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IZA DP No. 18222

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IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Does Local Diversity Affect Charitable Giving?*

How does diversity affect charitable giving? On the one hand, diversity can lead to increased charitable giving, as individuals may feel more connected to and invested in their community when they see the diversity of needs and perspectives within it. On the other hand, diversity can also create challenges for charitable giving, as individuals may have different priorities, beliefs, and cultural norms that affect their willingness to give to certain causes and organizations. Using data from 2010-2020 county-level income tax returns linked to the U.S. Census population estimates, I find a negative impact of local ethnic diversity on charitable giving. In particular, I document that a one percentage point increase in the local ethnic fragmentation index is associated with up to a 2.9 percent decrease in the fraction of tax returns with charitable contributions and a 2 percent decrease in charitable contributions as a fraction of adjusted gross income.

JEL Classification: J10, J18, H30

Keywords: charitable giving, local ethnic diversity, fundraising

Corresponding author:

Barış K. Yörük
Department of Economics
University at Albany-SUNY
1400 Washington Ave.
Albany, NY 12222
USA

E-mail: byoruk@albany.edu

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1 Introduction

Recent demographic changes have made the United States more racially and ethnically diverse than ever before.¹ This paper investigates how such local diversity shapes patterns of charitable giving, a key form of voluntary support for public and community needs. Prior research has identified positive effects of diversity in several domains. For example, racially diverse educational environments are associated with better intellectual and social outcomes (Gurin, 1999; Chang, 1999), cultural diversity promotes innovation and entrepreneurship (Nathan and Lee, 2013), and racial diversity in firm leadership improves productivity (Richard, Triana, and Li, 2021). However, other studies suggest that diversity may reduce social cohesion and limit support for shared resources (Alesina, Baqir, and Easterly, 1999; Alesina and La Ferrara, 2000). While much of the literature has focused on diversity’s effects on public goods and formal institutions, less is known about how it influences private giving. This paper contributes to that gap by examining the relationship between local ethnic, religious, and political diversity and charitable donations in the United States.

Charitable giving plays a central role in the U.S. nonprofit sector and accounts for nearly 2% of GDP annually (List, 2011; Giving USA, 2024). Yet it is not clear a priori whether local diversity encourages or discourages charitable donations. Individuals in diverse communities may be exposed to a broader range of needs and causes, which could increase their willingness to give. At the same time, differences in cultural norms, beliefs, or group identities may reduce individuals’ sense of connection to certain charities or beneficiaries, leading to lower levels of giving. Whether diversity enhances or inhibits charitable behavior is ultimately an empirical question. However, little is known about the possible effects of various different forms of diversity on charitable giving. Furthermore, the vast majority of the existing studies that investigate this relationship (Andreoni, Payne, Smith, 2016; Okten and Osili, 2004), or in general, the effects of diversity on the provision of local public goods, are more than a decade old. It is unclear whether findings from the 1980s or 1990s are relevant now since in recent decades, the United States has experienced a series of pivotal events that have

¹The 2020 U.S. Census revealed that the United States is more racially and ethnically diverse than at any point in its history (Jensen et al., 2021). The probability that two randomly selected individuals belong to different racial or ethnic groups increased from 54.9% in 2010 to 61.1% in 2020. This shift continues a long-standing trend: in 1980, white residents accounted for nearly 80% of the U.S. population, while Black, Latino or Hispanic, and Asian American residents made up 11.5%, 6.5%, and 1.8%, respectively (Frey, 2020). By 2000, the Latino or Hispanic population slightly surpassed the Black population (12.6% vs. 12.1%), the Asian American share had more than doubled to 3.8%, and the white share had declined to 69.1%.

significantly influenced how people perceive and understand ethnic and racial diversity.² Therefore, the shifting societal views on diversity highlight the need for a fresh study using up-to-date data to explore how diversity influences charitable giving.

In this paper, I first investigate the effect of local ethnic and racial diversity on donations to private charities in the United States by exploiting the significant change in local ethnic and racial diversity within counties during 2010 – 2020. I also provide some evidence on the effects of other forms of local diversity such as religious and political diversity, on charitable giving. The data for the main empirical analysis come from the Internal Revenue Service (IRS)’s income tax data linked to the U.S. Census population estimates at the county level. The main empirical models are based on Vigdor (2002, 2004) and Andreoni, Payne, and Smith (2016), where community-level models are an aggregated version of an individual-level model with charitable giving modeled as a function of a person’s own ethnic, religious, or political group share of the population. These models provide a natural motivation for using a Fragmentation Index (FI) to measure local diversity, which is widely used in the literature and can be interpreted as the probability that any two randomly selected individuals in the community belong to different groups. I also test the robustness of my results using models based on Alesina, Baqir, and Easterly (1999).

I find that a one percentage point increase in the ethnic FI is associated with up to a 2.9 percent decrease in the fraction of tax returns with charitable contributions and a 0.48 percent decrease in charitable contributions per capita, suggesting that the impact of ethnic diversity on charitable giving appears to be persistent both at the intensive and the extensive margin. These effects are also observed among those who do not itemize deductions in their tax return, and more pronounced among the highly educated population and in counties with lower unemployment rates. On the other hand, the effects of local ethnic diversity on the behavior of charitable organizations are limited. In particular, I find that local ethnic diversity neither significantly affects charities’ fundraising efforts nor increases potential donors’ probability of receiving a charitable solicitation, which suggests that the estimated effects of diversity cannot be attributed to potential differences in strategic charity behavior that may stem from heterogeneous community characteristics.

I also investigate the effects of religious and political diversity on charitable giving using data from

²Among these transformative events are the election of the first Black President of the United States, the murder of George Floyd, and several landmark Supreme Court decisions regarding affirmative action. Each of these occurrences has catalyzed discussions about racism, social justice, and the importance of fostering inclusive environments.

the U.S. Religion Census (2010 and 2020) and County Presidential Election Returns (2012, 2016, and 2020). I present evidence that while the effects of political diversity on charitable giving are mixed, religious diversity does not appear to have a significant impact on giving.

To my knowledge, this is the first study that provides a comprehensive analysis of how local ethnic, religious, and political diversity affects charitable giving in the United States. These findings contribute to the literature on giving behavior and offer practical insights for nonprofit organizations operating in demographically diverse communities.

2 Background and review of the literature

There exists an extensive literature that documents that diversity reduces publicly provided goods.³ In particular, ethnically diverse communities are found to spend less on schools (Alesina, Baqir, Easterly, 1999; Poterba, 1997; Goldin and Katz, 1999), and less on social programs (Alesina, Glaeser, and Sacerdote, 2001). A notable exception is Cutler et al. (1993), who find that changes in state-level demographic characteristics hurt public spending, but at the county level, the effect is positive. Several studies also document that diversity has a negative impact on individual behavior when there are public benefits involved. Miguel and Gugerty (2005) find that in racially or ethnically heterogeneous communities of Kenya, people contribute less to schools through voluntary fundraising events. Similarly, Alesina and La Ferrara (2000) show that ethnically heterogeneous community structure is associated with lower involvement in social activities, while Okten and Osili (2004) find that people living in ethnically diverse communities in Indonesia contribute less to community organizations.

The existing literature offers several explanations for how within altruism and exchange-based considerations, community-level variables, including ethnic diversity can influence the household's transfer decision. First, ethnically diverse communities may have low levels of trust and may lack community-level norms of reciprocity, particularly if these attributes are cultivated within ethnic groups (Miguel and Gugerty, 2005). Second, if the type of public services provided is based on majority preferences, minority groups may find them less desirable and would be less likely to contribute to their production (Okten and Osili, 2004; Amankwaa and Devlin, 2017). Third, individuals may be less willing to contribute to a public good if the public good benefits other groups besides their own

³Alesina and La Ferrara (2005) and Achard and Suetens (2023) provide a detailed review of this literature.

(Fershtman and Gneezy, 2001).

Several studies focus specifically on the relationship between diversity and charitable giving. Hungerman (2008) shows that government spending on charities is less likely to crowd out charitable spending by United Methodist Churches in more ethnically diverse communities. Fong and Luttmer (2011) document that while non-Black participants view Black individuals as less worthy of charity, this does not translate into less giving. On the other hand, Fong and Luttmer (2009) find that respondents who report feeling close to their racial or ethnic group give substantially more to Hurricane Katrina victims when victims are of the same race, while respondents who do not feel close to their group give substantially less. However, this paper is more closely related to Andreoni, Payne, Smith (2016), Okten and Osili (2004), Qu and Paarlberg (2021). Andreoni, Payne, Smith (2016) use 10-year neighborhood-level panels derived from personal tax records in Canada and find that local ethnic and religious diversity have a negative impact on charitable donations. Their finding suggests that a 10 percentage point increase in ethnic diversity is associated with a 14% reduction in donations, but does not affect the likelihood of giving. They also find that the same magnitude of increase in religious diversity leads to 10% lower donations. Okten and Osili (2004) investigate how private donations to charitable organizations that help the needy are affected by greater community heterogeneity. Using cross-sectional data from the 2001 wave of the Panel Study of Income Dynamics (PSID), they find that greater ethnic heterogeneity decreases both the probability and the amount an individual contributes to the needy. Qu and Paarlberg (2021) examine the relationship between community ethnic-racial diversity and contributions to donor-advised funds (DAFs) held by community foundations. In contrast to prior research that generally finds that diversity reduces the private provision of public goods, they find that greater ethnic-racial diversity is significantly associated with higher levels of contributions to DAFs at community foundations but not with general contributions. Qu and Paarlberg (2021) argue that in diverse communities, where in-group bias may be prevalent, DAFs provide a means for individuals to target benefits to their in-group members and elevate the status of their group. This may explain the positive relationship between giving to DAFs and diversity.

While Okten and Osili (2004) and Qu and Paarlberg (2021) focus on a single category of giving for a short period, e.g. giving to the needy or DAFs for a single year, this paper focuses on total charitable contributions during multiple periods. This paper differs from Andreoni, Payne, Smith

(2016) since it uses data from a different country. Compared to these papers, I also use data from a more recent period, focus on not only ethnic diversity but also religious and political diversity, provide a set of robustness checks for the validity of results, and test whether ethnic diversity affects the fundraising efforts of charities. To the best of my knowledge, this is the first paper that provides a comprehensive analysis of the relationship between local ethnic, religious, and political diversity on charitable giving and fundraising in the United States using county-level panel data.

3 Data

The main data for charitable contributions come from the income tax data collected by the IRS for 2010 – 2020. The IRS publishes annual county and zip code-level aggregates of all individual tax returns. I merge this data at the county level with the U.S. Census population estimates (United States Census Bureau, 2025), which contain detailed information on the ethnic and racial composition of the population and other population characteristics. Charitable donations in the IRS data are based on all tax-paying citizens who decide to itemize donations on their tax returns. Throughout the empirical analyses, I use three main outcomes from the IRS data. These are the fraction of tax returns with charitable contributions, average donations as a fraction of adjusted gross income, and the average donation per capita, which following Andreoni, Payne, Smith (2016), I compute by dividing total donations by the adult (15+) population in each year.⁴ I provide the summary statistics of these outcome variables for the full sample, and separately for different intensities of local ethnic, religious, and political diversity in Appendix Table A1. Compared to self-reported survey data, the IRS data have the advantage of being more reliable. However, it also has some disadvantages. First, the IRS data do not provide information about the specific organizations to which donations are made. This presents a limitation, as it prevents distinguishing between donations directed to local versus national or international organizations. This is potentially problematic if the relationship between community composition and giving behavior differs across types of charitable causes. For example, donations to local food banks or community health centers may be more sensitive to local demographic characteristics than donations to large national organizations such as the Red Cross or

⁴I use the log transformation of the amount of charitable contributions per capita as an outcome variable in the empirical analysis. Following Andreoni, Payne, and Smith (2006), by dividing total contributions derived from tax records by a measure of the adult population, I assume that people who do not file a tax return did not donate to charity. Alternatively, this measure could be interpreted as tax-receipted donations per capita.

international NGOs. If a significant portion of giving is directed toward non-local causes, any true effect of local diversity on giving to local organizations is likely to be underestimated in my analysis. Thus, the reported estimates can be interpreted as conservative in this regard. Second, because the IRS data are drawn from individual tax returns, they capture only charitable contributions reported by taxpayers who filed a return and elected to itemize deductions.⁵ Therefore, the sample does not represent the whole U.S. population. To address these concerns, I supplement the IRS-based analysis with results from the 2001 wave of the Survey of Giving and Volunteering in the United States. This survey was designed to be nationally representative and includes information on itemization status, enabling a robustness check using a broader sample.

