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Religious Diversity Reconsidered: Local Religious Contexts and Individual Religiosity

Abstract

This study examines how the religious composition of a local U.S. population shapes an individual's religious involvement. We reconsider Berger's plausibility thesis and unpack its theoretical mechanisms by (a) conceptualizing religious diversity from each religious group's perspective, because a specific local religious environment has different implications depending on one's religion; (b) decomposing the diversity of the population into the religious group's share and diversity; and (c) including non-affiliated as part of local religious contexts. Furthermore, we adjust for the detailed categories of religious family in a multilevel framework, which addresses the problem of non-substantive correlation and potential heterogeneity among religious groups. Focusing on Protestants, Catholics, and non-affiliated, the analysis revealed that although religious diversity, especially the share of the religious outgroup, tends to be associated negatively with an individual's religious involvement, there are important differences in how religious diversity is related to religiosity among different religious groups including Protestants and Catholics.

Introduction

America has long been considered a notable exception to the secularizing trend among Western countries. Recently, however, there is a growing body of evidence that religiosity has been declining after all in the past few decades in the United States (Voas and Chaves 2016). Although this national trend has drawn much attention, it obscures enduring variations in religiosity across local areas. According to the 2014 Pew Religious Landscape Survey, eight of nine residents in the Baton Rouge metropolitan area had a religious affiliation, and one of two claimed that they attended religious services weekly. In contrast, almost half of the residents in the San Francisco, California, area reported no affiliation, and only 17% claimed weekly attendance. This difference is comparable to the gap between the United States and Sweden.

This study focuses on this spatial variation in religiosity within the United States and asks why individuals in some areas are more religiously involved than people in other areas and how local religious contexts are related to individuals' religiosity. Although various aspects of local contexts can contribute to the religiosity of a local population, we focus on the religious diversity of the local population and its relationship to religious involvement among individuals in the area, a topic that has been a subject of long-standing debates and extensive empirical research in sociology, although many of these studies focused on religiosity at the aggregate levels, such as the city, county, or even nation, rather than at the individual level (for a review, see Chaves and Gorski 2001; Olson 2002; De Graaf 2013). The research seems stalled due to methodological issues (Voas, Crockett, and Olson 2002; Olson et al. 2020) and theoretical ambiguities (Olson 2002; Montgomery 2003; De Graaf 2013). However, this does not mean that religious diversity, and religious contexts in general, has become less relevant. We argue and demonstrate that these are still important areas of research to advance our understanding of spatial and temporal dynamics

of religious change, a topic particularly timely given the recent trends in the US. By specifying the relationship between local religious diversity and religiosity from the perspective of each religious group, this study not only highlights an important but under-appreciated aspect of the changing American religious landscape but also develops an improved analytical framework for understanding religious variations and changes.

Toward these goals, we revisit Berger's secularization theory, because it still offers a useful starting point for studying the relationship between the religious diversity of a local population and religiosity, and his work contains theoretical claims that can be further elaborated and tested. We build on and refine Berger's plausibility thesis by combining it with the social network approach to religiosity (Kelley and de Graaf 1997), which focuses on the "modernization of social ties" as the main driver of declining religiosity (Ruiter and Van Tubergen 2009: 865). We propose new ways to operationalize the key concepts and new empirical predictions, and employ comprehensive data to test them. To address the issue of "non-substantive correlation" particularly inherent in aggregate-level analysis, we build on the approaches recommended by Voas et al. (2002) and employ multilevel logistic regression in which local religious contexts predict individuals' religiosity after adjusting for their religious identity and other personal traits.

We make several contributions. First, we adopt what Koopmans and Schaeffer (2013) call a "relational approach" in their research on racial diversity and social cohesion, and conceptualize local religious contexts from the perspective of an individual's religious group. Rather than assuming, as in previous research using the Herfindahl-Hirschman index, that people of different religions all face the same environment, we recognize that a local religious context can have different meanings and impacts, depending on an individual's religious membership, and must be conceptualized from the perspective of each religion to properly capture its members' potential

exposure to various religions, and thus, the perception of the plausibility of religion. Second, we combine Berger's secularization theory with insights from the social network theory of religiosity to develop empirical predictions that reflect more accurately the key theoretical arguments. In particular, we decompose the religious diversity of a local population into the share and the diversity of the religious outgroup, which can shape individual religiosity through different mechanisms. Finally, we consider the importance of the non-religious population for religious diversity. Although there is a large body of research on the non-religious population, the literature on religious diversity rarely considers this population when measuring diversity (De Graaf 2013: 345). This is inevitable in aggregate-level analysis, in which the proportion of the non-religious population is collinear with the outcome variable (i.e., the religiosity of the local population). We circumvent this problem by using multilevel analysis with a large survey data set.

Based on these innovations, we develop and test hypotheses on the relationship between the religious diversity of a local population and individual religiosity. We use the Pew Research Center's 2014 U.S. Religious Landscape Study data (hereafter, "the Pew study") to measure individuals' religiosity and other personal traits, and merge them with other data to measure local contexts. Some of these data have rarely been used to study the relationship between local religious contexts and individual religiosity but are useful sources for measuring local religious diversity. We start with analyses of all religious groups pooled together and then perform subgroup analyses of three major groups—Protestants, Catholics, and non-affiliated—to explore heterogeneity among them in the relationship between religious diversity and religiosity. The subgroup analyses also help address the issue of non-substantive correlations (Voas et al. 2002). Despite the large sample size of the Pew study, the number of respondents in non-major religions is small for

subgroup analysis. Thus, and to limit the paper's length, we focus on these three major groups, which together account for about 91% of the U.S. adult population.

The key results show that overall the share of the outgroup, rather than its diversity, is more closely related to individual religiosity. However, there are significant differences among the three major religious groups in how these two aspects of religious diversity are related to religiosity. The findings are largely consistent with Berger's secularization theory, reinterpreted through the lens of the social network theory of religiosity, but with some notable differences across religious groups. These findings advance our understanding of the relationships between religious diversity and religiosity, and contribute to the development of a new theoretical and analytical framework for studying religious variation across local areas.

Religious diversity, social networks, and plausibility

Many different aspects of local environments, both religious and non-religious, can affect an individual's religious belief and participation (see Olson 2019 for the general importance of local religious contexts). For example, scholars have suggested that religiosity is higher in situations of conflict and unpredictability, and lower when people feel secure about their survival and prosperity (Norris and Inglehart 2004; Ruiter and Van Tubergen 2009; Storm 2017; but see Te Grotenhuis et al. 2015). Mueller et al. (2014) also suggested that income inequality influences religious socialization.

However, numerous studies in the sociology of religion have focused on the religious diversity of a local population and to a lesser extent, the proportion of a specific religious group as key aspects of local environments that can influence an individual's religious participation. Secularization theory, especially the version inspired by Berger's (1967) influential work, suggests that people are more likely to stay committed to religious beliefs and sustain their participation

when their religion dominates all aspects of society. In such environments, a religion is the sole institution that defines reality, inducing adherents to take their religious beliefs for granted. The “plausibility” of a religion is supported by its monopoly of the business of reality-defining. In a pluralist society, religions must compete with one another and with non-religious institutions, which undermines a religion’s plausibility structure and leads to secularization (Berger 1967: 137).

Berger’s thesis has been criticized for predicting an inevitable and irreversible decline of religiosity: “secularization theory is as useless as a hotel elevator that only goes down,” as Stark (1999: 269) memorably observed. Witnessing the resilience of religion, Berger (1999) revised his view later. Many scholars agree that at least the “naïve model of secularization” (Wald and Calhoun-Brown 2011) is incompatible with resilient religiosity in parts of the world; although religiosity seems to have been declining in the US, the main counterexample to the secularization thesis in the Western world (Voas and Chaves 2016).

However, Berger’s thesis can offer useful insights to understand variations in religious participation, without being the theory of inevitable religious decline. In fact, Berger (1967) did not suggest that religious pluralism inevitably leads to *society-wide* secularization. In a religiously pluralist society, Berger claimed, a religion cannot monopolize the business of defining reality, and a religion’s plausibility must be supported by “specific enclaves of social life,” such as family, congregations, and local communities (133–134); or what Smith and Emerson called “sacred umbrellas,” “subcultural and organizational niches within the rich cultural complexity and diversity of modernity” (1998: 218). Because of the voluntary, localized, and “privatized” (Casanova 1994) nature of such support, the strength and durability of the plausibility structure vary across individuals and local communities, depending on the religious composition of the areas and the local religious subcultures (Olson 2019). Berger’s emphasis on the importance of localized

support resonates with the social network approach to religiosity (Kelley and De Graaf 1997; Ruiter and Van Tubergen 2009). Kelley and De Graaf (1997: 640) suggested that “people’s exposure to religious culture” through social networks matters, and “pools of potential friends, teachers, colleagues, and marriage partners” who are predominantly devout are key in explaining the variations in religiosity across groups and places. We contend that not only the overall level of devoutness but also the religious composition of the local population, especially the size of the population with the same religion as one’s own compared to the size of the group with a different or no religion, and the level of diversity within the group, should be considered.

