think same-sex relationships are not wrong. (b) The unit of evangelical churches is per 10,000 population. (c) Evangelical denominations are defined based on Steensland et al. (2000). (d) Other city characteristics include log population, percentage of college-educated people, percentage working full-time, average age, percentage of people having children, racial composition, and percentage of people born in the U.S. (See Table A.2 in the Appendix for results for these variables.) (e) The first stage F-statistic is to test the hypothesis that the instrument is unrelated to the endogenous regressor. (f) Kleibergen-Paap LM p-value corresponds to the Kleibergen-Paap LM test whose null hypothesis is that the equation is underidentified. Standard errors are clustered at the state level. *** $p < 0.01$
Source: ACS 2015-2019 5-year pooled file, 2018 GSS, 2016 presidential election results.

Table 4: Mean utilities and acceptance of same-sex couples

Panel A: Same-sex couples

Dependent variable: Adjusted mean utility ($\tilde{\delta}_j^g$)				
	(1)	(2)	(3)	(4)
	College		No college	
	OLS	IV	OLS	IV
Log acceptance (log a_j)	2.227***	3.099**	0.872	-0.583
	(0.593)	(1.540)	(0.900)	(1.856)
Other city characteristics	✓	✓	✓	✓
Observations	223	223	223	223

Panel B: Different-sex couples

Dependent variable: Adjusted mean utility ($\tilde{\delta}_j^g$)				
	(1)	(2)	(3)	(4)
	College		No college	
	OLS	IV	OLS	IV
Log acceptance (log a_j)	0.330	0.572	-0.195	-1.537
	(0.461)	(1.344)	(0.796)	(1.748)
Other city characteristics	✓	✓	✓	✓
Observations	223	223	223	223

Note: (a) The dependent variable is the adjusted mean utility from the conditional logit model in Section 4.1. (b) a_j is the estimated percentage of people who think same-sex relationships are not wrong.
(c) Other city characteristics include log population, percentage of college-educated people, percentage working full-time, average age, percentage of people having children, racial composition, and percentage of people born in the U.S. Standard errors are clustered at the state level. ** $p < 0.05$, *** $p < 0.01$
Source: ACS 2015-2019 5-year pooled file, 2018 GSS, 2016 presidential election results.

Table 5: Evangelical churches and share of same-sex couples

Dependent variable: Share of same-sex couples in a city		
	(1) 2000	(2) 2017
Evangelical churches per capita, 1952	0.030 (0.047)	-0.127** (0.056)
Census division FE	✓	✓
Other city characteristics	✓	✓
Observations	223	223
Adj. R^2	0.4439	0.4790

Note: (a) The unit of evangelical churches is per 10,000 population. Evangelical denominations are defined based on Steensland et al. (2000). (b) Other city characteristics include log population, percentage of college-educated people, percentage working full-time, average age, percentage of people having children, racial composition, percentage of people born in the U.S., log average rent, and log average wage. Standard errors are clustered at the state level. ** $p < 0.05$
Source: ACS 2015-2019 5-year pooled file.

Table 6: Robustness to adding amenities correlated with evangelical churches

Dependent variable: Adjusted mean utility ($\tilde{\delta}_j^g$) of college-educated same-sex couples			
	(1)	(2)	(3)
Log acceptance (log a_j)	3.099** (1.540)	3.398** (1.510)	3.231** (1.358)
Employment rate		-0.009 (0.010)	-0.010 (0.009)
Restaurants per capita		0.806*** (0.289)	0.724** (0.292)
Bars per capita		-0.211 (0.600)	0.190 (0.571)
% same-sex couples, 2000			0.137*** (0.041)
Other city characteristics	✓	✓	✓
Observations	223	221	221
First stage F-statistic	38.32	54.98	56.84
Kleibergen-Paap LM, p-value	0.001	0.000	0.000

Note: (a) Other city characteristics include log population, percentage of college-educated people, percentage working full-time, average age, percentage of people having children, racial composition, and percentage of people born in the U.S. (b) The first stage F-statistic is to test the hypothesis that the instrument is unrelated to the endogenous regressor. (c) Kleibergen-Paap LM p-value corresponds to the Kleibergen-Paap LM test whose null hypothesis is that the equation is underidentified. Standard errors are clustered at the state level. ** $p < 0.05$
Source: ACS 2015-2019 5-year pooled file, 2018 GSS, 2016 presidential election results.