I linked the IRS data to the U.S. Census county population estimates for 2010 – 2020 (United States Census Bureau, 2025). The Census Bureau follows standards on race and ethnicity set by the U.S. Office of Management and Budget (OMB). For race, the OMB standards identify five minimum categories: White, Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian, or Other Pacific Islander. For ethnicity, the OMB standards classify individuals in one of the two categories: "Hispanic or Latino" or "Not Hispanic or Latino." The Census Bureau uses the term "Hispanic or Latino" interchangeably with the term "Hispanic," and also refers to this as ethnicity. The Census Bureau publishes reports that include measures of racial and ethnic diversity for the U.S. population. In these reports, the following groups are used in the diversity calculations: Hispanic, White alone (non-Hispanic), Black or African American alone (non-Hispanic), American Indian and Alaska Native alone (non-Hispanic), Asian alone (non-Hispanic), Native Hawaiian and Other Pacific Islander alone (non-Hispanic), Multiracial (non-Hispanic).⁶ I follow the same approach and use the share of these groups in the population to calculate the ethnic and racial diversity index for each county. Appendix Table A2 reports the summary statistics of these ethnic groups for the full sample and different quartiles of county-level median income. The shares of Asians and Whites in the population tend to be higher in counties with relatively high median income, while the share of Blacks in the county population tends to go down as county-level median income goes up. There has also been a considerable amount of change in the share of different ethnic and racial groups across counties from 2010 to 2020, which is the main source of identification in empirical models. Table 1

⁵Watson (2021) reports that in 2020, out of 176.2 million individuals and married couples who could file a tax return, about 144.5 million of them actually filed a tax return.

⁶See, for example, Jensen, et al. (2021).

shows that during this period, while the share of whites is decreasing considerably, the share of other racial and ethnic groups is rising at the county level.

In a recent paper, Teeselink and Melios (2022) consider the possibility that people base their donation decisions not only on government spending, but also on their support of the government, and find that support for the incumbent president crowds out charitable donations. To estimate how local political diversity may affect charitable giving, I use data from county presidential election returns for 2012, 2016, and 2020, which were compiled by MIT Election Lab. Following Teeselink and Melios (2022), in the absence of county-level information on political party affiliations, I use the distribution of votes at the presidential election as a proxy for the share of political beliefs within a county. Appendix Table A3 shows that the share of people who voted for the Democratic Party is higher in counties with relatively high median income, while the share of people who voted for the Republican Party is relatively stable across different income quartiles. I also classify those who are of voting age (ages 18 and older) but did not vote in the presidential election as "not affiliated".⁷ The share of this group in the population goes down as median income goes up.

The Census Bureau does not collect information on religious affiliation since the late 1930s. Since 1990, a decadal U.S. Religion Census has been conducted by the Association of Statisticians of American Religious Bodies and features the only county-level data on U.S. religious adherence. I use the 2010 and 2020 editions of this Census to estimate the effect of county-level religious diversity on charitable giving. The U.S. Religion Census is based on congregational counts, attendance, and membership as reported by formal denominations and religious groups for each county. The latest, 2020 edition of the Census covers more than 370 religious bodies, over 350,000 congregations, and over 160 million adherents, and it is the most extensive count of congregations ever conducted.⁸ A major shortcoming of the U.S. Religion Census is that since the data is based on reported counts of membership by formal denominations and religious groups, it does not include information on those who are not affiliated with any religion. Findings from a recent survey suggest that the share of those who are religiously unaffiliated has risen from 16% to 29% from 2007 to 2021 in the U.S. population (Smith, 2021). Therefore, it is likely that the data from the U.S. Religion Census will underestimate

⁷If the voting age population in a particular county is A, the number of people who voted for the Democratic Party is B, the number of people who voted for the Republican Party is C, and the total number of people who voted for other parties is D, the share of those who are not affiliated with any party in that particular county is calculated as $[A - (B + C + D)] / A$.

⁸A detailed information about the Census and data collection procedures are available at www.usreligioncensus.org.

the religious diversity in the United States. Furthermore, religious groups with relatively small shares in the U.S. population such as Buddhists, Hindus, or Muslims often do not report their membership counts in relatively small counties. So, the religious diversity index can be calculated only for a subset of relatively large counties. Appendix Table A3 provides summary statistics for the shares of religious groups in the United States.

4 Empirical Methodology

The empirical methodology follows Vigdor (2002, 2004) and Andreoni, Payne, Smith (2016), in which a community-level model is constructed through the aggregation of an individual-level model. This approach offers several key benefits, such as offering a behavioral explanation for the coefficients derived from the community-level model and providing an explicit reason to employ a Fragmentation Index (FI), which is the prevalent method for assessing diversity. Suppose that the charitable behavior of individual i , who belongs to a certain group of g and resides in county c at time t depends on the fraction of the members who are in the same group. One can model the charitable behavior of this individual as

$$Y_{igct} = c_g + \beta_g \text{Share}_{gct} + \alpha X_{igct} + \gamma_c + \mu_t + v_{igct}. \quad (1)$$

In Equation (1), Y_{igct} is one of the charitable giving outcomes, X_{igct} is the set of individual level control variables, Share_{gct} is the share of group g in the population in county c at time t , and c_g is each group's baseline level of the outcome variable. Vigdor (2002) refers β_g as the within-group affinity, because it measures the extra amount a person is willing to give when their group's share in the population increases. Equation (1) also include county and time fixed effects (γ_c and μ_t , respectively). Aggregating Equation (1) to county-year-group level yields

$$\bar{Y}_{ct} = \sum_{g=1}^G c_g \text{Share}_{gct} + \sum_{g=1}^G \beta_g \text{Share}_{gct}^2 + \alpha \bar{X}_{ct} + \gamma_c + \mu_t + \bar{v}_{ct}. \quad (2)$$

Following Andreoni, Payne, Smith (2016), in Equation (2), the overbars indicate community-level weighted averages at time t , where the weights are the group shares in a particular county. In this equation, $\bar{X}_{ct}$ represents aggregated county-level, time-variant control variables including shares of females, different age groups, and those who have not health insurance coverage in the population,

unemployment rate, poverty rate, median income (adjusted for 2020 prices), and dummy variables controlling for educational attainment, and urban-rural categories based on 2006 and 2013 National Center for Health Statistics (NCHS) Urban-Rural Classification Scheme for Counties.⁹ Assuming that all of the squared shares have the same effect, we can rewrite Equation (2) as

$$\bar{Y}_{ct} = \sum_{g=1}^G c_g Share_{gct} + \beta \sum_{g=1}^G Share_{gct}^2 + \alpha \bar{X}_{ct} + \gamma_c + \mu_t + \bar{v}_{ct}. \quad (3)$$

Alesina, Baqir, Easterly (1999) argue that people tend to prefer those who are similar to them and consequently place less trust in individuals from different backgrounds, often avoiding cooperation when they perceive that out-group members are benefiting. If the available statistical categories accurately mirror the perceptions that people have in their minds, and if in-group favoritism is the primary reason behind the impact of diversity, the commonly used Hirschman-Herfindahl Index (HHI) would be a suitable predictor of social cohesion. Most studies use fragmentation index (FI), for which the HHI (Hirschman, 1964) is subtracted from unity. Therefore, the FI can be expressed as

$$FI = 1 - \left(\sum_{g=1}^G Share_{gct}^2 \right). \quad (4)$$

The FI can be interpreted as the likelihood that two randomly drawn individuals do not share membership in the same category. It varies between a minimum of 0, which implies that there is only a single group in the population and hence, no diversity; and a maximum of 1, which is reached when the population is divided into an infinite amount of categories. Incorporating the FI to Equation (3) yields

$$\bar{Y}_{ct} = \gamma FI_{ct} + \sum_{g=1}^G c_g Share_{gct} + \alpha \bar{X}_{ct} + \gamma_c + \mu_t + \bar{v}_{ct}. \quad (5)$$

⁹The source for county level control variables is the U.S. Census. The NCHS is hosted by the Centers for Disease Control and Prevention. The NCHS Urban-Rural Classification Scheme categorizes counties based on their population as follows: Large central metro (central counties of MSAs of 1 million or more population), large fringe metro (fringe counties of MSAs of 1 million or more population), medium metro (counties within MSAs of 250,000-999,999 population), small metro (counties within MSAs of 50,000 to 249,999), micropolitan (counties in micropolitan statistical areas), noncore (counties not within micropolitan statistical areas). I used data from the 2006 classification to assign urban-rural categories of counties for years from 2010 to 2012. I used data from the 2013 classification to assign urban-rural categories of counties for year from 2013 to 2020.

For the empirical analysis, I estimate Equations (2) and (5). Since aggregation in both models creates heteroskedastic errors, I use standard errors that are heteroskedasticity robust and clustered at the county level. I also estimate separate models by income levels and test the sensitivity of my results under several robustness checks. Following Andreoni, Payne, Smith (2016), I use the county adult population (aged 15 or older) as a sample weight in all models, assume that control variables account for all time-varying factors that are related to both diversity and charitable behavior, and any remaining unobservable measures are controlled adequately through county and time level fixed effects. Figure 1 illustrates the relationship between selected variables that might explain charitable giving and the FI. The distribution of these variables for different values of the FI is relatively random. This suggests that the majority of the variables that might explain charitable giving do not have a meaningful impact on ethnic diversity at the local level. Table 2 shows average charitable contributions as a fraction of adjusted gross income based on changes in the ethnic fragmentation index over time. Charitable contributions as a fraction of adjusted gross income are lower in counties where 1, 3, or 10-year change in the FI index is relatively high, which indicates a negative relationship between ethnic diversity and charitable giving.

There are several empirical challenges that may confound the estimated effect of the FI on charitable outcomes. First, as discussed earlier, the empirical models corresponding to Equations (2) and (5) follow the approaches of Vigdor (2002, 2004) and Andreoni, Payne, and Smith (2016), and include the population shares of relevant groups as control variables. However, because these population shares are also used in constructing the FI measure, they may be mechanically correlated with FI by construction. To address this concern, I follow the strategy employed by Alesina, Baqir, Easterly (1999) and re-estimate Equation (5) excluding the population shares from the set of controls. This approach enables an assessment of the effect of FI on charitable outcomes that is not driven by underlying group composition. I present these results alongside the baseline estimates that include population shares, allowing for direct comparison. In the vast majority of cases, the estimates from the two model specifications are remarkably similar, suggesting that the inclusion of population shares does not materially affect the estimated relationship between FI and charitable giving.

A second potential concern is non-random sorting across counties, which may confound the observed relationship between ethnic diversity and charitable giving. For instance, more charitable counties might attract a more diverse population over time, leading to reverse causality. Conversely,

selection could also operate in the opposite direction: if charitable giving disproportionately benefits majority racial or ethnic groups, it may discourage minority populations from settling in those communities, thereby influencing local diversity patterns. To examine these possibilities, I conduct a descriptive analysis of the evolution of the ethnic fractionalization index (FI) across counties with varying initial levels of charitable giving. Specifically, I sort counties by their ethnic FI in 2010 and label those in the bottom quartile as “initially less diverse.” I then sort counties by per capita charitable contributions in 2010 and label those in the bottom and top quartiles as “initially less charitable” and “initially more charitable,” respectively. Panel A of Appendix Figure A1 restricts the sample to counties that were initially less diverse and compares changes in FI over time between counties that were more versus less charitable at baseline. The trends are similar across both groups, suggesting that more charitable counties did not systematically become more diverse. Panel B conducts a parallel analysis for counties that were initially more diverse (top quartile of FI in 2010) and again finds similar FI trends across counties with different baseline levels of charitable giving. These findings suggest no strong evidence that charitable giving, whether inclusive or exclusive, drives the direction of changes in ethnic diversity over time.

Another potential mechanism that may explain the relationship between ethnic diversity and charitable giving that was not discussed in the previous literature is the strategic behavior of charities. Fundraising is a major determinant of giving.¹⁰ If charities are more likely to ask for donations or spend more fundraising money in more ethnically diverse communities, this would affect the relationship between diversity on charitable behavior.¹¹ I explicitly test this possibility by estimating the effect of ethnic diversity on the probability of being asked to give and fundraising spending by using data from Survey of Giving and Volunteering in the United States and tax returns of charitable organizations and discuss the findings in the next section.

5 Results

5.1 Ethnic diversity

To examine the relationship between racial and ethnic diversity and charitable giving, I first estimate Equation (5) using four different model specifications and present the results in Table 3. Specification

¹⁰Yörük (2012) provides a comparative analysis of the effectiveness of different fundraising techniques.

¹¹Yörük (2011) finds that fundraisers often solicit donations based on gender and race.