Interpreted through the lens of the social network theory of religiosity, Berger’s secularization theory predicts that the religious composition of the local population affects individual religiosity by shaping an individual’s exposure to various religious cultures. The religious diversity of the local population increases individuals’ exposure to different faiths, undermines the plausibility of their own faiths, and thus, weakens their religious beliefs and commitments. The local religious composition also affects individual members’ exposure to their own religious groups and thus, embeddedness in social relationships within the groups—what scholars refer to as “religious social capital” (Maselko, Hughes, and Cheney 2011). The stronger local presence of co-religionists and their deep embeddedness in religious networks further bolster the plausibility of their religious worldview by increasing their network closure and thus, make it easier to reinforce the norms and values shared in their faith community.

In most previous studies, the religious diversity of the local population is operationalized using the “pluralism index” (Finke and Stark 1988) or the Herfindahl-Hirschman index of diversity. The index is then used to predict the level of religiosity in local areas and in some cases, individual

religiosity, often adjusting for individual and local characteristics. Building on these studies, we address several conceptual and methodological limitations in this operationalization of diversity.

First, this measure of diversity assigns a single value to all residents regardless of their religious preferences and thus, does not consider the asymmetry among larger and smaller religious groups (Koopmans and Schaeffer 2013). For example, Protestants and Buddhists in a place where most residents (e.g., 90%) are Protestants are considered to live in the same religious environment and have the same exposure to different religious faiths. This is unrealistic, as it would be all but impossible for Buddhists not to interact with Protestants, whereas Protestants would have fewer chances to meet local Buddhists (Blau 1977). In many places in the US, where Protestants are still the majority, the same religious composition can have different implications for the majority and minority groups, especially regarding their chances of exposure to religious outgroups. This issue of asymmetry when measuring exposure is well documented in the literature on residential segregation (Lieberson 1980; Massey and Denton 1988), and was the focus in some recent studies on the relationship between racial composition and social cohesion (Koopmans and Schaeffer 2015; Abascal and Baldassarri 2015). However, the issue attracted little attention in previous studies on religious diversity. This is partly due to the limitation of aggregate-level studies in which religiosity is measured at the area level rather than at the individual level. However, applying the same value to all religious groups obscures important heterogeneities in the relationship between local environments and individual religiosity.

Second, as Koopmans and Schaeffer (2015) pointed out, the conventional pluralism index does not distinguish two dimensions of diversity: the share and the diversity of outgroup. While they proposed their “relational approach” distinguishing these two dimensions in the context of racial diversity, this approach is also applicable for studying religious diversity. From the

perspective of members of a religion, their chance to interact with people of various faiths is a function of the share of the religious outgroup and the diversity within that outgroup. The outgroup share affects one's chance to interact with people of other religions, whereas the outgroup's diversity influences the variety of religious beliefs and practices to which one is exposed. In Berger's theory, both dimensions matter. Outgroup share is also the inverse function of *ingroup* share, and a larger ingroup share increases the chance of interacting with others sharing one's religious faith and more deeply embedding members in local religious networks, reinforcing people's religious involvement through stronger social support and sanctions (Kelley and De Graaf 1997; Sherkat 1997; Perl and Olson 2000). Additionally, a large outgroup share can influence individual religiosity through other mechanisms, such as intergroup conflicts or threats (cf. Smith 1998). Thus, it is important to distinguish the two aspects of diversity.

Finally, in previous studies the pluralism index did not usually include the non-religious population as a part of the local religious context. In aggregate-level studies, this is inevitable, because the size of the non-religious group is already considered in the dependent variable (i.e., area-level religiosity, often measured as the number of adherents as a percentage of the population). The lack of reliable data for measuring the non-religious population in small geographic units is another barrier. However, excluding non-religious from the measure of religious diversity is inconsistent with Berger's theory, which explicitly states that in a pluralist society, religious groups compete with religious and non-religious rivals in the business of defining reality (1967: 127). Omitting the secular population when measuring diversity is also misleading, because some places with a sizable secular population can be otherwise religiously homogeneous. The conventional pluralism index does not distinguish such places from those that are truly homogeneous with only a small secular population.

This study expands on previous studies by conceptualizing local religious environments from the perspective of the focal religious group to capture each group's potential exposure to various religious groups more accurately. We examine outgroup share and diversity separately and count religious non-affiliated as part of the religious environment. Building on our discussion above, we first hypothesize that the share of a religious ingroup in a local area positively affects religious participation among the adherents of the focal religion, because a larger ingroup share strengthens its members' embeddedness in the networks of co-religionists while decreasing members' exposure to different religious faiths, thus improving their religious social capital and providing stronger local social support for members. Because ingroup share is an inverse function of outgroup share, and the following hypotheses concern the share and diversity of the outgroup, we state the hypotheses in terms of the outgroup rather than the ingroup. Thus, we hypothesize:

H1. The share of the religious outgroup in a local population is negatively related to the religiosity among members of the focal religion.

For people with no religious preference, the plausibility theory may not be directly applicable, as they may not have a religious belief system they need to find plausible. However, religious non-affiliated are a heterogeneous group with varying degrees of attachment to religion (Voas 2009; Lim, MacGregor, and Putnam 2010), and the social network theory of religiosity suggests that the non-affiliated may feel more comfortable being disengaged from organized religion and expressing their secular views in places where they have a strong local presence. Conversely, non-affiliated individuals in a highly religious place would face stronger social sanctions and be more likely to be involved in religion, even nominally.

H1a. Non-affiliated individuals are more likely to express religious beliefs and participate in organized religion when they live in places with a larger religious outgroup share.

Outgroup diversity can also be relevant. With a more diverse local outgroup, a religion competes with larger and more diverse groups, which further undermines its plausibility. A more diverse outgroup additionally increases people's exposure to religious faiths radically different from their own, which may pose more serious challenges than exposure to different denominations within the same religious doctrine (Hamberg and Petterson 2002; De Graaf 2013). For many Protestants in the United States, high outgroup diversity often indicates larger non-Christian and secular groups, which can cause more serious religious doubts than do Catholics. Similarly, high outgroup diversity for Catholics means more non-Protestant and non-Christian groups. Consequently, we expect a negative relationship between outgroup diversity and religiosity among Protestants and Catholics, net of outgroup share. Thus, we posit:

H2. The diversity of the religious outgroup is negatively related to the religiosity among the adherents of the focal religion after controlling for the outgroup share in the local population.

Neither secularization theory nor the network theory of religiosity has a clear implication regarding outgroup diversity for non-affiliated. Outgroup diversity may not be relevant for them because any religious faith would be fundamentally different from their secularism. Furthermore, when the local population is religiously heterogeneous and different religions compete with one another, no single faith would dominate the business of defining reality, thus making it easier to become and remain secular. However, the norm against the secularism may be stronger and more

effectively enforced in a population with a homogeneous religious majority than in a religiously fragmented community.

H2a. Non-affiliated are more likely to express religious beliefs and participate in organized religion when they live in places with a more homogeneous religious outgroup after controlling for the outgroup share in the local population.

The supply-side approach, another influential theoretical tradition in the sociology of religion, suggests a potentially conflicting claim that religious diversity is positively associated with religious participation. When more diverse religions compete with each another in a religious market, religious suppliers are pressured to increase their efforts to recruit and retain adherents, and potential “customers” in the market have a “richer menu” to choose from. Thus, they have a better chance of finding a “product” that meets their religious needs, resulting in increased religious participation (Stark and Finke 2000; Olson 2002; Montgomery 2003). In previous studies, the diversity of the religious supply was typically measured by the denominational diversity of the local population, not of religious suppliers. Thus, the relationship between the religious diversity of the local population and religiosity has been considered a critical test for secularization theory and supply-side theory.

However, we do not think the religious diversity of the local population properly represents supply-side mechanisms. Thus, we argue that examining the relationship between religious diversity and religiosity does not provide a proper test of supply-side theory. Although the denominational diversity of the population tends to be correlated with the diversity of the religious supply, they are distinct concepts. They can represent different mechanisms and should not be

equated with one another. Focusing on the denominational diversity of the population also ignores other important aspects of religious supply (e.g., diverse sizes, demographics, and worship styles of the congregations). This approach additionally assumes that all denominations directly and equally compete for the same potential consumers, an unrealistic assumption given that individuals are unlikely to consider a radically different religion as a “substitutable” option, and the competition is likely to be limited to or at least more intense among similar denominations within a market niche (Roof and McKinney 1987; Stark and Finke 2000; Olson 2002; Sherkat 2014).

In short, we do not consider examining the relationship between the religious diversity of the local population and religiosity as a proper test of supply-side theory. Testing supply-side theory adequately requires not only data directly measuring the local suppliers of religion but also careful consideration of the “substitutability” of various denominations, a task beyond the scope of this paper (see Chaves and Giesel 2001; Olson 2002; Montgomery 2003; Finke and Scheitle 2014 for the new directions in supply-side research). Instead, we focus on testing the predictions of secularization theory (especially Berger’s plausibility thesis) and the social network theory about the relationship between the religious diversity of the population and religiosity.