Table 7: Regression of difference in same-sex acceptance between destination and origin

Dependent variable: Δ % Same-sex acceptance ($a_{idt} - a_{iot}$)			
	(1)	(2)	(3)
College degree	0.044***	0.008***	0.009***
	(0.003)	(0.003)	(0.003)
Same-sex relationship	0.038***	0.024**	0.004
	(0.011)	(0.011)	(0.010)
College $\times$ Same-sex relationship	0.045***	0.045***	0.041***
	(0.017)	(0.016)	(0.016)
Origin-year fixed effects (μ_{ot})	✓	✓	✓
Individual level controls (X_{it})	✓	✓	✓
Destination characteristics (Z_{dt})		✓	✓
% same-sex couples in destination			✓
Observations	8461781	8461781	8461781
Adj. R^2	0.0324	0.1649	0.1876

Note: (a) The sample is restricted to partnered people aged 25 to 55. (b) Individual level controls include income, sex, age, age squared, race, presence of child, years in the U.S. (c) Destination city characteristics include total population, percentage of college-educated, and average income. Standard errors are clustered at the origin-year level. ** $p < 0.05$, *** $p < 0.01$
Source: ACS 2005-2019.

Table A.1: Denominations categorized as evangelical

American Baptist Convention
Lutheran Church - Missouri Synod
Southern Baptist Convention
Wisconsin Evangelical Lutheran Synod
Advent Christian Church
Amish
Apostolic Christian
Assembly of God
Brethren Church, Brethren
Brethren, Plymouth
Christian Reformed
Churches of God (Except with Christ and Holiness)
Church of Christ
Church of God of Prophecy
Evangelical Congregational
Evangelical Free Church
Evangelical United Brethren
Four Square Gospel
Free Methodist
Mennonite
Mennonite Brethren
Missionary Church
Mission Covenant
Nazarene
Open Bible
Pentecostal Church of God
Pentecostal
Pilgrim Holiness
Seventh Day Adventist
Wesleyan

Note: The selection of evangelical denominations followed the categorization provided by Steensland et al. (2000).

Table A.2: First stage: Acceptance and number of evangelical churches

Dependent variable: Log acceptance (log a_j)	
Number of evangelical churches, 1952	-0.015***
(per 10,000 population)	(0.002)
log (population)	-0.014**
	(0.006)
% college	0.057***
	(0.018)
% working fulltime	-0.033
	(0.032)
% Black	-0.078***
	(0.010)
% Hispanic	-0.013
	(0.017)
% Asian	-0.004
	(0.021)
% Having children	0.021
	(0.037)
average age	-0.003
	(0.003)
% born in the US	-0.060**
	(0.028)
Observations	223
Adj. R^2	0.7610
First stage F-statistic	38.32
Kleibergen-Paap LM, p-value	0.001

Note: (a) The dependent variable is the log estimated percentage of people who think same-sex relationships are not wrong. (b) The unit of evangelical churches is per 10,000 population. (c) Evangelical denominations are defined based on Steensland et al. (2000). (d) The first stage F-statistic is to test the hypothesis that the instrument is unrelated to the endogenous regressor. (e) Kleibergen-Paap LM p-value corresponds to the Kleibergen-Paap LM test whose null hypothesis is that the equation is underidentified. Standard errors are clustered at the state level. *** $p < 0.01$
Source: ACS 2015-2019 5-year pooled file, 2018 GSS, 2016 presidential election results.

Table A.3: Evangelical churches and share of same-sex cohabiting partner/friends in 1940

Dependent variable:	Share of same-sex cohabiting partners/friends/roommates (1940)	
	(1)	(2)
Evangelical churches per capita, 1952	-0.0004	-0.0006
	(0.014)	(0.011)
Household size		-0.420***
		(0.078)
Census division FE	✓	✓
Other county characteristics	✓	✓
Number of counties	3068	3068
Adj. R^2	0.3142	0.3544

Note: Evangelical denominations are defined based on Steensland et al. (2000). Standard errors are clustered at the state level.
*** $p < 0.01$
Source: Full count 1940 U.S. Census.