(1) follows Alesina et al. (1999) and excludes the population shares of individual racial and ethnic groups from the control set. Specification (2) builds on this model by adding urban-rural category-specific linear time trends, which are constructed by interacting linear time trends with indicators based on the National Center for Health Statistics (NCHS) urban-rural classification scheme. These trends account for differential time patterns in charitable giving across urban and rural counties. Specification (3) follows the approach of Vigdor (2002, 2004) and Andreoni, Payne, and Smith (2016), and includes population shares of relevant groups as control variables to account for the role of local ethnic composition. Finally, specification (4) extends this model by also incorporating urban-rural category-specific linear time trends, as in specification (2). All four specifications include the full set of standard covariates, along with county and year fixed effects.¹²

Estimates from these alternative specifications imply that a one percentage point increase in the ethnic FI is associated with a 0.0051 to 0.0060 point decrease in the fraction of tax returns with charitable contributions. The sample mean for this variable is 0.204. Therefore, this effect represents a 2.5 to 2.9 percent change from the mean. These effects are highly significant under conventional significance levels. Appendix Table A1 reports that on average, charitable contributions are 1.9 percent of the adjusted gross income in the IRS sample. Table 3 shows that a one percentage point increase in the ethnic FI is associated with a statistically significant, 0.00033 to 0.00038 point decrease in the amount of charitable contributions as a fraction of adjusted gross income, which corresponds to a 1.7 to 2 percent change from the mean. Similarly, a one percentage point increase in the racial FI decreases charitable contributions per capita by 0.28 to 0.48 percent compared to the mean of this variable. Therefore, Table 3 shows that ethnic and racial diversity have a statistically significant and negative impact on charitable giving. These estimates are slightly larger but in general, consistent with Andreoni, Payne, Smith (2016) who found that a 10 percentage point increase in ethnic diversity is associated with a 14 percent reduction in donations in Canada. I present the results from the alternative models as in Equation (2) that contain squared terms of shares of different ethnic groups in Appendix Table A4. In this table, the statistically significant and positive coefficients on the squared terms of the shares of certain ethnic groups can be interpreted as the group affinity effect as people belonging to those ethnic and racial groups are more likely to donate when the share of their group in the population increases.¹³

¹²Models estimated without any control variables yield comparable results. These results are available upon request.

¹³It is important to note that in general, the group affinity is one potential interpretation of the squared terms. A

5.1.1 Heterogenous impact of ethnic diversity

In Table 4, I examine how changes in ethnic diversity over the 2010 – 2020 period are associated with charitable behavior. Specifically, I calculate the change in the ethnic fragmentation index (FI) for each county between 2010 and 2020. I then rank counties by the magnitude of this change and divide them into terciles. Counties in the bottom third of the distribution, those with the smallest increases in ethnic FI, are classified as experiencing low changes in ethnic diversity. Conversely, counties in the top third, those with the largest increases in ethnic FI, are categorized as experiencing high changes in diversity. I estimate separate models for these two groups to assess whether the relationship between ethnic diversity and charitable outcomes differs by the extent of demographic change. The impact of ethnic diversity on charitable giving remains negative in all models. However, the effects are less precise and statistically insignificant under certain specifications. The impact of ethnic diversity on the amount of charitable contributions as a fraction of adjusted gross income and charitable contributions per capita appears to be more pronounced in counties where the 10-year period change in ethnic diversity was relatively high.

Digging deeper into what might be driving the negative effect of ethnic diversity on charitable giving, I break the sample into quartiles based on median household income, educational attainment level measured as a percent of those with a university degree, and unemployment rate, and then analyze those subsamples separately. The results are reported in Table 5. The negative impact of ethnic diversity on the fraction of tax returns with charitable contributions becomes more pronounced as counties become more educated and wealthy, and have lower unemployment rates. The impact of ethnic diversity on charitable contributions as a fraction of adjusted gross income decreases as the unemployment rate goes up and increases as the percentage of those with a university degree in the county population goes up.

To test whether changes in the racial and ethnic composition in some geographical areas over time have a heterogenous impact on charitable giving, I relied on the NCHS’s Urban-Rural Classification Scheme of U.S. counties. Results reported in Table 6 reveal that in general, the negative impact of ethnic diversity on charitable giving at the county level is stronger in large central metro areas

one percentage point increase in the share of an ethnic group in a county where this group has a relatively small share in the population may not generate the same impact compared with the same magnitude of a change in the share of the same ethnic group in a county where this group has a relatively large share in the population.

(central counties, i.e., inner cities, of MSAs of 1 million or more population) and large fringe metro areas (fringe counties, i.e., suburbs, of MSAs of 1 million or more population). On the other hand, compared with its impact in medium and small metro areas (counties within MSAs of 250,000 to 999,000 population and counties within MSAs of 50,000 to 249,999 population, respectively), the impact of ethnic diversity on charitable giving is stronger in micropolitan and noncore areas (counties with 10,000 to 49,999 population and counties with less than 10,000 population). Compared with the main results reported in Table 3, Table 6 also shows that the negative effect of diversity on charitable giving is also more pronounced in coastal counties.¹⁴

5.1.2 Robustness checks

In Table 7, I first report estimates of the ethnic FI in alternative model specifications and compare them with the main estimates as reported in Table 3. Next, I consider an alternative index for diversity that measures ethnic polarization within counties. Although the decennial U.S. Census was conducted in 2010 and 2020, the Census Bureau publishes population estimates every year. Using data only from the census years of 2010 and 2020 slightly reduces the estimated impact of diversity on the fraction of tax returns with charitable contributions. However, the coefficients on the ethnic FI are still highly significant and show the negative impact of local ethnic diversity on various indicators of charitable giving.

In 2017, the United States enacted the Tax Cuts and Jobs Act (TCJA). This act made it relatively less beneficial to itemize deductions for charitable donations. Since the IRS data relies on itemized charitable deductions in tax returns as a proxy for actual charitable donations, the TCJA could potentially confound the estimated impact of the FI on charitable giving. To investigate this possibility, I re-estimate Equation (5) by including only the years before 2017 such that the sample strictly precedes the implementation of the TCJA. The results reported in Table 7 show that consistent with the main findings, ethnic diversity leads to a reduction in charitable donations with this sample. The estimated effects are relatively smaller for certain indicators of giving but remain highly significant.

If ethnic diversity of communities affects not only the charitable behavior but also the fundrais-

¹⁴I identify the coastal counties based on the U.S. Census Bureau Population Division's 2018 release of U.S. Coastline Counties:2016.

ing efforts of charities, this may have an impact on the relationship between ethnic diversity and charitable giving. I present several robustness checks to test this possibility. First, I include the share of fundraising spending as a fraction of total charitable contributions received by charities as an additional control variable in empirical models. The data for this variable comes from the National Center for Charitable Statistics (NCCS) of the Urban Institute and is based on the tax returns of charitable organizations from 2011 to 2019.¹⁵ I perform several data cleaning steps to address likely reporting errors in these data. First, I remove all duplicates and only keep one entry per year for each unique charity identifier. Second, I omit all charities that reported negative donations or for which donation data is missing. Similarly, I drop charities that reported negative fundraising event expenses or fundraising fees, total expenses, and total revenue. I generate a proxy for fundraising expenses as a sum of fundraising fees and fundraising event expenses. Most likely due to reporting errors, compared to charitable donations received, fundraising spending of some charities is unreliably large. To address this issue, I follow a similar approach to Deryugina and Marx (2021) and exclude the one percent of charities with the highest fundraising spending. I focus on the share of fundraising spending as a fraction of total charitable contributions received by charities and use it as an additional control variable in the empirical models. The coefficient estimates of the FI in these models are negative, highly significant, and very similar to the main estimates from the full sample. Next, I estimate the effect of the ethnic FI on the number of charitable organizations per 1,000 people, fundraising spending per capita, and fundraising spending as a fraction of total contributions received and report the results in Table 8. In these models, although it appears that there is a positive relationship between ethnic diversity and the number of charitable organizations per 1,000 people in a county under certain specifications, this effect is not precise and becomes statistically insignificant when population shares of ethnic groups are excluded from the models. Furthermore, the coefficients on the FI and shares of ethnic and racial groups are insignificant for the other outcomes suggesting that local ethnic and racial diversity does not have statistically significant impact on charities' fundraising efforts.

Next, I estimate models with an alternative measure of community diversity following Montalvo and Reynal-Querol (2005), which focuses on polarization rather than fragmentation. This polarization index (PI) is expressed as:

¹⁵The NCCS core files for 501(c) public charities are available at: <https://nccs-data.urban.org/data.php?ds=core>

$$PI = 1 - \sum_{k=1}^K \left(\frac{0.5 - Share_{kct}}{0.5} \right)^2 Share_{kct} \quad (6)$$

where $Share_{kct}$ represents the share of group k in county c at time t . This index increases if one shifts the population between groups in such a way that groups become equal in size. The index ranges from 0 where either all people belong to one group or are divided across an infinitive amount of groups, to 1 where there are two groups of equal size. Therefore, in contrast to the FI, which reaches its maximum value when the population is divided equally among the groups, PI reaches its maximum value when the population is divided equally among only two of the groups. The results reported in Table 7 show that using the PI instead of the FI in empirical models yields comparable results. Under alternative model specifications, a one percentage point increase in the ethnic PI is associated with a statistically significant, 0.0015 to 0.0018 point decrease in the fraction of tax returns with charitable contributions, which represents a 0.7 to 0.9 percent change from the mean of this variable. Similarly, the impact of the ethnic PI on the amount of charitable contributions as a fraction of adjusted gross income and charitable contributions per capita are negative and highly significant. In the remaining specifications of Table 7, I report the effect of the ethnic PI on different indicators of charitable giving under alternative models. As for the FI, using data only from the census years, excluding post-TCJA period, and controlling for the fundraising activity does not have a meaningful impact on the estimated effect of the ethnic PI on giving outcomes.

5.1.3 Survey data

So far, I have presented results based on the data from the tax returns of households and charitable organizations. Although data based on tax returns provide reliable information, they also have some disadvantages. For example, data based on tax returns are likely to underestimate the aggregate giving in the United States since neither all eligible households file a tax return nor everybody who donated to charity reports it in their return. It is also plausible to expect that diversity may have an impact on the probability of itemizing deductions in tax returns. In fact, using the IRS data, I have found that a one percentage point increase in the FI is associated with up to a 2.8 percent decrease in the fraction of tax returns with itemized deductions.¹⁶ This may be problematic since racial and

¹⁶For this analysis, I estimate models that are comparable to those reported in Table 3 but use the fraction of tax returns with itemized deductions as the dependent variable.

ethnic minorities may have lower incomes than whites, which may lead to smaller share of taxpayers itemize in more diverse areas. Although the empirical models control for income at the county level, testing whether diversity has an impact on a measure of giving that is not conditional on itemization status is essential.

Similarly, fundraising spending reported in tax returns of charities may not be a good proxy for fundraising spending at the local level since charities located in a certain county may not necessarily direct a significant portion of their fundraising efforts to attract local donors. To further test the robustness of my findings, I use data from the 2001 Survey of Giving and Volunteering in the United States (SGV) and estimate Equation (5).¹⁷ The 2001 wave of the SGV is unique in the sense that it contains county identifiers so that it is possible to link it to the U.S. census at the county level and investigate the effect of local ethnic diversity on charitable giving. Other important features of the SGV are that it contains questions on itemization status and whether the respondent is personally asked to give.¹⁸ Therefore, it is possible to test whether the respondents who reside in more diverse counties are more or less likely to be asked for charitable donations. Table 9 shows that ethnic FI has a negative, considerably large, and statistically significant impact on the share of household income donated to charities.¹⁹ A similar finding is also observed when only those who did not itemize deductions in their tax return is considered. Therefore, the negative impact of local ethnic diversity on charitable giving cannot be attributed to the relationship between the itemization status and diversity. On the other hand, ethnic diversity has no statistically significant effect on the probability of being asked to give, which suggests that fundraising efforts are not affected by the community characteristics related to race and ethnicity. These results are in line with the findings from the IRS tax return data and support my finding that more ethnically diverse communities are less likely to donate to charitable causes.

¹⁷This is the most recent survey in the ‘Giving and Volunteering in the United States’ series conducted for Independent Sector. The previous versions of this survey were conducted in person by Gallup on about 2,500 households, every two years, starting from 1988.

¹⁸In general, people are much more likely to give and volunteer when they are asked to (Yörük, 2008; Yörük, 2009; Mungan and Yörük, 2012).

¹⁹In these models, individual level control variables include age, income, and dummy variables for different levels of educational attainment, race, employment status, and gender. County level controls include dummy variables for shares of different ethnic and racial groups, shares of different age groups, unemployment rate, mean income, and shares of groups with different educational attainment.