Data and measurement

Individual-level variables

We test the hypotheses using multiple data sources. All the individual-level variables, including the dependent variables, came from the Pew study. The 2014 Pew Religious Landscape Survey interviewed a large sample of U.S. residents ($N = 35,071$) about their religious beliefs and behavior. Due to the large sample size and rich information on religious involvement, the data are ideal for exploring variations in religious involvement across local areas and correlates. The survey used a random-digit dial approach to sample respondents and completed a minimum of 300

interviews in every state. The interviews were conducted in English and Spanish, on cellphones (60% of all respondents) and landlines (40% of all respondents). The response rate (the AAPOR formula 3) was 11.1% for the landline sample and 10.2% for the cellphone sample (Pew Research Center 2016). The Pew Research Center provided the county FIPS codes for the respondents' residences, which we used to link the Pew study with other county-level data.

County-level variables

Local context variables at the county level were measured using various data sources. We measured the religious composition of the local population using the Gallup Daily Poll. Since 2008, Gallup has used a dual framework (cellphone and landline) random-digit dialing method to interview about 1,000 respondents daily in English and Spanish, asking the same questions repeatedly. According to the Gallup (2009) report, 28% of all eligible respondents Gallup contacted completed the interview. Thanks to the large sample size, the pooled Gallup data can offer reliable estimates of local demographics, including the religious composition of the local population. In particular, the data can provide reliable local estimates of non-affiliated and adherents of small religious groups (Lim 2013). This is an important advantage, especially compared with alternative data sources that we discuss below. Because non-affiliated are an important source for local religious diversity, inaccurate estimates result in noisy measures of outgroup share (for non-affiliated) and outgroup diversity (for all other religious groups). We limited the analyses to respondents living in the counties where Gallup interviewed at least 100 respondents during the period, so we did not include the counties for which the Gallup estimates were less unreliable due to small sample sizes. This threshold excluded only 2.7% ($N = 939$) of the Pew study sample. For a robustness check, we employed replications with different thresholds (50, 150, and 200). These replications resulted in almost identical estimates.

The Gallup data, however, have limitations. In addition to low response rates, the data lack detailed denominational information, making it impossible to distinguish among different Protestant denominations. This limitation is serious given the well-documented differences among Evangelical, Mainline, and Black Protestant denominations. Although we argue that the Gallup data's strengths in estimating the shares of non-affiliated and small religions outweigh the weaknesses, we conducted additional analyses using 2010 U.S. Religious Congregations and Membership Study (RCMS) data. The 2010 RCMS collected information on the number of local congregations and adherents from 236 religious bodies or groups (Grammich et al. 2012) and has been an invaluable resource for scholars of American religion. The data have some limitations (Finke and Scheitle 2005; Lim 2013; Bacon, Finke, and Jones 2018). The accuracy for non-affiliated and non-Christian denominations is questionable (Lim 2013), which is problematic for the reasons we discussed above. The total number of adherents in major religious traditions exceeded the total county population in some counties and was zero in others. As a result, outgroup share and diversity can have unrealistic numbers. However, the RCMS allows us to distinguish among different Protestant traditions in measuring local religious contexts and thus, provides a valuable robustness check.

Finally, we used the American Community Survey five-year summary file (2010–2014) to measure other county-level characteristics, including population density, unemployment rate, income inequality, and median household income.

Dependent variables

We examined four measures of religious involvement, encompassing belief and membership dimensions. To explore how different aspects of religiosity are related to local

religious contexts, we analyzed them independently, instead of combining them in a composite index. All four variables were measured using the Pew study data.

a) *Religious affiliation:* We measured an individual's *current* religious affiliation at the time of the survey. This variable was coded one if respondents identified with any religious tradition at the time of the survey, and zero if they reported no religious affiliation.

b) *Belief in God:* The Pew study asked whether respondents believed in God or a universal spirit. If respondents replied positively, they were asked how certain they were about the belief. Two-thirds (64%) of the respondents reported that they were "absolutely certain." Another 20% stated that they were "fairly certain," and only 10% answered that they did not believe. Because a large majority was "absolutely certain" about their belief, and even a slight uncertainty can be interpreted as a sign of fading faith (Chaves 2017), we dichotomized this variable by combining all responses other than "absolutely certain." Using the ordinal version of the variable yielded similar results.

c) *Congregation membership:* To measure respondents' participation in a local congregation, we used a question that asked whether respondents were "a member of a local synagogue/mosque/temple/church/or other house of worship." The response was coded one if the respondent was a member, and zero otherwise. Although congregation membership could have different meanings across religions and individuals, we consider self-reported membership a meaningful indicator of involvement in a local congregation.

d) *Regular religious service attendance:* We used regular religious service attendance as a measure of participation in a local congregation. The Pew study asked about the frequency of religious service attendance in six categories, ranging from "never" to "more than once a week." We dichotomized the responses to regular attendance ("once a week" or "more than once a week")

and non-regular attendance (all other responses) so that the results were more comparable with those of other dependent variables. The analyses using the ordinal scale yielded similar results.

Explanatory variables

The key explanatory variables were two measures of the religious composition of the local population, which were measured with the Gallup and 2010 RCMS data and standardized to have a mean of zero and a standard deviation of one for ease of comparison.

a) *Outgroup share*: Outgroup share is the percentage of the local population whose religious affiliation is different from the respondent's religion. For example, the outgroup share for Protestants is the percentage of non-Protestants among the county population. For non-affiliated, it is the percentage of the county population that reports any religious affiliation. In the 2010 RCMS data, this was calculated by summing up the number of adherents reported by all religious groups, dividing it by the total population, and multiplying it by 100. When the sum was larger than the total population, we capped it at 100%.

b) *Outgroup diversity*: The diversity of the religious outgroup was measured with the Herfindahl-Hirschman index of diversity only among religious outgroups.¹ In the Gallup data, we measured outgroup diversity with reference to the following religious groups: Protestants (including "other Christians"), Catholics, Jews, Mormons, Muslims, other non-Christians, and non-affiliated. In the RCMS data, we decomposed Protestants into Evangelical, Mainline, and

¹ The outgroup share is defined as $(1 - \frac{n_i}{N_k}) \times 100$ where N is the total county population, k is the number of religious groups including the ingroup, g is the number of outgroups, and n is the number of people in religious group i . Outgroup diversity then is defined as $1 - \sum_{j=1}^G (\frac{n_j}{N_g})^2$. Please see Koopmans and Schaeffer (2013) for more information.

Black Protestants. As a result, the outgroup diversity for one of these traditions included the proportions of the other two Protestant groups in the local population.²

<Insert Table 1 here>

Table 1 presents the correlation coefficients among the measures of the local religious context from the Gallup and RCMS data. First, the share of Protestants in the Gallup data is strongly correlated with the share of Evangelical Protestants in the RCMS ($r = 0.74$), but weakly with the share of Mainline Protestants, indicating that the variation in the share of overall Protestants is largely driven by the share of the Evangelical Protestant population. Second, the estimates of Catholics from the two data sets are strongly correlated ($r = 0.88$), but those of non-affiliated are only moderately correlated ($r = 0.50$). The RCMS estimate of non-affiliated is also weakly correlated with the shares of the major religious groups from both data sets. Later, we return to this table when we interpret some of the main results.

Control variables

At the individual level, we adjusted for the following variables: age, sex, race, marital and parenting status, and educational attainment. These variables are well-known predictors of religiosity, and likely to be correlated with an individual's chance of living in a local area with different levels of outgroup share and diversity.³ For instance, young Protestants are likely to be

² In the residential segregation literature, the interaction index or P^* is commonly used to measure asymmetric exposure between minority and majority groups. This index is typically applied to measure neighborhood-level segregation within a city so that the level of segregation can be compared across cities. P^* would be a potential measure for respondent's exposure to other religions if sub-county level (e.g., census tract or zip code) data on religious composition is available, which would allow us to capture the micro-segregation based on religion within each county. Unfortunately, we do not have access to such data, making P^* inapplicable.

³ To see whether our results are sensitive to which control variables are included, we conducted Young and Holsteen's (2017) multimodel analysis, which runs all models with every possible combination of the independent variables. The results show that key findings are not sensitive to which control variables are included. The results are available from the authors.

less religiously involved and more likely to live in urban areas with a larger and more diverse non-Protestant population, potentially confounding the relationship between local religious contexts and individual religiosity due to self-selection. In addition, we controlled for refined categories of religious family in which respondents grew up or to which they currently belong, which we discuss below. Finally, we controlled for several county-level covariates that could also be correlated with individual-level religiosity and local religious contexts: census region (Northeast, South, Midwest, and West), population density, median household income, percentage of residents with at least a college degree, median age, percentage of black residents, unemployment rate, percentage of residents who lived in the same house one year ago, and income inequality measured as the Gini coefficient. Table 2 provides descriptive statistics of all variables.