Table A.4: Correlation between 2017 amenities and 1952 evangelical churches

	(1) Highway traffic	(2) Non-highway traffic	(3) Walkability	(4) Student -teacher ratio	(5) Govt. K-12 spending per student	(6) Employment rate	(7) Violent Patents per capita	(8) Property crimes per capita	(9) crimes per capita	(10) Restaurants per capita	(11) Coffee shops per capita	(12) Bars per capita
Evangelical churches	0.056	0.007	-0.008	-0.005	0.002	0.058**	0.002	0.018	0.025	-0.055***	-0.017	-0.132***
per capita, 1952	(0.037)	(0.035)	(0.021)	(0.010)	(0.007)	(0.027)	(0.022)	(0.016)	(0.022)	(0.018)	(0.017)	(0.039)
log (population)	0.054	0.198**	0.214***	-0.004	0.173	0.006	-0.256***	0.018	0.042	0.013	-0.029	-0.020
	(0.082)	(0.078)	(0.073)	(0.045)	(0.121)	(0.062)	(0.071)	(0.066)	(0.060)	(0.055)	(0.064)	(0.048)
% college	0.748	0.834	0.195	-1.567*	-0.924	6.284**	5.182*	3.215*	4.542**	4.859**	5.759**	3.425
	(3.179)	(4.034)	(2.566)	(0.887)	(2.109)	(2.446)	(2.714)	(1.710)	(2.161)	(2.300)	(2.719)	(3.642)
% working fulltime	6.574**	-5.161*	-1.129	1.161	-2.744	19.132***	-3.924	2.432	1.419	2.149	1.634	4.806
	(2.462)	(2.603)	(3.664)	(1.702)	(1.773)	(2.989)	(2.648)	(3.448)	(3.320)	(2.847)	(3.509)	(3.681)
% Black	0.514	-1.907	1.138	0.612*	0.272	0.733	-0.651	-0.654	-0.196	-0.038	-1.058	-3.062***
	(1.081)	(1.599)	(0.848)	(0.339)	(0.570)	(0.857)	(0.608)	(1.152)	(0.948)	(0.635)	(0.721)	(1.045)
% Hispanic	1.578***	-1.442	0.351	0.692**	0.518	1.789***	1.279	-1.368*	-1.052*	2.359**	1.197	0.076
	(0.574)	(1.029)	(1.103)	(0.273)	(0.682)	(0.520)	(1.316)	(0.738)	(0.606)	(0.929)	(1.472)	(0.859)
% Asian	-0.452	-2.011	0.501	-0.271	0.935	-1.317	15.425***	-1.205	-0.239	0.362	-0.840	-0.755
	(2.144)	(3.775)	(1.834)	(0.432)	(0.836)	(1.599)	(2.377)	(2.524)	(2.953)	(3.172)	(3.989)	(2.111)
% having children	4.732	10.489*	-0.417	2.778**	-6.217*	-1.787	5.454*	-5.159	-5.972	-2.187	-1.823	-1.037
	(4.510)	(5.677)	(4.179)	(1.256)	(3.218)	(4.837)	(3.003)	(6.069)	(6.266)	(4.354)	(5.666)	(3.673)
Average age	0.008	0.007	0.053*	-0.002	-0.014	0.050	0.024	0.023	0.010	0.104***	0.067*	0.124***
	(0.035)	(0.026)	(0.029)	(0.026)	(0.028)	(0.039)	(0.024)	(0.045)	(0.040)	(0.035)	(0.036)	(0.035)
% born in the US	3.750**	-2.525	-0.542	-0.062	-0.504	-0.184	1.410	-3.540	-2.930	3.522	5.275	1.923
	(1.841)	(1.886)	(1.978)	(1.001)	(1.288)	(1.933)	(1.490)	(2.256)	(2.227)	(3.812)	(5.515)	(1.678)
State FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	195	195	221	220	223	221	217	221	221	221	221	221
Adj. R^2	0.4546	0.5231	0.7237	0.9394	0.8826	0.6019	0.5737	0.2714	0.2364	0.7240	0.5798	0.6833

Note: (b) The unit of evangelical churches is per 10,000 population. (c) Evangelical denominations are defined based on Steensland et al. (2000). Standard errors are clustered at the state level.
*** $p < 0.01$
Source: ACS, ARDA, FBI, EPA, NaNDA, USPTO, US Census Bureau.

Table A.5: Regression of difference in same-sex acceptance between destination and origin (Movers)

Dependent variable: Δ % same-sex acceptance ($a_{idt} - a_{iot}$)			
	(1)	(2)	(3)
College degree	1.256***	-0.040	0.032
	(0.082)	(0.076)	(0.074)
Same-sex relationship	1.058***	0.386	-0.202
	(0.342)	(0.321)	(0.311)
College $\times$ Same-sex relationship	1.365***	1.626***	1.485***
	(0.446)	(0.421)	(0.409)
Origin-year fixed effects (μ_{ot})	✓	✓	✓
Individual level controls (X_{it})	✓	✓	✓
Destination characteristics (Z_{dt})		✓	✓
% same-sex couples in destination			✓
Observations	188674	188674	188674
Adj. R^2	0.3504	0.4357	0.4572

Note: (a) The sample is restricted to partnered people aged 25 to 55 who have migrated from one Metropolitan Statistical Area (MSA) to another within the last 12 months. (b) Other controls include income, sex, age, age squared, race, presence of child, and years in the U.S.
Standard errors are clustered at the origin-year level.*** $p < 0.01$
Source: ACS 2005-2019.