5.2 Political diversity

Table 10 presents estimates of the relationship between political diversity and charitable behavior. In this analysis, the reference group consists of individuals who were eligible to vote but did not participate in the presidential election. Following the approach used in analyzing ethnic diversity, I estimate four model specifications. Specification 1 excludes population shares of individual racial and ethnic groups from the set of controls. Specification 2 adds urban-rural category-specific linear time trends to the first specification. Specification 3 includes population shares of racial and ethnic groups to account for variation in local demographic composition. Finally, Specification 4 extends Specification 3 by incorporating the same urban-rural time trends as in Specification 2. Across specifications, political diversity, as measured by the political fragmentation index FI, is positively associated with the fraction of tax returns reporting charitable contributions. A one percentage point increase in political FI corresponds to an increase of up to 1.3 percent in this outcome relative to its mean. However, for other measures of charitable giving, such as total contributions or average contributions per return, the estimated effects of political diversity are negative and statistically insignificant. These results suggest that political diversity may promote broader participation in charitable giving, even if it does not significantly alter the overall volume of donations.

I present the results from the alternative models that contain squared terms of shares of different political groups in Appendix Table A5. Republicans appear to have a statistically significant positive group affinity as indicated by the positive and statistically significant coefficient on the squared term of the share of this group for certain outcomes. This suggests that Republicans are more willing to donate when their group share rises in the population. A similar result is observed for the Democrats for charitable contributions as a fraction of adjusted gross income and charitable contributions per capita.

Appendix Table A6 reports results for the effect of alternative political polarization index (PI) on charitable giving. The findings suggest that the political PI has a statistically insignificant effect on all outcomes.

5.3 Religious diversity

Table 11 and Appendix Tables A7 and A8 report estimates of the relationship between religious diversity and various measures of charitable giving. Across all specifications, I find no evidence

that the religious FI has a statistically significant effect on any of the giving outcomes. Likewise, the estimated coefficients on the population shares of individual religious groups are generally statistically insignificant, regardless of model specification.

Appendix Table A7 reports results from alternative specifications that include squared terms of religious group shares, allowing for potential nonlinear group affinity effects. These results reinforce the main findings: religious diversity does not meaningfully affect most charitable giving outcomes. An exception emerges in the case of charitable contributions per capita, where the squared term for the Muslim population share is positive and statistically significant. This finding suggests that charitable giving among Muslims may increase as the size of the local Muslim population grows, which is a pattern indicative of group affinity. However, similar effects are not observed for other religious groups or for other measures of giving.

Appendix Table A8 presents evidence that religious polarization is positively associated with the fraction of tax returns reporting charitable contributions. Yet this relationship does not extend to other outcomes such as total or average donation amounts. Overall, the lack of consistent associations between religious diversity and charitable giving stands in contrast to prior research by Andreoni, Payne, and Smith (2016), who document a negative effect of religious diversity on donations in Canada and a significant group affinity effect for Catholics.

The divergence in findings may stem from several factors. First, differences in time periods and national religious compositions could play a role. Second, and perhaps more importantly, the Canadian data used by Andreoni et al. include the share of individuals unaffiliated with any religion, whereas the U.S. data used here do not. The exclusion of unaffiliated individuals likely inflates the relative shares of other religious groups, which may bias diversity and group affinity measures. Consequently, the estimates presented in this paper regarding the effect of religious diversity on charitable giving should be interpreted with caution.

6 Conclusion

The presence of diversity is becoming more prevalent throughout the United States and is often celebrated as a valuable attribute. Nevertheless, recent studies suggest that despite its potential benefits, diversity appears to dilute support for publicly funded goods and services. On the other

hand, the literature that focuses specifically on the relationship between diversity and charitable giving is limited. In this paper, exploiting substantial fluctuations in local diversity in U.S. counties between 2010 and 2020, I investigate the impact of different forms of local diversity on alternative indicators of charitable giving. I document that a one percentage point increase in the local ethnic fragmentation index is associated with up to a 2.9 percent decrease in the fraction of tax return with charitable contributions and a 2 percent decrease in charitable contributions as a fraction of adjusted gross income. The negative impact of ethnic diversity on the fraction of tax returns with charitable contributions becomes more pronounced as counties become more educated and wealthy, and have lower unemployment rates. These findings are robust under different model specifications, use of an alternative diversity measure that focuses on polarization rather than fragmentation, and in line with the findings from Okten and Osili (2004) and Andreoni, Payne, Smith (2016). I also document that the negative impact of local ethnic diversity on charitable giving cannot be attributed to the possible relationship between the itemization status and diversity.

A possible explanation for the negative relationship between ethnic diversity and charitable giving behavior would be that relatively more charitable-inclined counties may attract less diverse populations. However, I show that the raw data do not support this hypothesis and that many variables that may explain charitable giving are randomly distributed with respect to different values of the ethnic diversity index. Another potential explanation for the relationship between ethnic diversity and giving that was not discussed in the previous literature is the potential differences in the strategic behavior of charities based on the ethnic diversity of the communities. Given that fundraising has a significant impact on giving, if charities are more likely to ask for donations or spend more fundraising money in less diverse communities, this would affect the estimated impact of diversity on charitable behavior. I explicitly test this possibility by estimating the effect of ethnic diversity on the probability of being asked to give and local fundraising expenditures and show that ethnic diversity does not have a significant impact on the fundraising efforts of charities.

I also investigate the effects of local religious and political diversity on charitable giving. I present some evidence that although political diversity has a positive impact on certain giving outcomes, its effect on the majority of the giving outcomes is statistically insignificant. Similarly, I find that religious diversity has a statistically insignificant impact on different indicators of charitable giving at the county level.

These findings suggest that the ongoing demographic changes in local communities in the United States could potentially lead to a notable decrease in charitable services supported by individual voluntary contributions. As communities become more ethnically diverse, there is a likelihood of reduced revenue for charitable organizations. Since the existing literature shows that public sector provision of goods and services is declining as diversity increases, the results of this paper indicate a compounding effect as charitable initiatives that serve as substitutes for government programs and support may also be hindered by diversity. This brings attention to critical public policy considerations, particularly in urban settings where there seems to be a more rapid increase in ethnic diversity.

References

- [1] Alesina A, R. Baqir, and W. Easterly, 1999, Public Goods and Ethnic Divisions, *Quarterly Journal of Economics*, 114, 1243-84.
- [2] Alesina A, E. LaFerrara, 2000, Participation in Heterogeneous Communities, *Quarterly Journal of Economics* 115, 847-904.
- [3] Alesina, A., E. Glaeser, B. Sacerdote, 2001, Why Doesn't the United States Have a European-Style Welfare State?, *Brookings Papers on Economic Activity*, Fall 2001, 187-278.
- [4] Alesina A, E. LaFerrara, 2005, Ethnic Diversity and Economic Performance, *Journal of Economic Literature*, 43, 762-800.
- [5] Amankwaa, B. and R.A. Devlin, 2017, Visible Minorities and Majority Giving, *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 28, 510-531.
- [6] Andreoni, J., A.A. Payne, and J. Smith, 2016, Diversity and donations: The effect of religious and ethnic diversity on charitable giving, *Journal of Economic Behavior and Organization*, 128, 47-58.
- [7] Achard, P. and S. Suetens, 2023, The causal effect of ethnic diversity on support for redistribution and the role of discrimination, *Journal of Economic Surveys*, 1-19.
<https://doi.org/10.1111/joes.12578>

- [8] Chang, M.J., 1999, Does racial diversity matter?: The educational impact of a racially diverse undergraduate population, *Journal of College Student Development*, 40, 377- 395.
- [9] Cutler, D. M., D. W. Elmendorf, et al., 1993, Demographic Characteristics and the Public Bundle, *Public Finance*, 48, 178-198.
- [10] Deryugina, T. and Marx, B. M., 2021, Is the supply of charitable donations fixed? Evidence from deadly tornadoes, *American Economic Review: Insights*, 3, 383-398.
- [11] Fershtman, C. and U. Gneezy, 2001, Discrimination in a Segmented Society: An Experimental Approach, *Quarterly Journal of Economics*, 116, 351-377.
- [12] Fong, C. M. and E. F. P. Luttmer, 2009, What Determines Giving to Hurricane Katrina Victims? Experimental Evidence on Racial Group Loyalty, *American Economic Journal: Applied Economics*, 2009, 64-87.
- [13] Fong, C. M. and E. F. P. Luttmer, 2011, Do Race and Fairness Matter in Generosity? Evidence from a Nationally Representative Charity Experiment?, *Journal of Public Economics*, 95, 372-394.
- [14] Frey, W.H., 2000, The nation is diversifying even faster than predicted, according to new census data, Brookings Institution, Accessed on October 11, 2023 from: <https://www.brookings.edu/articles/new-census-data-shows-the-nation-is-diversifying-even-faster-than-predicted/>
- [15] Jensen, E., et al., 2021, The Chance That Two People Chosen at Random Are of Different Race or Ethnicity Groups Has Increased Since 2010, U.S. Census Bureau, Accessed on October 11, 2023 from: <https://www.census.gov/library/stories/2021/08/2020-united-states-population-more-racially-ethnically-diverse-than-2010.html>
- [16] Jensen, E., et al, 2021, Measuring Racial and Ethnic Diversity for the 2020 Census, Accessed on October 24, 2023 from: <https://www.census.gov/newsroom/blogs/random-samplings/2021/08/measuring-racial-ethnic-diversity-2020-census.html>
- [17] Giving USA, (2024). Giving USA 2024: The Annual Report on Philanthropy for the Year 2023. The Giving Institute. Indiana University Indianapolis.

- [18] Goldin, C. and L. F. Katz, 1999, Human Capital and Social Capital: The Rise of Secondary Schooling in America, 1910 to 1940, *Journal of Interdisciplinary History*, 29, 683-723.
- [19] Gurin, P., 1999, The compelling need for diversity in higher education: Expert testimony in Gratz, et al. v. Bollinger, et al. *Michigan Journal of Race & Law*, 5, 363-425.
- [20] Hirschman, A. O., 1964. The paternity of an index, *The American Economic Review*, 54, 761-762.
- [21] Hungerman, D. M., 2008, Race And Charitable Church Activity, *Economic Inquiry*, 46, 380-400.
- [22] List, J. A. (2011). The market for charitable giving. *Journal of Economic Perspectives*, 25(2), 157-180.
- [23] Miguel, E. and M. K. Gugerty, 2005, Ethnic Diversity, Social Sanctions, and Public Goods in Kenya, *Journal of Public Economics*, 89, 2325-2368.
- [24] Montalvo, J.G. and Marta Reynal-Querol, 2005, Ethnic polarization, potential conflict, and civil wars, *American Economic Review*, 95, 796-816.
- [25] Mungan, M. and B.K. Yörük, 2012, Fundraising and optimal policy rules, *Journal of Public Economic Theory*, 14, 625-652.
- [26] Nathan M., and N. Lee, 2013, Cultural Diversity, Innovation, and Entrepreneurship: Firm-level Evidence from London, *Economic Geography*, 89, 367-394.
- [27] Okten, C. and U. O. Osili, 2004, Contributions in Heterogeneous Communities: Evidence from Indonesia, *Journal of Population Economics*, 17, 603-626.
- [28] Okten, C. and U. O. Osili, 2005, Ethnic diversity and charitable giving, Unpublished Manuscript, IUPUI.
- [29] Qu, H. and L.E. Paarlberg, 2021, Community Diversity and Donor Control: An Empirical Analysis of Contributions to Donor-Advised Funds at Community Foundations, *Administration & Society*, 54, 763-791.
- [30] Poterba, J. M., 1997, Demographic Structure and the Political Economy of Public Education, *Journal of Public Policy Analysis and Management*, 16, 48-66.

- [31] Richard, O.C., M.C. Triana, and M. Li, 2021, The Effects of Racial Diversity Congruence between Upper Management and Lower Management on Firm Productivity, *Academy of Management Journal*, 64, 1355-1382.
- [32] Smith, G.A., 2021, About Three-in-Ten U.S. Adults Are Now Religiously Unaffiliated, Pew Research Center, Accessed on October 30, 2023 from: <https://www.pewresearch.org/religion/2021/12/14/about-three-in-ten-u-s-adults-are-now-religiously-unaffiliated/>.
- [33] Teeselink, B.K. and G. Melios, 2022, Partisanship, Government Responsibility, and Charitable Donations, QPE Working Paper 2022-50.
- [34] United States Census Bureau, 2025, Population and Housing Unit Estimates Tables, available at: <https://www.census.gov/programs-surveys/popest/data/tables.html>
- [35] Vigdor, J. L., 2002, Interpreting Ethnic Fragmentation Effects, *Economics Letters*, 75, 271-276.
- [36] Vigdor, J. L., 2004, Community Composition and Collective Action: Analyzing Initial Mail Response to the 2000 Census, *Review of Economics and Statistics*, 86, 303-312.
- [37] Watson, G., 2021, COVID-19 Tax Relief Added to Increasing Share of Households Paying No Income Tax, Tax Foundation. Accessed on 10/24/2023 from <https://taxfoundation.org/blog/us-households-paying-no-income-tax/>.
- [38] Yörük, B.K., 2008, The power of asking in volunteering: Evidence from a matched sample, *Economics Letters*, 99, 79-84.
- [39] Yörük, B.K., 2009, How responsive are charitable donors to requests to give?, *Journal of Public Economics*, 93, 1111-1117.
- [40] Yörük, B.K., 2011, Do fundraisers select charitable donors based on gender and race? Evidence from survey data, *Journal of Population Economics*, 25, 219-243.
- [41] Yörük, B.K., 2012, Do charitable solicitations matter?: A comparative analysis of fundraising methods, *Fiscal Studies*, 33, 467-487.