<Insert Table 2 here>

Analytic approach

The main goal of the analysis is to examine how local religious contexts are related to individual religiosity. Toward this goal, we estimated a series of multilevel logistic regressions that modeled respondents' religious involvement as a function of individual and contextual (i.e., county) characteristics.

We started with the analysis of all respondents from various religious groups (including non-affiliated) pooled together to estimate the average relationship between local religious contexts and individual religiosity. The local religious context variables were operationalized from each group's perspective so that they had different values for individuals living in the same county if they had different religions. To address the "non-substantive" correlation problem (Voas et al. 2002), we controlled for respondent's religious identity using the "religious family" variable, which classified respondent's religious identity into 51 "denominational families," including 34

Protestant denominational families (see the Pew Research Center 2016 for the full list). According to Voas et al. (2002), multilevel regression with respondent's religious identity (i.e., religious family in this case) controlled for is one of the methods for tackling the issue of "non-substantive" correlation (see also Olson et al. 2020).

We then conducted subgroup analyses of Protestants, Catholics, and non-affiliated separately so that we could fully examine how the link between local religious environments and individual religiosity varied across these groups. However, religiosity is likely to vary across denominational families within Protestantism, and denominational families are not randomly distributed geographically. Therefore, we controlled for each respondent's current denominational family in the analyses of Protestants, again using the "religious family" variable. Consequently, the models estimated how individual respondents' religiosity deviated from the average level of religiosity in their religious family, depending on the local religious environments in which the respondents lived.

Catholics and non-affiliated were considered each as a single religious family in the classification scheme used in the Pew study. Thus, there was no need to additionally control for their current religious family in the subgroup analysis. However, it is plausible that current Catholics (or non-affiliated) who grew up in different religious families differ in their current level of religiosity. Similarly, we could not control for current religious family when the outcome variable was the respondent's current religious affiliation in the subgroup analysis: The outcome variable would not vary at all because everybody currently in any Protestant or Catholic family would have a current affiliation, and all non-affiliated would not. For these analyses, therefore, we

controlled for the religious family in which respondents grew up.⁴ In short, we controlled for the current religious family in the following analyses: the pooled group and the Protestant analyses when the outcome variable was belief in God, congregational membership and religious service attendance. We controlled for the religious family respondents grew up in for the following analyses: all subgroup analyses for Catholics and non-affiliated, and the Protestant analyses when the outcome was the current religious affiliation.

Results

In this section, we first present the results using the measures of local religious contexts from the Gallup data. We summarize the key results from multilevel logistic regressions by plotting the marginal effects in terms of the change in predicted probability associated with one standard deviation difference in outgroup share and diversity. For each dependent variable, we present three models: 1) a bivariate model that includes only the focal local religious context variable, 2) a with-controls model that adds all individual- and county-level control variables, and 3) a full model that includes the outgroup share and outgroup diversity in addition to all control variables. These results are followed by various robustness checks, including the results using the RCMS measures of local religious contexts.

All religious groups combined

<Insert Figure 1 here>

Figure 1 presents the results from multilevel logistic regressions of four indicators of individual religiosity on the share and diversity of religious outgroups among all respondents. The

⁴ In the analyses for religious affiliation, some respondents may have a religious affiliation but switched to a different religion. Therefore, we replicated our analyses of religious affiliation for Protestants and Catholics after excluding the switchers. The results are almost identical to what we report in this article.

results show that the overall outgroup share is negatively related with individual religiosity. The strength of the relationship varies across models and dependent variables. There is a strong negative bivariate association between the outgroup share and all four measures of religiosity, but particularly for belief in God and involvement in congregation. The relationship becomes weaker when the control variables are introduced, and for belief in God, the coefficient is barely distinguishable from zero. Additional analyses suggested that controlling for respondents' religious family explained a large part of the bivariate associations, although other control variables also contributed. Even in the models with all control variables, however, the outgroup share is negatively associated with three of the four dependent variables, and the negative relationship was stronger in the full model. For example, one standard deviation difference in the outgroup share, which was 25% among all respondents, is associated with a 3.3 percentage point lower probability of regular religious service attendance in the full model.

The diversity of the outgroup has overall a positive bivariate relationship with individual religiosity, but the relationship largely disappeared when the control variables were added. Once we controlled for the share of outgroup, however, outgroup diversity was negatively related with individual religiosity, with the exception of belief in God. The strength of the negative relationship in the full models was smaller than or at best, similar to that of the outgroup share.

In short, the results shown in Figure 1 suggest that individuals with the same religious identity and various personal and county-level characteristics tend to be less involved in religion when they live in areas with more people who do not share their faith. Conditioning on outgroup share, the diversity within the outgroup is also negatively associated with individual religiosity, although the strength of the relationship is weaker than that of the outgroup share. In other words, the share of the outgroup rather than its diversity seems more consequential for individual

religiosity. However, these results, averaged over different groups including non-affiliated, can obscure important differences among religious groups. To fully explore such heterogeneities, we turn to the subgroup analyses of Protestants, Catholics, and non-affiliated.

Protestants

Despite the recent decline in the share of Protestants, national surveys indicate that Protestants still account for nearly half of the adult population. Because of the uneven geographic distribution of Protestants, however, many Protestants live in a county where they are the majority. The average Protestant respondent in the Pew study lived in a county where 60% of the residents are Protestant. Seventy percent of all Protestants lived in a county where at least half of the residents identify as Protestant. However, there was a large variation in local religious contexts for Protestants. Figure 2 presents how the variations in the share and diversity of the non-Protestant local population are related to individual religious involvement among Protestants.

<Insert Figure 2 here>

Figure 2 shows that among Protestants outgroup share is the most consistent predictor of all four measures of religious involvement. The respondents who grew up as Protestant are less likely to have a religious affiliation when a larger percentage of the local population is non-Protestant. The respondents who currently identify as Protestant are also less likely to be “absolutely certain” of God’s existence, be a member of a local congregation, or regularly attend religious services compared to other members of their own religious family, when the local population has a higher percentage of non-Protestants.

The strength of the relationship is largely consistent across the dependent variables or models. In the full model, for example, one standard deviation difference in outgroup share is associated with a 5 percentage point difference in the probability of regular attendance. One

standard deviation in outgroup share for Protestants is 16.5, with a mean value of 40.6. To offer a perspective on these numbers, the difference between the Northeast and the South in the probability of regular attendance is about 3 percentage points in the full model, women have a 4.6 percentage point higher probability than men, and people with young children have a 3.5 percentage point higher probability than people without. No county-level variables have a stronger relationship than outgroup share. For example, one standard deviation difference in Gini index is associated with 1.4 percentage point difference in regular attendance. In comparison, the relationship between outgroup diversity and religiosity is weaker and less consistent compared to outgroup share. In the full model that controls for outgroup share, it tends to be negatively associated with individual religiosity, although its confidence intervals include zero for some measures of religiosity.

In summary, people who grew up or currently identify as Protestant reported a lower level of religiosity when living in a county with a larger non-Protestant population. This result applied to all four measures of religious involvement. Controlling for outgroup share, outgroup diversity—which often means more exposure to non-Christians and non-affiliated—was also negatively but weakly related to religiosity. These findings are consistent with the predictions based on Berger's secularization theory and the social network theory of religiosity (especially Hypothesis 1).

Catholics

Local religious environments for Catholics are different from those for Protestants. Although about a quarter of Americans identify as Catholic, most Catholics live in places where they are a minority, albeit sizable. On average, Catholics in the Pew study lived in a county where 30% of the population identified as Catholic; only 5% lived where Catholics accounted for more

than 50%. This means that most American Catholics live with a larger religious outgroup than Protestants do. A larger outgroup for Catholics often means a bigger Protestant population.

<Insert Figure 3 here>

Figure 3 shows that among Catholics, outgroup diversity, rather than outgroup share, is a stronger and more consistent predictor of religious involvement. The respondents who grew up as Catholic are less likely to report a religious affiliation when they are surrounded by more diverse non-Catholic populations. In addition, Catholics are less likely to believe in God's existence, belong to a local congregation, or regularly attend religious services if they live in a county with a more diverse religious outgroup.

The strength of the relationship between outgroup diversity and religiosity is comparable to what we found between outgroup share and religiosity among Protestants. One standard deviation difference in diversity is associated with 3 to 6 percentage point differences in the full models, depending on the dependent variables. The relationship is strongest for congregation membership (a 6.5 percentage point difference) and weakest for belief in God (3 percentage point difference). In comparison, outgroup share is related to religious affiliation and congregation membership (only in the full model), but not with belief in God or religious service attendance. Even for religious affiliation and congregation membership, the relationship is weaker compared to outgroup diversity.

In summary, unlike for Protestants, Catholics' religious involvement is more closely aligned with the diversity of the local non-Catholic population than with its share. Outgroup diversity for Catholic respondents has a strong and negative correlation with the share of Protestants ($r = -0.84$) and is positively correlated with the share of non-affiliated ($r = 0.68$) and non-Christians ($r = 0.59$) among the local population. In other words, high outgroup diversity for

Catholics means more exposure to non-Christians and secular individuals, both of whom can undermine their Catholic faith more than other Christian faiths would. These results support Hypothesis 2, but only partially support Hypothesis 1.

Non-affiliated

Finally, we examine whether people who grew up without a religious affiliation are more likely to have an affiliation currently depending on their local environments. We also investigate whether current non-affiliated are more religiously involved, even marginally, if they live in certain religious environments. On average, respondents with no religious affiliation in the Pew study lived in a county where 16% of the population are non-affiliated. However, there is a substantial variation, as some lived where more than 40% of the local population report no affiliation (San Francisco County); whereas non-affiliated account for less than 2% of the population in Starr County in Texas.

<Insert Figure 4 here>

Figure 4 shows that people who grew up without religious affiliation are more likely to report a current affiliation when they live in a county with a higher outgroup share; conversely, they are more likely to remain unaffiliated when a larger share of the population has no affiliation. Outgroup share also predicts belief in God. Among non-affiliated, one standard deviation difference in outgroup share is associated with about a 5 percentage point higher probability of being “absolutely certain” that God exists. However, the relationship between outgroup share and involvement in a local congregation is weak and its confidence intervals overlap with zero.

Outgroup diversity is negatively associated with religious involvement among non-affiliated in the bivariate models, indicating that non-affiliated are more religiously involved when local religious outgroup is more homogeneous. The relationship, however, is weaker when the

control variables are added. It remains statistically significant for congregation membership and regular attendance, but the relationship is weak as one standard deviation difference in outgroup diversity is associated with less than one percentage point difference in congregation membership and about half a percentage point in regular attendance.

For non-affiliated, outgroup share is positively correlated with the share of Protestant population ($r = 0.55$) but negatively with the share of non-Christian population ($r = -0.73$). Outgroup diversity, however, is strongly and negatively correlated with the share of Protestant population ($r = -0.90$). The results suggest that non-affiliated are more comfortable in expressing their secular religious views and identities in places where they are at least a sizable minority and the religious outgroup consists of fewer Protestants and more non-Christians. We also found that local religious contexts matter more for their affiliation and belief than for their involvement in local congregations, which we suspect reflect their low congregational involvement in general. Overall, these results offer partial support for Hypothesis 1a and 2a.

Additional analyses and robustness checks

In this section, we briefly discuss additional analyses and robustness checks we performed. First, we replicated the analyses using alternative measures of local religious contexts from the 2010 RCMS data. The RCMS data allowed us to distinguish among different Protestant traditions in computing the outgroup share and outgroup diversity. Using these measures, we conducted subgroup analyses separately for Evangelical Protestants, Mainline Protestants, Catholics, and non-affiliated. Figure 5 summarizes the key results. To save space, we present only the results from the full models that included all control variables and both religious context variables. The results from the other models (available from the authors) are similar to those shown in Figure 5.

<Insert Figure 5 here>

Figure 5 shows that for Evangelical and Mainline Protestants, the outgroup share is negatively associated with religiosity. The strength of the relationship varies across the dependent variables and somewhat between the two traditions, but overall, the coefficients are smaller compared than those for the Gallup measures. For example, one standard deviation difference in outgroup share (14.0 for Evangelicals and 7.0 for Mainlines compared to 16.5 in the Gallup data) is associated with about a 2 percentage point lower probability of regular attendance among Evangelical and Mainline Protestants, as opposed to the 5 percentage point difference shown in Figure 2. Outgroup diversity is mostly unrelated to religiosity in both traditions. The marginal effect is statistically different from zero in only one outcome (religious affiliation) for Mainline Protestants, and the relationship is *positive* rather than negative. Despite these differences, both analyses suggest that the share of the outgroup, rather than its diversity, is negatively related to individual religiosity. The same conclusion applies to Evangelical and Mainline Protestants.

Among Catholics, outgroup share is negatively associated with current religious affiliation and congregation membership, but not with the other two measures. These results are consistent with the Gallup data (Figure 3). Outgroup diversity, however, is *positively* related to three of four measures of individual religiosity, the opposite of the previous analyses. In Table 1, the RCMS measure of outgroup diversity is positively correlated with the shares of three Protestant groups (r ranging from 0.46 to 0.57) and negatively with the share of non-affiliated in the local population ($r = -0.56$). However, the Gallup measure of outgroup diversity is negatively related to the share of Protestants ($r = -0.84$) and positively to that of non-affiliated ($r = 0.68$). In other words, these seemingly conflicting results reveal a similar pattern that Catholics are more religiously involved when their local religious outgroup is largely Protestant and less engaged when there is a larger

number of non-affiliated. Again, however, the size of the coefficient was smaller when we used the RCMS measures.

Finally, the results for non-affiliated indicate only a weak relationship between local religious contexts and individual religiosity. The direction of the relationship is different from that for the Gallup data, because a larger outgroup share is negatively related to religious involvement among non-affiliated. The coefficient of the outgroup share is small for all four dependent variables, and three have confidence intervals that overlap with zero. This contrasts with the clear positive relationship between the outgroup share and at least two measures of religiosity (i.e., affiliation and belief in God) shown in Figure 4.

In sum, the analyses using the RCMS measures yielded mixed results, partly confirming the results with the Gallup data but contradicting others. In both analyses, the outgroup share was a stronger and more consistent predictor of individual religiosity among Protestants than outgroup diversity. The results for Catholics also pointed to the same substantive conclusion, although the relationship between outgroup diversity and religiosity was stronger and more consistent when we used the Gallup data. The results for non-affiliated were inconsistent and even contradictory, which we suspect reflected the difficulty measuring the share of non-affiliated with the RCMS data. In the conclusion section, we discuss implications of these results.

We conducted several additional robustness checks. To further ensure that we did not obscure differences between Evangelical and Mainline Protestants, we conducted other subgroup analyses for them using the Gallup measures of local religious contexts. These analyses were performed separately for Evangelical and Mainline respondents, but with the religious context measures that combined all Protestant groups as a single group. The results, not shown here, suggested that despite small differences between the two traditions, the core findings held for both.

Outgroup share was negatively related to all measures of religious involvement in both traditions. The relationship between outgroup diversity and religiosity was negative only when outgroup share was controlled for, as in the analyses above, but the relationship was statistically significant only in some models for Mainline Protestants due to larger standard errors.

Second, we examined how a generic measure of the religious diversity of the local population, which has been used in most previous studies on this topic, was related to the four measures of religiosity, and how the results compared to those from our approach that separated the outgroup share and diversity and included non-affiliated as part of the local religious contexts. Although the present results demonstrated the analytical payoffs of our approach by revealing the relative importance of the outgroup share and diversity in different groups, it would still be useful to compare these results with those from the conventional approach that relies on a single index of religious diversity encompassing all religious traditions.

The results (available from the authors) showed that the conventional pluralism index tended to be negatively related to individual religiosity, but we also found differences between religious groups. The pluralism index was negatively related to all four measures of individual religiosity among Protestants, but only to religious affiliation and belief in God among Catholics. For non-affiliated, the pluralism index was related to congregation membership, but not affiliation or belief in God. In short, the results showed that the overall religious diversity of the local population is negatively associated with individual religiosity, but with important variations across three religious groups, suggesting the importance of the subgroup analyses.

Finally, although fully examining supply-side theory is beyond the scope of this paper, ignoring supply-side factors raises the concern of model misspecification. In particular, properly modeling local supply-side factors may change some of the key findings about outgroup share and

diversity. For example, a large local Protestant population may indicate a competitive religious market where many congregations of diverse denominations compete to attract adherents. The negative relationship between outgroup share (i.e., the share of non-Protestants) and religiosity among Protestants we found, therefore, may reflect intense competitions among local religious suppliers rather than the exposure to non-Protestant faiths. In addition, some measures of supply-side factors, such as the density of local congregations, can be interpreted as an indicator of local religious social capital and a part of the “sacred canopy.” To test these possibilities, we ran the models that control for the density and the diversity of local congregations. We obtained the congregation measures from the 2010 RCMS data. The results (available from the authors) suggested that the density of local congregations tends to be positively associated with religious involvement, particularly among Protestants. However, the main results concerning outgroup share and outgroup diversity remained mostly unchanged.

Conclusions

This study aimed to advance our understanding of the relationship between local religious contexts, especially the religious composition of a local population, and individual religious involvement. For this purpose, we developed an analytical framework by combining secularization theory with insights from the social network theory of religiosity. We proposed new operationalizations of key concepts and developed hypotheses concerning how various aspects of local religious populations are related to religious involvement. In particular, we offered a network interpretation of Berger’s plausibility thesis and argued that to properly test its empirical implications, the relationship between the religious composition of a local population and the plausibility of religion should be conceptualized from the perspective of each religious group. Individual members of various religious groups in the same area face asymmetrical opportunities

of exposure to other religious and non-religious groups, and different likelihoods of being embedded in their own local religious communities. We tested the hypotheses with data from a large survey and the measures of local religious environments from two different sources.