Table 1. Shares of ethnic and racial groups in U.S. counties from 2010 to 2020

Shares of ethnic groups	2010	2020	% of counties with increasing share of the ethnic group
Not Hispanic, White alone	0.640 (0.219)	0.599 (0.220)	4.14%
Not Hispanic, Black or African American alone	0.123 (0.128)	0.125 (0.125)	76.93%
Not Hispanic, American Indian and Alaska Native alone	0.007 (0.031)	0.007 (0.031)	82.09%
Not Hispanic, Asian alone	0.048 (0.059)	0.059 (0.068)	94.50%
Not Hispanic, Native Hawaiian and Other Pacific Islander alone	0.002 (0.007)	0.002 (0.007)	80.37%
Not Hispanic, Two or More Races	0.018 (0.015)	0.023 (0.015)	98.98%
Hispanic	0.162 (0.164)	0.184 (0.170)	97.84%

Notes: Source: County level data from the U.S. Census for 2010 and 2020. Sample weighted means are reported. County level adult population (aged 15 or older) is used as a sample weight. Standard deviations are reported in parentheses.

Table 2. Charitable contributions as a fraction of adjusted income based on changes in ethnic fragmentation index over time

Change in Ethnic diversity	1-year change in FI	3-year change in FI	10-year change in FI
Low	0.0199 (0.0082)	0.0196 (0.0085)	0.0151 (0.0072)
Medium	0.0188 (0.0075)	0.0181 (0.0076)	0.0128 (0.0059)
High	0.0186 (0.0083)	0.0192 (0.0080)	0.0132 (0.0072)

Notes: Low, medium, and high levels of change in ethnic diversity are calculated by dividing the sample into three equal parts based on the relevant change in FI index values over 1-, 3-, and 10-year periods. Sample weighted means are reported using adult population (aged 15 or older) as the sample weight. S.D. The standard deviation of the sample weighted means is reported in parenthesis.

Table 3. The effect of ethnic diversity on charitable behavior

	Fraction of tax returns with charitable contributions				Charitable contributions as a fraction of adjusted gross income				Ln(charitable contributions per capita)			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fragmentation index	-0.527*** (0.065)	-0.521*** (0.065)	-0.508*** (0.079)	-0.596*** (0.079)	-0.027*** (0.007)	-0.024*** (0.007)	-0.038*** (0.008)	-0.033*** (0.008)	-2.167*** (0.461)	-1.810*** (0.450)	-3.151*** (0.497)	-2.591*** (0.490)
<i>Shares of ethnic groups</i>												
Black			-0.072 (0.121)	0.094 (0.116)			0.032*** (0.012)	0.032*** (0.012)			2.295*** (0.685)	2.181*** (0.676)
American Indian and Alaska Native			1.407*** (0.380)	0.908*** (0.292)			-0.025 (0.037)	-0.023 (0.036)			-3.961* (2.307)	-2.673 (2.250)
Asian			-0.165 (0.194)	0.033 (0.169)			0.105*** (0.026)	0.095*** (0.027)			6.728*** (1.556)	5.787*** (1.572)
Native Hawaiian and Other Pacific Islander			3.018*** (0.829)	2.118** (0.920)			0.214 (0.449)	0.246 (0.446)			-1.752 (12.904)	2.011 (12.842)
Two or More Races			-1.056* (0.618)	0.548 (0.591)			-0.189** (0.075)	-0.225*** (0.077)			-1.117 (4.308)	-6.372 (4.643)
Hispanic			0.214 (0.138)	0.467*** (0.129)			0.017 (0.013)	0.015 (0.012)			1.843** (0.875)	1.454* (0.837)
Number of Observations	34479	34479	34479	34479	34479	34479	34479	34479	33985	33985	33985	33985
Linear time trends (urban-rural category)	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes: All models include a set of control variables as discussed in the text, county, and year fixed effects, and estimated using the county adult population (aged 15 or older) as a sample weight. Counties are classified into six categories based on NCHS's urban-rural classification scheme. Models that include "linear time trends (urban-rural category)" include the interaction of these categories with linear time trends. Standard errors are reported in parentheses. The signs *, **, and *** represent statistical significance at 10, 5, and 1 percent levels, respectively.

Table 4. The effect of ethnic diversity on charitable behavior: Heterogenous effects based on change in ethnic fragmentation index from 2010 to 2020

	Fraction of tax returns with charitable contributions				Charitable contributions as a fraction of adjusted gross income				Ln(charitable contributions per capita)			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fragmentation index	-0.443*	-0.235*	-0.279	-0.110	-0.024	-0.013	-0.015	-0.049**	-2.196*	-2.173*	-2.525*	-4.794***
	(0.175)	(0.121)	(0.175)	(0.181)	(0.015)	(0.015)	(0.017)	(0.021)	(1.221)	(0.845)	(1.308)	(1.394)
<i>Shares of ethnic groups</i>												
Black			-0.013	-0.552**			0.023	0.044			2.281**	3.826**
			(0.180)	(0.269)			(0.015)	(0.029)			(0.940)	(1.805)
American Indian and Alaska Native			0.589	1.495**			-0.023	-0.068			-1.674	-10.074**
			(0.407)	(0.628)			(0.053)	(0.085)			(3.223)	(4.142)
Asian			0.003	-0.338			0.089**	0.105**			5.775**	7.372***
			(0.226)	(0.312)			(0.037)	(0.041)			(2.444)	(2.275)
Native Hawaiian and Other Pacific Islander			-4.672	2.963***			-0.253	0.499			-52.754	15.252
			(2.901)	(0.964)			(0.507)	(0.565)			(32.434)	(16.032)
Two or More Races			-3.861***	-0.047			-0.248*	-0.258*			8.796	-9.192
			(1.154)	(0.876)			(0.142)	(0.155)			(8.193)	(6.216)
Hispanic			-0.020	0.344*			0.004	0.031			2.015*	1.877
			(0.169)	(0.197)			(0.017)	(0.027)			(1.122)	(1.448)
Number of Observations	11513	11476	11513	11476	11513	11476	11513	11476	11441	11179	11441	11179
Linear time trends (urban-rural category)	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High

Notes: Low, medium, and high levels of change in ethnic diversity are calculated by dividing the sample into three equal parts based on the relevant change in FI index values over a 10-year period from 2010 to 2020. Regression models are estimated for counties with low and high levels of change in ethnic diversity for this period. All models include a set of control variables as discussed in the text, county, and year fixed effects, and estimated using the county adult population (aged 15 or older) as a sample weight. Standard errors are reported in parentheses. The signs *, **, and *** represent statistical significance at 10, 5, and 1 percent levels, respectively.

Table 5. The effect of ethnic diversity on charitable behavior: Subsample analysis

	Fraction of tax returns with charitable contributions		Charitable contributions as a fraction of adjusted gross income		Ln(charitable contributions per capita)	
<i>Median income</i>						
1 st quartile	-0.021 (0.090)	0.089 (0.103)	-0.038** (0.015)	-0.044*** (0.016)	-2.566** (1.073)	-3.297*** (1.032)
2 nd quartile	-0.340*** (0.097)	-0.111 (0.077)	-0.021** (0.010)	-0.011 (0.010)	-1.425*** (0.444)	-2.041*** (0.558)
3 rd quartile	-0.242** (0.100)	-0.116 (0.129)	-0.030*** (0.010)	-0.028** (0.011)	-2.267*** (0.684)	-3.153*** (0.755)
4 th quartile	-0.429*** (0.087)	-0.596*** (0.106)	-0.029*** (0.011)	-0.043*** (0.012)	-2.165*** (0.603)	-2.741*** (0.683)
<i>Percent of people with university degree</i>						
1 st quartile	0.090 (0.085)	0.131 (0.089)	-0.008 (0.007)	-0.005 (0.010)	-2.101*** (0.733)	-1.674** (0.796)
2 nd quartile	-0.147 (0.128)	-0.138 (0.133)	-0.029*** (0.009)	-0.025** (0.011)	-1.789*** (0.601)	-1.439** (0.661)
3 rd quartile	-0.203** (0.096)	-0.184* (0.100)	-0.013 (0.008)	-0.027** (0.012)	-1.595*** (0.424)	-2.450*** (0.600)
4 th quartile	-0.622*** (0.093)	-0.864*** (0.103)	-0.034*** (0.010)	-0.049*** (0.011)	-2.951*** (0.554)	-3.626*** (0.589)
<i>Unemployment rate</i>						
1 st quartile	-0.760*** (0.160)	-0.998*** (0.228)	0.031 (0.038)	0.080 (0.083)	0.608 (1.208)	0.708 (2.416)
2 nd quartile	-0.627*** (0.124)	-0.491*** (0.178)	-0.025** (0.012)	-0.022 (0.019)	-2.373*** (0.711)	-3.128*** (0.866)
3 rd quartile	-0.433*** (0.109)	-0.354*** (0.128)	-0.021 (0.013)	-0.034*** (0.013)	-2.873*** (0.874)	-4.356*** (0.794)
4 th quartile	-0.345*** (0.111)	-0.343** (0.135)	-0.005 (0.009)	-0.001 (0.011)	-1.901*** (0.678)	-2.517*** (0.842)
Controls for shares of ethnic groups	No	Yes	No	Yes	No	Yes

Notes: The coefficient estimates on the ethnic FI are reported. All models include a set of control variables as discussed in the text, county, and year fixed effects, and estimated using the county adult population (aged 15 or older) as a sample weight. Standard errors are reported in parentheses. The signs *, **, and *** represent statistical significance at 10, 5, and 1 percent levels, respectively.

Table 6. The effect of ethnic diversity on charitable behavior: County classification based on population and geographical location

County classification	Fraction of tax returns with charitable contributions		Charitable contributions as a fraction of adjusted		Ln(charitable contributions per capita)	
Large central metro	-0.837***	-1.123***	-0.061**	-0.051*	-2.741	-2.595
	(0.216)	(0.231)	(0.029)	(0.030)	(1.704)	(1.831)
	[733]	[733]	[733]	[733]	[733]	[733]
Large fringe metro	-0.454***	-0.524***	-0.026***	-0.032***	-2.213***	-3.248***
	(0.113)	(0.118)	(0.010)	(0.010)	(0.601)	(0.660)
	[4005]	[4005]	[4005]	[4005]	[4005]	[4005]
Medium metro	-0.264**	-0.261*	-0.008	-0.023	-1.553**	-2.162***
	(0.126)	(0.138)	(0.021)	(0.017)	(0.754)	(0.775)
	[3972]	[3972]	[3972]	[3972]	[3968]	[3968]
Small metro	-0.453***	-0.253**	-0.026**	-0.035**	-0.506	-0.911
	(0.094)	(0.111)	(0.011)	(0.016)	(0.661)	(0.807)
	[3876]	[3876]	[3876]	[3876]	[3860]	[3860]
Micropolitan	-0.308***	-0.352***	-0.007	-0.010	0.035	-1.101
	(0.099)	(0.107)	(0.009)	(0.012)	(0.570)	(0.728)
	[7210]	[7210]	[7210]	[7210]	[7169]	[7169]
Noncore	-0.212***	-0.354***	-0.029***	-0.037***	-2.450***	-2.302***
	(0.062)	(0.071)	(0.006)	(0.009)	(0.543)	(0.736)
	[14683]	[14683]	[14683]	[14683]	[14250]	[14250]
Coastal	-0.535***	-0.721***	-0.039***	-0.058***	-3.255***	-4.595***
	(0.129)	(0.148)	(0.012)	(0.014)	(0.929)	(0.987)
	[2735]	[2735]	[2735]	[2735]	[2690]	[2690]
Controls for shares of ethnic groups	No	Yes	No	Yes	No	Yes

Notes: The coefficient estimates on the ethnic FI are reported. All models include a set of control variables as discussed in the text, county, and year fixed effects, and estimated using the county adult population (aged 15 or older) as a sample weight. Standard errors are reported in parentheses. The number of observations is reported in brackets. County classification is based on 2013 and 2006 NCHS Urban-Rural Classification Scheme for Counties and 2016 data release of U.S. Coastline Counties by U.S. Census Bureau, Population Division. The signs *, **, and *** represent statistical significance at 10, 5, and 1 percent levels, respectively.