The analyses revealed a complex but clear picture of the relationship between local religious environments and individual religious involvement. First, consistent with secularization theory and the social network theory of religiosity, we found that, on average, the share of the religious outgroup among the local population (Hypothesis 1 and 1a) and the diversity of the outgroup (Hypothesis 2 and 2a) tended to be associated negatively with religious involvement among all respondents, although the relationship for outgroup share was stronger and more consistent than for outgroup diversity. The negative relationship between outgroup diversity and religiosity was also contingent on controlling for outgroup size.

There were some important variations, however, depending on the religious groups and the measures of religiosity. Outgroup share was a stronger and more consistent predictor for Protestants than for the other groups. Outgroup diversity also mattered for Protestants, but only when the outgroup share was considered. Outgroup share also predicted religious affiliation among people who grew up as non-affiliated and belief in God among current non-affiliated. For Catholics, however, outgroup diversity was a stronger predictor than its share. Outgroup share predicted only religious affiliation consistently whereas outgroup diversity strongly predicted all four measures of religiosity.

We argue that these differences among religious groups arise from their relative position in the American religious landscape. Despite the declining trend, Protestants still account for about half of the population and are the majority in many counties. Therefore, the variation in outgroup share is often a matter of how dominant a majority Protestants are among the local population. In

predominantly Protestant counties, their religious identity and belief can be strongly supported by local religious cultures, institutions, and networks, and thus taken for granted, even if they do not personally practice the religion.

Because Catholics are a sizable group but rarely a dominant majority in their communities, who comprises their outgroup matters more than its share. Low diversity for Catholics usually means that the outgroup is predominantly Protestant, whereas high diversity means more non-Christians and non-affiliated. These results suggest that Catholics tend to be more religiously involved when Christians (either Protestant or Catholic) are the dominant religious group, and there are fewer non-Christians and non-affiliated in the area. These findings are consistent with the secularization theory's prediction that exposure to religious views of fundamentally different traditions can weaken one's religious commitment.

Finally, the results regarding non-affiliated suggest that secular individuals may be more religiously active if they live in a more religious local community. We found that people who grew up without religious affiliation are more likely to claim an affiliation if a larger share of the local population is religiously affiliated. Conversely, people who grew up without religion are more likely to remain unaffiliated if they live in an area with more non-affiliated. This finding resonates with the social network theory of religiosity, which predicts that religious socialization need not rely on families if the majority of the local population is religious. Additionally, the results for local congregation membership suggest that "fuzzy fidelity" (Voas 2009) might be more common among non-affiliated who live in homogeneous and predominantly Protestant local environments. This finding may also partly explain why non-affiliated in the US remain more religiously involved than their counterparts in Europe (Kelley and De Graaf 1997).

In summary, our analyses confirmed the overall negative relationship between religious diversity of the local population and individual religiosity that many previous studies have reported, but also revealed heterogeneities among major religious traditions in which aspect of diversity matters and how. In particular, we showed how different dimensions of local religious environments could be more consequential for the majority and the minority religious groups. Together, these results support Berger's plausibility thesis as it is reinterpreted through the lens of social network theory. They also emphasize the importance of conceptualizing local religious contexts from each religion's perspective and distinguishing the share of the outgroup from its diversity. This approach revealed important differences that were often obscured in previous analyses relying on a single indicator of diversity and pooling all religious groups together.

We conclude with a brief discussion of remaining challenges, which can hopefully be addressed in future research. First, the results using the alternative measures of local religious contexts from the RCMS data indicated that there was higher uncertainty in some of the results than in others, not only in the strengths of relationship, but even in the direction of the relationship in some cases. Overall, the results for Protestants were well supported by the Gallup and RCMS data, although the strength of the relationship varied between them. The separate analyses of Evangelical and Mainline Protestants yielded similar results, suggesting the relationship may not vary substantially between the two traditions. The analyses for Catholics using the two data sets also resulted in substantively similar conclusions. The main difference between the Gallup and RCMS data emerged in the results for the non-affiliated. This was understandable, because the two data sets defined and measured non-affiliated differently. One concerned an aggregation from individual self-reports and the other a residual of the local population not claimed by religious groups. Overall, these results suggest that accurately measuring local religious contexts in smaller

geographic units remains a major challenge for scholars of American religion, and the choice of data can have consequences. As multiple alternative data sources are now available, we suggest that sociologists of religion take advantage of these sources rather than rely on a single data source, and systematically compare the strengths and weaknesses of different data sets.

Second, this study did not address the issue of religious supply, which consists of another important aspect of the local religious environment. Previous studies relied on the religious diversity of a local population as a proxy for the local religious supply, but we argue that the diversity of a local population is, at best, a poor proxy of the local religious supply, and the latter must be operationalized directly to reflect the key mechanisms that link the local religious supply to individual religiosity. Future research should examine comprehensively how the local religious supply may interplay with the religious composition of a local population to shape individual religiosity.

Finally, although this study used a large survey data set, the cross-sectional nature made it impossible to rule out alternative explanations for the relationships we observed and thus, difficult to draw a conclusive causal inference. For example, religion may play an important role in selecting where to live, both among highly religious and secular individuals, making the local religious contexts potentially endogenous to individual religiosity. The religious context and individual-level outcome variables in this study were drawn from different data sets collected at different times, and the models were adjusted for well-known correlates of religiosity. These measures addressed some of the methodological issues, and a recent study found a similar negative relationship between religious diversity and religiosity in an aggregate-level analysis (Olson et al. 2020). However, the issue of causality remains a challenge to be addressed more thoroughly in future research.

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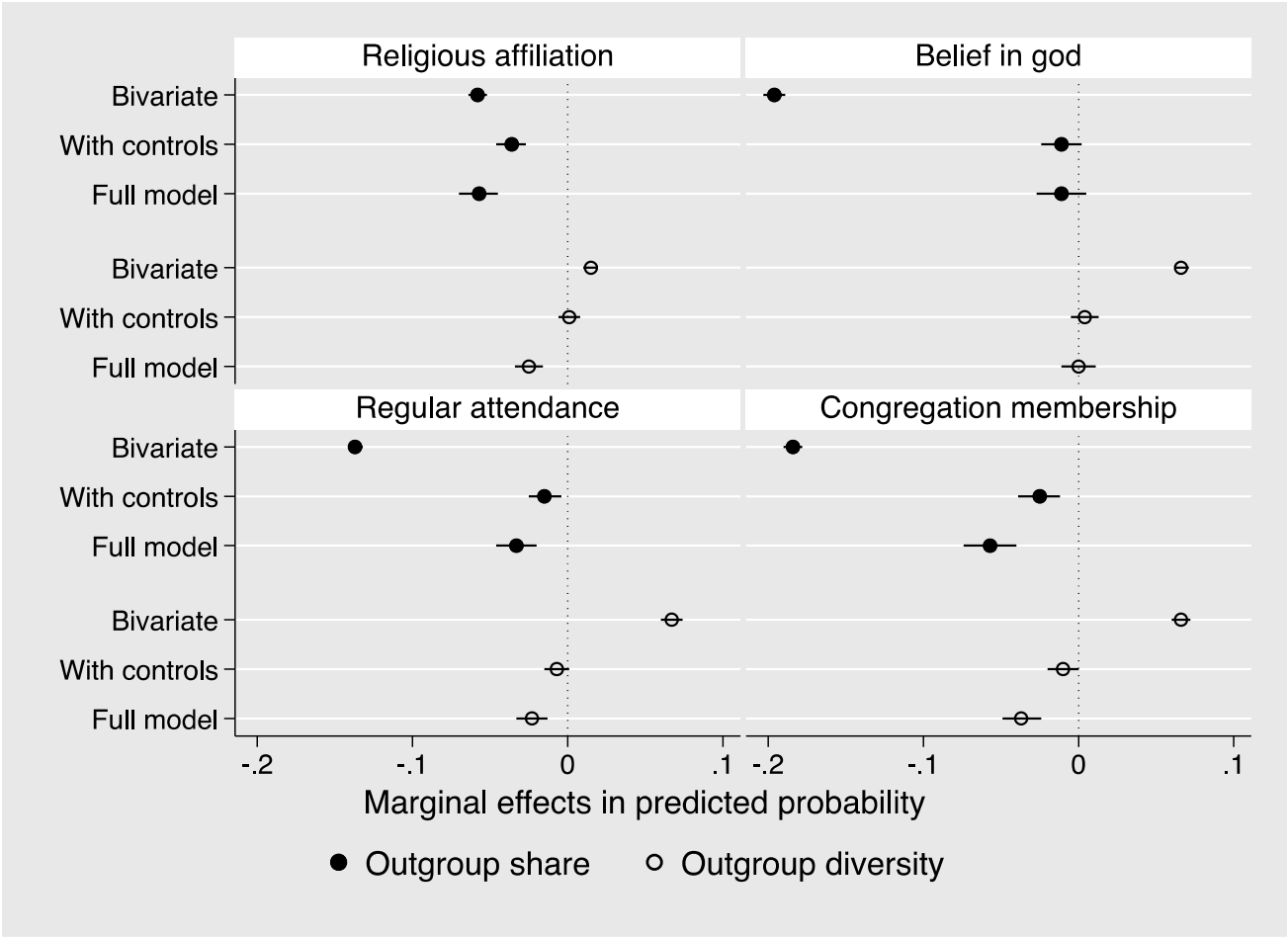


Figure 1. Results of multilevel logistic regressions of individual religiosity on outgroup share and outgroup diversity *among all respondents*.

Note: Each dot represents the marginal effect (i.e., the expected amount of difference in dependent variable in terms of predicted probability) associated with one standard deviation difference in outgroup share (dark circle) and outgroup diversity (hollow circle). The “bivariate” model only includes the focal explanatory variable (outgroup share or outgroup diversity); the “with controls” model adds all individual- and county-level control variables; the “full” models include both outgroup share and outgroup diversity along with all control variables. The 95% confidence intervals are also presented.

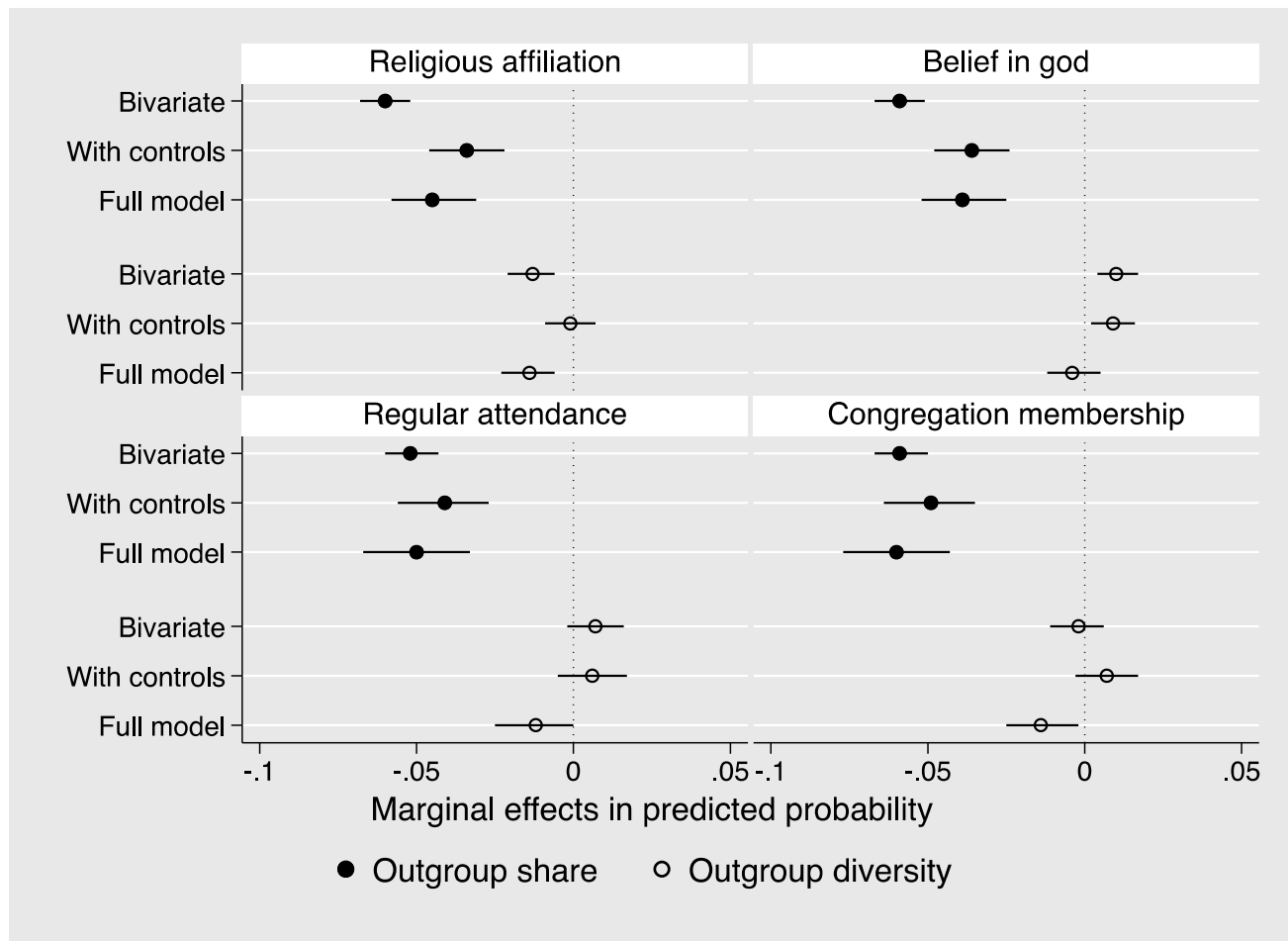


Figure 2. Multilevel logistic regressions of individual religiosity on outgroup share and outgroup diversity *among all Protestant respondents* (please see the note for Figure 1 for more information on this figure)

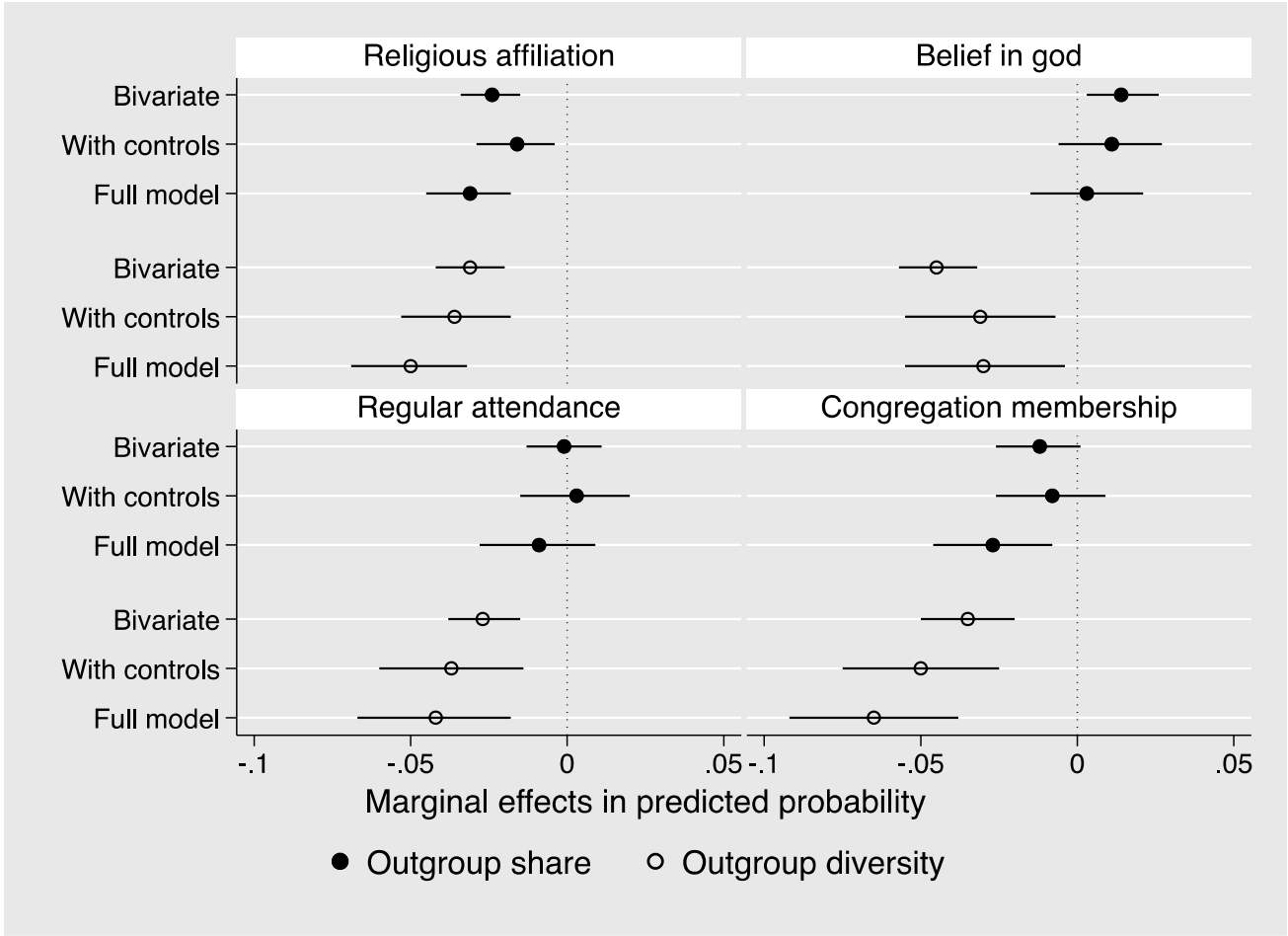


Figure 3. Multilevel logistic regressions of individual religiosity on outgroup share and outgroup diversity *among all Catholic respondents* (please see the note for Figure 1 for more information on this figure)