Table 7. The effect of ethnic diversity on charitable behavior: Robustness checks

	Fraction of tax returns with charitable contributions		Charitable contributions as a fraction of adjusted gross income		Ln(charitable contributions per capita)	
<i>Estimates of fragmentation index</i>						
Full sample	-0.527*** (0.065) [34479]	-0.508*** (0.079) [34479]	-0.027*** (0.007) [34479]	-0.038*** (0.008) [34479]	-2.167*** (0.461) [33985]	-3.151*** (0.497) [33985]
Census years only	-0.417*** (0.085) [6270]	-0.399*** (0.098) [6270]	-0.029** (0.013) [6270]	-0.039*** (0.015) [6270]	-2.462*** (0.833) [6102]	-3.350*** (0.881) [6102]
Exclude 2017-2020	-0.418*** (0.050) [21926]	-0.476*** (0.053) [21926]	-0.038* (0.023) [21926]	-0.065** (0.032) [21926]	-1.482* (0.779) [21840]	-2.143** (1.047) [21840]
Control for fundraising activity	-0.556*** (0.069) [26260]	-0.555*** (0.085) [26260]	-0.024*** (0.007) [26260]	-0.036*** (0.007) [26260]	-1.819*** (0.392) [26090]	-2.821*** (0.464) [26090]
<i>Estimates of polarization index</i>						
Full sample	-0.176*** (0.041) [34479]	-0.148*** (0.043) [34479]	-0.019*** (0.004) [34479]	-0.017*** (0.003) [34479]	-1.930*** (0.234) [33985]	-1.849*** (0.236) [33985]
Census years only	-0.116** (0.056) [6270]	-0.104* (0.055) [6270]	-0.019*** (0.006) [6270]	-0.017*** (0.005) [6270]	-1.988*** (0.390) [6102]	-1.889*** (0.382) [6102]
Exclude 2017-2020	-0.215*** (0.028) [21926]	-0.189*** (0.030) [21926]	-0.024*** (0.007) [21926]	-0.027*** (0.006) [21926]	-0.771*** (0.251) [21840]	-0.741*** (0.233) [21840]
Control for fundraising activity	-0.201*** (0.044) [26260]	-0.168*** (0.046) [26260]	-0.019*** (0.004) [26260]	-0.018*** (0.004) [26260]	-1.825*** (0.249) [26090]	-1.788*** (0.261) [26090]
Controls for shares of ethnic groups	No	Yes	No	Yes	No	Yes

Notes: The coefficient estimates on the ethnic FI are reported. All models include a set of control variables as discussed in the text, county, and year fixed effects, and estimated using the county adult population (aged 15 or older) as a sample weight. Standard errors are reported in parentheses. The number of observations is reported in brackets. The signs *, **, and *** represent statistical significance at 10, 5, and 1 percent levels, respectively.

Table 8. The effect of ethnic diversity on charitable organizations

	Number of charitable organizations per 1,000 people				Ln(Fundraising spending per capita)				Fundraising spending as a fraction of total contributions received			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fragmentation index	-0.072 (0.247)	-0.021 (0.242)	1.076*** (0.309)	0.934*** (0.346)	-2.858*** (1.017)	-2.877*** (1.045)	-1.553 (1.289)	-1.922 (1.332)	-0.028 (0.019)	-0.026 (0.019)	-0.028 (0.023)	-0.028 (0.023)
<i>Shares of ethnic groups</i>												
Black			-1.650*** (0.616)	-1.387** (0.633)			-2.780 (2.502)	-2.280 (2.503)			0.014 (0.033)	0.018 (0.034)
American Indian and Alaska Native			0.575 (1.689)	-0.621 (1.818)			17.904 (16.479)	17.266 (16.501)			0.343 (0.216)	0.331 (0.220)
Asian			-1.046 (0.759)	-0.857 (0.907)			-5.113** (2.262)	-4.203* (2.350)			0.016 (0.035)	0.021 (0.035)
Native Hawaiian and Other Pacific Islander			-2.245 (4.836)	-4.031 (4.826)			-21.543 (22.639)	-24.541 (22.770)			0.158 (0.323)	0.123 (0.320)
Two or More Races			-17.879*** (3.021)	-14.773*** (3.427)			-0.144 (14.150)	3.901 (14.078)			-0.155 (0.216)	-0.126 (0.220)
Hispanic			-2.495*** (0.630)	-2.064*** (0.719)			-3.029* (1.767)	-2.409 (1.829)			-0.036 (0.033)	-0.033 (0.033)
Number of Observations	26559	26559	26559	26559	17329	17329	17329	17329	26262	26262	26262	26262
Linear time trends (urban-rural category)	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes: All models include a set of control variables as discussed in the text, county, and year fixed effects, and estimated using the county adult population (aged 15 or older) as a sample weight. Counties are classified into six categories based on NCHS's urban-rural classification scheme. Models that include "linear time trends (urban-rural category)" include the interaction of these categories with linear time trends. Standard errors are reported in parentheses. The signs ** and *** represent statistical significance at 5 and 1 percent levels, respectively.

Table 9. The effect of ethnic diversity on giving and the probability of being asked to give

	Share of income contributed	Share of income contributed (non-itemizers)	Probability of being asked to give
Fragmentation index	-304.043*** (61.320)	-225.523*** (78.777)	-1.669 (1.134)
<i>Shares of ethnic groups</i>			
Black	373.821*** (79.803)	246.481*** (85.429)	4.883*** (1.729)
American Indian and Alaska Native	536.726*** (115.034)	246.664** (105.193)	18.978*** (1.985)
Asian	358.659*** (83.006)	486.511*** (187.231)	11.480*** (1.758)
Native Hawaiian and Other Pacific Islander	7040.843*** (1496.947)	-6050.568 (7183.132)	-481.036*** (49.350)
Two or More Races	-764.434** (330.701)	2079.125*** (565.757)	-135.314*** (15.465)
Hispanic	542.173*** (107.014)	343.964** (161.446)	-15.980*** (1.638)
Number of Observations	3747	1874	4137

Notes: All models include individual and county level controls and county fixed effects and estimated using sample weights from Survey of Giving and Volunteering in the United States (2001). Standard errors are reported in parentheses. The signs ** and *** represent statistical significance at 5 and 1 percent levels, respectively.

Table 10. The effect of political diversity on charitable behavior

	Fraction of tax returns with charitable contributions				Charitable contributions as a fraction of adjusted gross income				Ln(charitable contributions per capita)			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fragmentation index	0.208*** (0.061)	0.243*** (0.060)	0.211*** (0.068)	0.262*** (0.069)	-0.006 (0.007)	-0.005 (0.007)	-0.010 (0.008)	-0.010 (0.008)	0.044 (0.484)	-0.101 (0.475)	-0.153 (0.538)	-0.455 (0.538)
<i>Shares of political groups</i>												
Republican			0.147*** (0.046)	0.058 (0.044)			0.007 (0.005)	0.008 (0.005)			-0.220 (0.312)	0.168 (0.325)
Democrat			-0.230*** (0.045)	-0.187*** (0.041)			0.019*** (0.005)	0.018*** (0.005)			1.475*** (0.334)	1.447*** (0.341)
Other			0.068 (0.083)	-0.010 (0.079)			0.007 (0.010)	0.009 (0.010)			-0.035 (0.679)	0.514 (0.702)
Number of Observations	9342	9342	9342	9342	9342	9342	9342	9342	9167	9167	9167	9167
Linear time trends (urban-rural category)	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

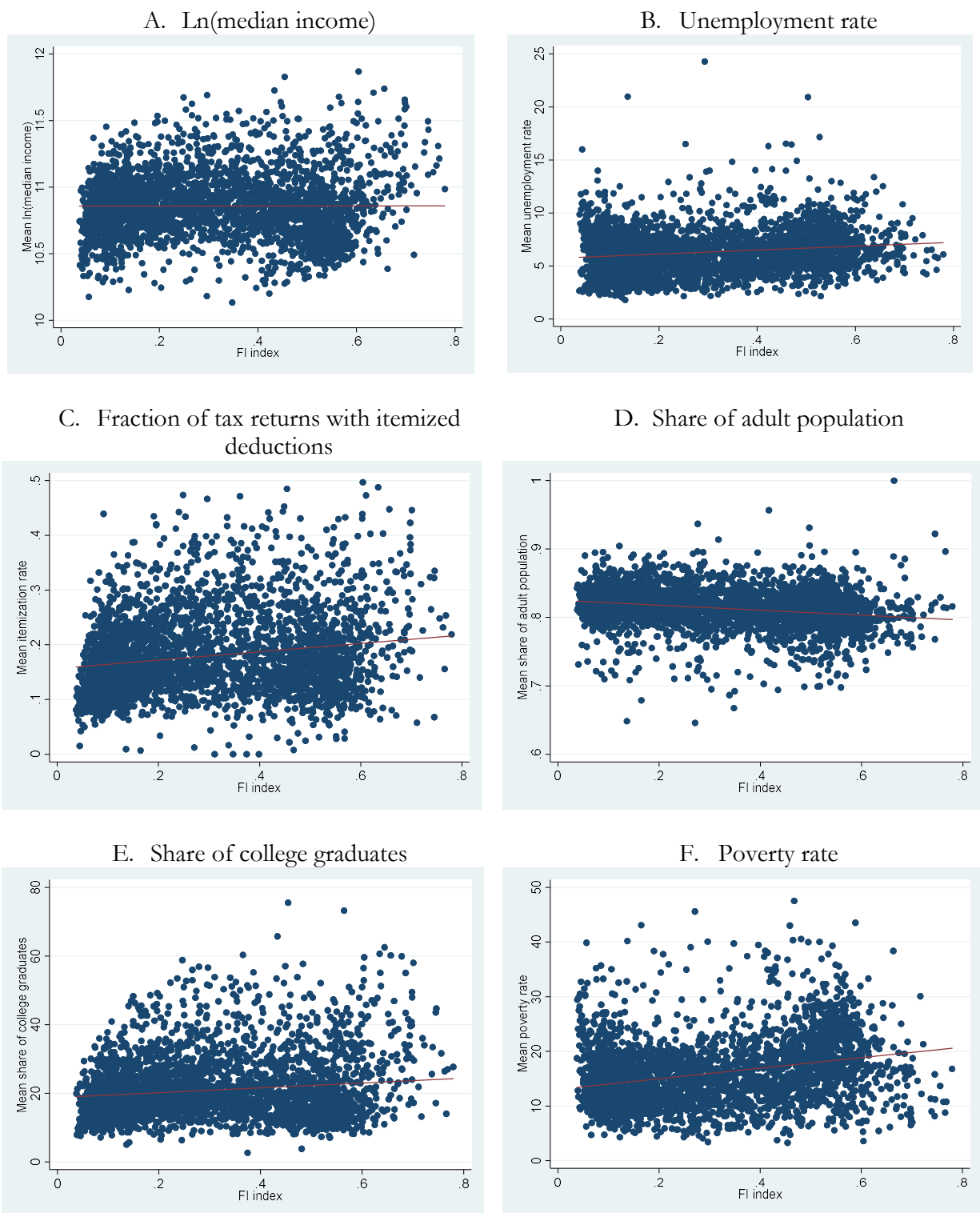
Notes: All models include a set of control variables as discussed in the text, county, and year fixed effects, and estimated using the county adult population (aged 15 or older) as a sample weight. Counties are classified into six categories based on NCHS's urban-rural classification scheme. Models that include "linear time trends (urban-rural category)" include the interaction of these categories with linear time trends. Standard errors are reported in parentheses. The excluded category is those who are not affiliated with any political group. The sign *** represent statistical significance at 1 percent level.

Table 11. The effect of religious diversity on charitable behavior

	Fraction of tax returns with charitable contributions				Charitable contributions as a fraction of adjusted gross income				Ln(charitable contributions per capita)			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fragmentation index	-0.087 (0.089)	-0.101 (0.090)	-0.086 (0.116)	-0.113 (0.123)	-0.011 (0.012)	-0.010 (0.012)	-0.009 (0.017)	-0.009 (0.018)	-0.781 (0.857)	-0.716 (0.867)	-0.630 (1.211)	-0.465 (1.223)
<i>Shares of religious groups</i>												
Black Protestant			0.037 (0.247)	0.074 (0.244)			0.013 (0.029)	0.015 (0.027)			0.282 (2.292)	0.155 (2.214)
Buddhist			-0.332 (0.457)	-0.226 (0.495)			-0.001 (0.079)	0.004 (0.076)			-0.963 (5.339)	-1.047 (5.499)
Catholic			-0.201 (0.155)	-0.196 (0.155)			-0.003 (0.023)	-0.002 (0.023)			-0.277 (1.623)	-0.325 (1.595)
Evangelical Protestant			-0.232* (0.136)	-0.224 (0.141)			0.003 (0.024)	0.004 (0.025)			0.008 (1.724)	-0.020 (1.700)
Hindu			-0.345 (0.385)	-0.296 (0.366)			-0.068 (0.068)	-0.067 (0.070)			-3.724 (4.096)	-3.901 (4.387)
Muslim			-0.656*** (0.217)	-0.630*** (0.232)			-0.015 (0.024)	-0.016 (0.027)			-1.869 (1.745)	-2.231 (1.913)
Judaism			-0.322 (0.344)	-0.257 (0.331)			-0.079 (0.063)	-0.073 (0.064)			-3.989 (4.128)	-3.475 (4.105)
Mainline Protestant			-0.108 (0.222)	-0.048 (0.216)			0.014 (0.030)	0.016 (0.031)			1.399 (2.124)	1.310 (2.155)
Orthodox			-0.641 (0.761)	-0.466 (0.792)			0.026 (0.107)	0.037 (0.112)			3.347 (7.561)	3.662 (7.670)
Number of Observations	432	432	432	432	432	432	432	432	432	432	432	432
Linear time trends (urban-rural category)	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes: All models include a set of control variables as discussed in the text, county, and year fixed effects, and estimated using the county adult population (aged 15 or older) as a sample weight. Counties are classified into six categories based on NCHS's urban-rural classification scheme. Models that include "linear time trends (urban-rural category)" include the interaction of these categories with linear time trends. Standard errors are reported in parentheses. The signs ** and *** represent statistical significance at 5 and 1 percent levels, respectively.

Figure 1. Relationship between the selected variables and the ethnic fragmentation index



Notes: Data from 2010-2020 Census and IRS tax return data are aggregated at the county level. Mean values of variables are plotted.

Appendix

Table A1. Sample statistics for main outcome variables

	Fraction of tax returns with charitable contributions		Charitable contributions as a fraction of adjusted gross income		Ln(charitable contributions per capita)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Full sample	0.204	0.105	0.019	0.008	6.549	0.614
Ethnic diversity: Low	0.145	0.090	0.013	0.006	5.881	0.604
Ethnic diversity: Medium	0.201	0.112	0.017	0.008	6.398	0.575
Ethnic diversity: High	0.214	0.101	0.021	0.008	6.705	0.548
Religious diversity: Low	0.156	0.119	0.017	0.010	6.184	0.758
Religious diversity: Medium	0.162	0.114	0.016	0.007	6.392	0.659
Religious diversity: High	0.174	0.115	0.018	0.007	6.516	0.606
Political diversity: Low	0.186	0.095	0.020	0.009	6.500	0.766
Political diversity: Medium	0.180	0.104	0.019	0.008	6.538	0.647
Political diversity: High	0.201	0.120	0.017	0.007	6.540	0.571

Notes: Low, medium, and high levels of diversity are calculated by dividing the sample into three equal parts based on the relevant FI index values. Sample weighted means are reported using adult population (aged 15 or older) as the sample weight. S.D. denotes the standard deviation of the sample weighted mean.

Table A2. Sample statistics for shares of ethnic groups, and ethnic fragmentation and polarization indices

	Full sample	Median income			
		1 st quartile	2 nd quartile	3 rd quartile	4 th quartile
Fragmentation index	0.470 (0.185)	0.383 (0.198)	0.400 (0.180)	0.452 (0.184)	0.508 (0.175)
Polarization index	0.663 (0.202)	0.618 (0.287)	0.621 (0.240)	0.657 (0.214)	0.682 (0.167)
<i>Shares of ethnic groups</i>					
Black	0.124 (0.127)	0.202 (0.209)	0.154 (0.156)	0.131 (0.121)	0.103 (0.096)
American Indian and Alaska Native	0.007 (0.031)	0.023 (0.089)	0.010 (0.033)	0.008 (0.023)	0.004 (0.013)
Asian	0.054 (0.064)	0.012 (0.015)	0.019 (0.019)	0.030 (0.026)	0.079 (0.075)
Native Hawaiian and Other Pacific Islander	0.002 (0.007)	0.000 (0.001)	0.001 (0.002)	0.001 (0.005)	0.002 (0.008)
Two or More Races	0.021 (0.015)	0.014 (0.011)	0.018 (0.009)	0.019 (0.012)	0.023 (0.017)
Hispanic	0.173 (0.167)	0.160 (0.257)	0.135 (0.189)	0.168 (0.168)	0.187 (0.142)
White	0.619 (0.220)	0.588 (0.292)	0.664 (0.233)	0.642 (0.211)	0.601 (0.207)

Notes: Sample weighted means are reported using adult population (aged 15 or older) as the sample weight. Standard deviations are reported in parentheses. Income quartiles are based on county level median income adjusted for 2020 prices.

Table A3. Sample statistics for shares of religious and political groups and religious and political fragmentation and polarization indices

	Full sample	Median income			
		1 st quartile	2 nd quartile	3 rd quartile	4 th quartile
Religious fragmentation index	0.613 (0.121)	0.498 (0.159)	0.592 (0.141)	0.626 (0.111)	0.626 (0.108)
Religious polarization index	0.728 (0.092)	0.688 (0.147)	0.730 (0.104)	0.747 (0.086)	0.726 (0.081)
<i>Shares of religious groups</i>					
Black Protestant	0.042 (0.051)	0.087 (0.089)	0.062 (0.066)	0.054 (0.055)	0.030 (0.034)
Buddhist	0.010 (0.014)	0.009 (0.014)	0.004 (0.008)	0.009 (0.018)	0.011 (0.014)
Catholic	0.381 (0.210)	0.207 (0.247)	0.259 (0.201)	0.335 (0.194)	0.441 (0.186)
Evangelical Protestant	0.332 (0.204)	0.539 (0.254)	0.443 (0.222)	0.374 (0.185)	0.271 (0.170)
Hindu	0.009 (0.014)	0.009 (0.016)	0.006 (0.016)	0.005 (0.008)	0.011 (0.015)
Muslim	0.029 (0.031)	0.026 (0.027)	0.024 (0.036)	0.022 (0.029)	0.031 (0.030)
Judaism	0.018 (0.030)	0.013 (0.010)	0.024 (0.044)	0.012 (0.015)	0.020 (0.032)
Mainline Protestant	0.129 (0.098)	0.139 (0.106)	0.157 (0.110)	0.152 (0.108)	0.114 (0.087)
Orthodox	0.009 (0.010)	0.006 (0.007)	0.008 (0.011)	0.007 (0.012)	0.010 (0.009)
Other	0.071 (0.097)	0.046 (0.062)	0.059 (0.080)	0.060 (0.082)	0.080 (0.106)
Political fragmentation index	0.629 (0.048)	0.596 (0.057)	0.617 (0.045)	0.628 (0.042)	0.636 (0.047)
Political polarization index	0.867 (0.052)	0.872 (0.041)	0.870 (0.030)	0.864 (0.037)	0.866 (0.062)
<i>Shares of political groups</i>					
Republican	0.265 (0.108)	0.278 (0.123)	0.283 (0.108)	0.275 (0.099)	0.255 (0.109)
Democrat	0.284 (0.101)	0.221 (0.110)	0.237 (0.099)	0.257 (0.090)	0.315 (0.094)
Other	0.015 (0.016)	0.010 (0.009)	0.013 (0.012)	0.015 (0.014)	0.017 (0.019)
Not affiliated	0.433 (0.099)	0.491 (0.097)	0.466 (0.088)	0.451 (0.091)	0.410 (0.099)

Notes: Sample weighted means are reported using adult population (aged 15 or older) as the sample weight. Standard deviations are reported in parentheses. Income quartiles are based on county level median income adjusted for 2020 prices.

Table A4. The effect of ethnic diversity on charitable behavior: Models with squared terms of shares of different ethnic groups

	Fraction of tax returns with charitable contributions		Charitable contributions as a fraction of adjusted gross income		Ln(charitable contributions per capita)	
<i>Shares of ethnic groups</i>						
Black	0.169 (0.419)	0.528 (0.404)	0.113*** (0.036)	0.086** (0.037)	5.638* (3.075)	3.779 (3.207)
American Indian and Alaska Native	3.505*** (0.735)	2.480*** (0.602)	-0.026 (0.073)	-0.042 (0.070)	-8.219* (4.531)	-6.749 (4.541)
Asian	-1.041** (0.420)	-0.480 (0.422)	0.063* (0.036)	0.027 (0.037)	7.701*** (2.660)	4.952* (2.753)
Native Hawaiian and Other Pacific Islander	3.664*** (1.191)	2.690** (1.269)	0.393 (0.724)	0.409 (0.731)	6.995 (20.737)	10.097 (21.015)
Two or More Races	-2.196*** (0.734)	-0.210 (0.708)	-0.207** (0.098)	-0.280*** (0.099)	1.653 (6.081)	-6.251 (6.560)
Hispanic	0.445 (0.364)	0.794** (0.359)	0.035 (0.030)	0.013 (0.029)	5.956** (2.771)	4.319 (2.822)
<i>Shares of ethnic groups (squared terms)</i>						
White	0.509** (0.209)	0.705*** (0.209)	0.052*** (0.015)	0.034** (0.016)	5.043*** (1.368)	3.598** (1.507)
Black	0.150 (0.325)	0.080 (0.308)	-0.069** (0.031)	-0.053* (0.031)	0.791 (2.465)	1.616 (2.491)
American Indian and Alaska Native	-4.383*** (0.752)	-2.690*** (0.628)	0.077 (0.091)	0.071 (0.092)	18.744*** (5.647)	14.748*** (5.416)
Asian	2.631*** (0.728)	2.060*** (0.677)	0.165** (0.081)	0.191** (0.081)	4.861 (4.946)	6.725 (4.754)
Native Hawaiian and Other Pacific Islander	-28.336** (12.984)	-15.865 (17.904)	-4.063 (7.212)	-4.385 (7.339)	-97.318 (250.523)	-140.805 (255.698)
Two or More Races	13.646*** (4.521)	9.178** (4.387)	0.550 (0.511)	0.839* (0.506)	-24.447 (40.825)	0.572 (39.956)
Hispanic	0.232 (0.257)	0.281 (0.251)	0.032 (0.029)	0.039 (0.026)	-0.455 (2.753)	-0.267 (2.520)
Number of Observations	34479	34479	34479	34479	33985	33985
Linear time trends (urban-rural category)	No	Yes	No	Yes	No	Yes

Notes: All models include a set of control variables as discussed in the text, county, and year fixed effects, and estimated using the county adult population (aged 15 or older) as a sample weight. Counties are classified into six categories based on NCHS's urban-rural classification scheme. Models that include "linear time trends (urban-rural category)" include the interaction of these categories with linear time trends. Standard errors are reported in parentheses. The signs *, **, and *** represent statistical significance at 10, 5, and 1 percent levels, respectively.

Table A5. The effect of political diversity on charitable behavior: Models with squared terms of shares of different political groups

	Fraction of tax returns with charitable contributions		Charitable contributions as a fraction of adjusted gross income		Ln(charitable contributions per capita)	
<i>Shares of political groups</i>						
Republican	-1.430*** (0.226)	-1.309*** (0.225)	-0.063* (0.033)	-0.061* (0.033)	1.157 (2.030)	1.618 (1.968)
Democrat	-0.969*** (0.196)	-0.799*** (0.197)	-0.064*** (0.021)	-0.064*** (0.021)	-1.604 (1.458)	-1.583 (1.432)
Other	-0.928*** (0.233)	-0.851*** (0.228)	-0.091*** (0.028)	-0.088*** (0.028)	1.401 (1.762)	2.096 (1.729)
<i>Shares of political groups (squared terms)</i>						
Republican	1.050*** (0.120)	0.861*** (0.119)	0.042 (0.028)	0.042 (0.028)	-2.826* (1.475)	-2.579* (1.417)
Democrat	-0.198* (0.103)	-0.281*** (0.103)	0.063*** (0.021)	0.063*** (0.021)	4.102*** (1.157)	4.411*** (1.144)
Other	1.110* (0.592)	0.797 (0.567)	0.360*** (0.094)	0.355*** (0.094)	-13.231** (5.429)	-13.684** (5.439)
Not affiliated	-1.075*** (0.200)	-0.992*** (0.200)	-0.048*** (0.018)	-0.047*** (0.018)	-0.689 (1.383)	-0.339 (1.347)
Number of Observations	9342	9342	9342	9342	9167	9167
Linear time trends (urban-rural category)	No	Yes	No	Yes	No	Yes

Notes: All models include a set of control variables as discussed in the text, county, and year fixed effects, and estimated using the county adult population (aged 15 or older) as a sample weight. Counties are classified into six categories based on NCHS's urban-rural classification scheme. Models that include "linear time trends (urban-rural category)" include the interaction of these categories with linear time trends. Standard errors are reported in parentheses. The signs *, **, and *** represent statistical significance at 10, 5, and 1 percent levels, respectively.

Table A6. The effect of political polarization on charitable behavior

	Fraction of tax returns with charitable contributions				Charitable contributions as a fraction of adjusted gross income				Ln(charitable contributions per capita)			
Polarization index	0.042 (0.033)	0.036 (0.032)	0.070 (0.065)	0.065 (0.062)	0.010 (0.008)	0.010 (0.008)	0.008 (0.008)	0.008 (0.008)	0.144 (0.420)	0.072 (0.411)	-0.375 (0.574)	-0.479 (0.554)
<i>Shares of political groups</i>												
Republican			0.196*** (0.044)	0.129*** (0.042)			0.002 (0.006)	0.003 (0.006)			-0.211 (0.314)	0.093 (0.324)
Democrat			-0.188*** (0.044)	-0.133*** (0.040)			0.015*** (0.005)	0.014*** (0.005)			1.498*** (0.296)	1.411*** (0.306)
Other			0.289*** (0.080)	0.255*** (0.080)			0.003 (0.010)	0.005 (0.010)			-0.389 (0.786)	-0.164 (0.770)
Number of Observations	9342	9342	9342	9342	9342	9342	9342	9342	9167	9167	9167	9167
Linear time trends (urban-rural category)	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes: All models include a set of control variables as discussed in the text, county, and year fixed effects, and estimated using the county adult population (aged 15 or older) as a sample weight. Counties are classified into six categories based on NCHS's urban-rural classification scheme. Models that include "linear time trends (urban-rural category)" include the interaction of these categories with linear time trends. Standard errors are reported in parentheses. The signs ** and *** represent statistical significance at 5 and 1 percent levels, respectively.

Table A7. The effect of religious diversity on charitable behavior: Models with squared terms of shares of different religious groups

	Fraction of tax returns with charitable contributions		Charitable contributions as a fraction of adjusted gross income		Ln(charitable contributions per capita)	
<i>Shares of religious groups</i>						
Black Protestant	-0.108 (0.352)	-0.074 (0.348)	0.008 (0.038)	0.010 (0.037)	-1.047 (3.386)	-0.974 (3.346)
Buddhist	0.161 (0.987)	0.100 (0.970)	0.102 (0.123)	0.097 (0.125)	2.803 (9.872)	2.427 (9.957)
Catholic	0.068 (0.379)	0.159 (0.371)	0.002 (0.045)	0.004 (0.046)	-1.226 (3.160)	-1.369 (3.297)
Evangelical Protestant	-0.455* (0.267)	-0.408 (0.252)	0.024 (0.048)	0.027 (0.046)	-0.687 (3.457)	-0.581 (3.337)
Hindu	-0.884 (0.885)	-0.695 (0.862)	-0.158 (0.121)	-0.155 (0.126)	-7.106 (8.402)	-7.860 (8.961)
Muslim	-1.178*** (0.386)	-1.073*** (0.412)	-0.001 (0.046)	-0.001 (0.051)	-0.985 (3.512)	-1.567 (3.826)
Judaism	-0.312 (0.804)	-0.237 (0.813)	-0.114 (0.120)	-0.111 (0.122)	-10.879 (7.874)	-10.844 (8.046)
Mainline Protestant	-0.477 (0.487)	-0.367 (0.487)	0.012 (0.047)	0.019 (0.048)	0.958 (3.276)	1.357 (3.306)
Othodox	0.509 (1.782)	0.490 (1.770)	0.313 (0.204)	0.290 (0.204)	19.916 (17.123)	17.116 (17.076)
<i>Shares of religious groups (squared terms)</i>						
Black Protestant	0.049 (0.150)	0.054 (0.154)	4.808 (12.123)	4.073 (12.158)	0.773 (1.589)	0.989 (1.501)
Buddhist	-1.141 (1.052)	-0.999 (1.025)	-61.512 (82.884)	-56.980 (80.392)	-4.693 (8.838)	-1.556 (8.364)
Catholic	0.014 (0.037)	0.014 (0.038)	1.033 (2.622)	1.071 (2.661)	-0.262 (0.296)	-0.281 (0.289)
Evangelical Protestant	-0.010 (0.047)	-0.010 (0.046)	0.880 (3.516)	0.586 (3.516)	0.343 (0.384)	0.388 (0.351)
Hindu	1.470 (1.223)	1.489 (1.243)	46.263 (85.993)	55.192 (90.733)	6.848 (10.660)	5.940 (10.441)
Muslim	-0.022 (0.199)	-0.020 (0.204)	-8.209 (16.716)	-6.784 (16.968)	3.852** (1.511)	3.719** (1.614)
Judaism	0.285 (0.418)	0.305 (0.420)	28.623 (26.011)	30.056 (25.720)	1.520 (2.597)	1.693 (2.563)
Mainline Protestant	0.058 (0.103)	0.051 (0.109)	0.974 (7.081)	-0.632 (7.392)	1.445 (1.069)	1.420 (1.114)
Othodox	-7.643* (4.213)	-6.807 (4.200)	-471.853 (387.090)	-392.438 (383.084)	-35.483 (40.601)	-26.941 (40.000)
Other	0.092 (0.073)	0.103 (0.074)	1.691 (5.406)	1.913 (5.320)	0.301 (0.633)	0.509 (0.702)
Number of Observations	432	432	432	432	432	432
Linear time trends (urban-rural category)	No	Yes	No	Yes	No	Yes

Notes: All models include a set of control variables as discussed in the text, county, and year fixed effects, and estimated using the county adult population (aged 15 or older) as a sample weight. Counties are classified into six categories based on NCHS's urban-rural classification scheme. Models that include "linear time trends (urban-rural category)" include the interaction of these categories with linear time trends. Standard errors are reported in parentheses. The signs *, **, and *** represent statistical significance at 10, 5 and 1 percent levels, respectively.

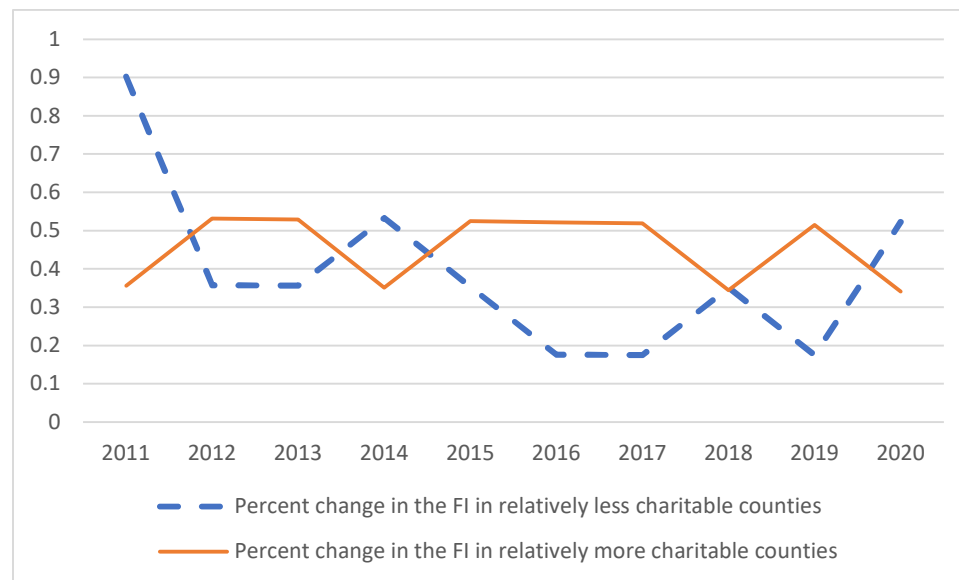
Table A8. The effect of religious polarization on charitable behavior

	Fraction of tax returns with charitable contributions				Charitable contributions as a fraction of adjusted gross income				Ln(charitable contributions per capita)			
Polarization index	0.271*	0.265*	0.331**	0.334**	0.021	0.020	0.016	0.016	1.075	1.050	0.603	0.594
	(0.148)	(0.142)	(0.142)	(0.139)	(0.014)	(0.014)	(0.015)	(0.015)	(0.991)	(0.993)	(1.237)	(1.215)
<i>Shares of religious groups</i>												
Black Protestant			0.005	0.039			0.012	0.013			0.284	0.114
			(0.252)	(0.243)			(0.029)	(0.028)			(2.324)	(2.245)
Buddhist			-0.165	-0.069			0.006	0.011			-0.668	-0.794
			(0.467)	(0.504)			(0.077)	(0.074)			(5.200)	(5.428)
Catholic			-0.260**	-0.239*			-0.002	-0.002			-0.004	-0.202
			(0.127)	(0.135)			(0.019)	(0.019)			(1.387)	(1.397)
Evangelical Protestant			-0.342**	-0.321**			0.002	0.002			0.134	-0.021
			(0.141)	(0.143)			(0.021)	(0.022)			(1.617)	(1.623)
Hindu			-0.314	-0.279			-0.069	-0.068			-3.865	-3.994
			(0.310)	(0.286)			(0.065)	(0.067)			(4.009)	(4.272)
Muslim			-0.676***	-0.658***			-0.016	-0.018			-1.917	-2.305
			(0.181)	(0.191)			(0.023)	(0.026)			(1.756)	(1.893)
Judaism			-0.175	-0.110			-0.074	-0.066			-3.809	-3.256
			(0.303)	(0.290)			(0.064)	(0.064)			(4.152)	(4.104)
Mainline Protestant			-0.130	-0.067			0.015	0.017			1.551	1.362
			(0.217)	(0.210)			(0.029)	(0.030)			(2.109)	(2.152)
Othodox			-0.595	-0.443			0.025	0.036			3.204	3.564
			(0.661)	(0.690)			(0.103)	(0.108)			(7.439)	(7.560)
Number of Observations	432	432	432	432	432	432	432	432	432	432	432	432
Linear time trends (urban-rural category)	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

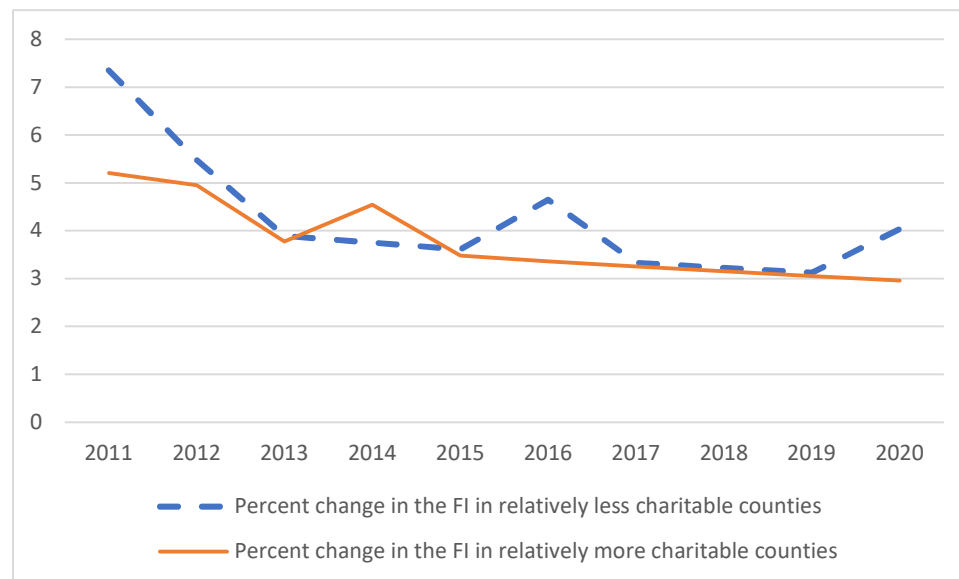
Notes: All models include a set of control variables as discussed in the text, county, and year fixed effects, and estimated using the county adult population (aged 15 or older) as a sample weight. Counties are classified into six categories based on NCHS's urban-rural classification scheme. Models that include "linear time trends (urban-rural category)" include the interaction of these categories with linear time trends. Standard errors are reported in parentheses. The signs *, **, and *** represent statistical significance at 10, 5 and 1 percent levels, respectively.

Figure A1. Ethnic diversity trends over time in relatively less or more charitable counties

A. Counties that are relatively less diverse in 2010



B. Counties that are relatively more diverse in 2010



Notes: Panel A includes those counties that are in the 25th or 75th percentile of the sample based on charitable contribution amount per capita and in the 25th percentile of the sample based on the ethnic FI as of 2010. Panel B includes those counties that are in the 25th or 75th percentile of the sample based on charitable contribution amount per capita and in the 75th percentile of the sample based on the ethnic FI as of 2010.