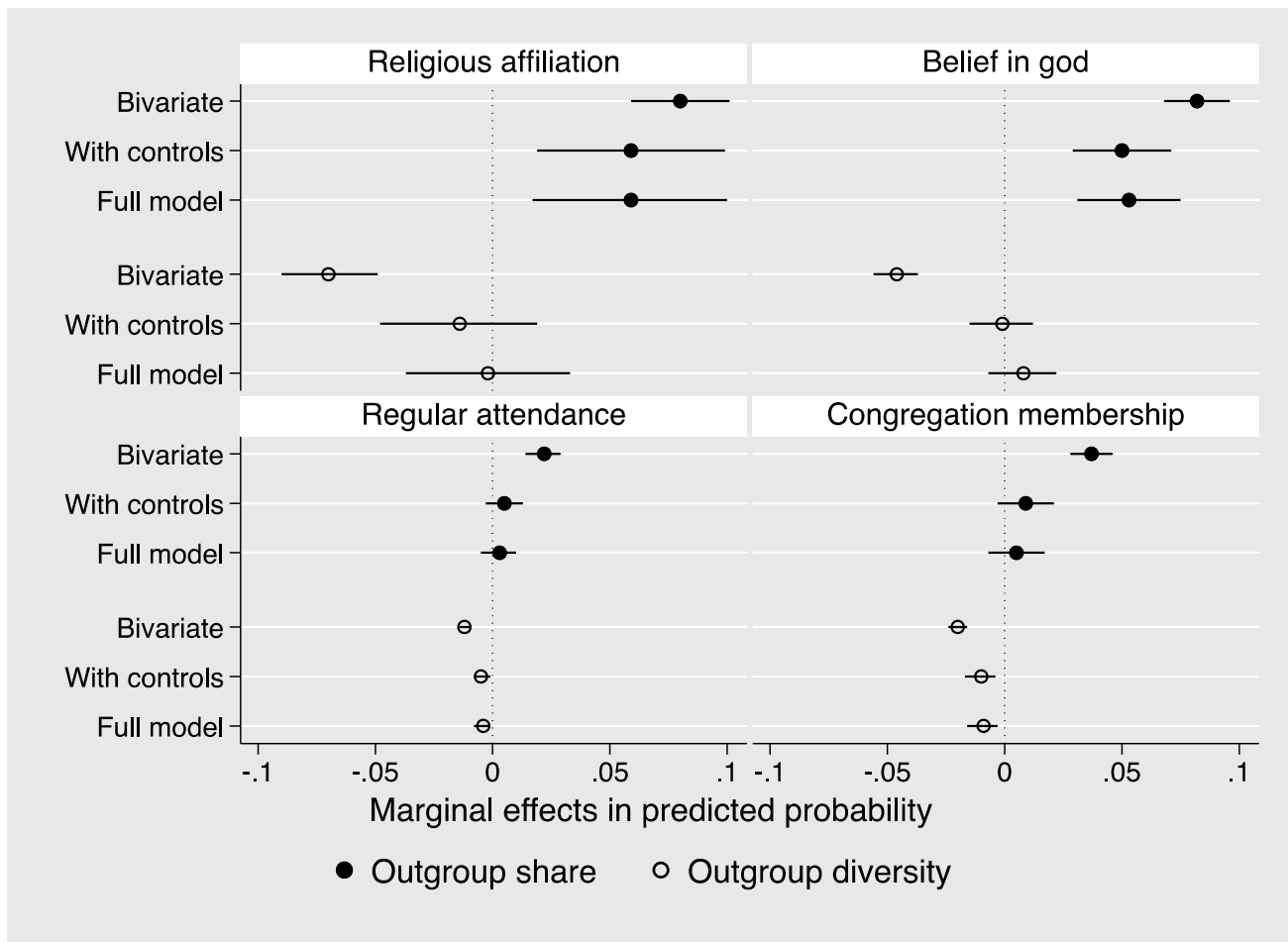


Figure 4. Multilevel logistic regressions of individual religiosity on outgroup share and outgroup diversity *among all non-affiliated respondents* (please see the note for Figure 1 for more information on this figure)

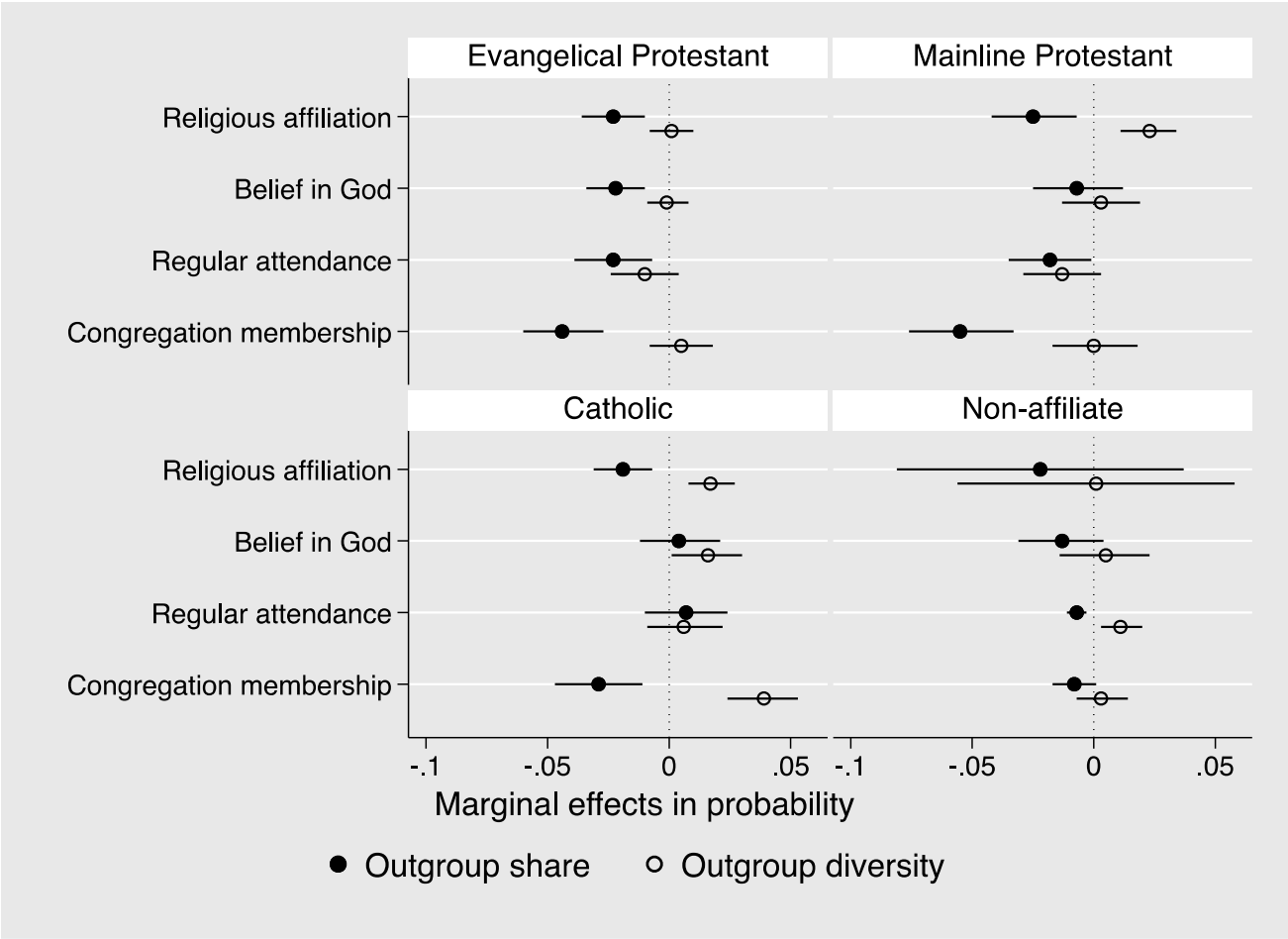


Figure 5. Multiple logistic regressions of individual religiosity on outgroup share and outgroup diversity measured with the 2010 Religious Congregations and Membership Study (RCMS) data *among all Protestant respondents*.

Note: Outgroup share and outgroup diversity were computed with the 2010 RCMS data and distinguished Evangelical, Mainline, and Black Protestant traditions as separate groups. Each dot represents the marginal effect (in predicted probability) associated with one standard deviation difference in outgroup share (dark circle) and outgroup diversity (hollow circle). The 95 confidence intervals are presented.

Table 1 Correlation coefficients among the measures of local religious contexts from the Gallup and the 2010 RCMS data

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Ingroup share (Protestant, Gallup)	1.00													
2 Ingroup share (Catholic, Gallup)	-0.78	1.00												
3 Ingroup share (Non-affiliate, Gallup)	-0.56	0.17	1.00											
4 Ingroup share (Evangelical, RCMS)	0.74	-0.58	-0.55	1.00										
5 Ingroup share (Mainline, RCMS)	0.18	0.01	-0.22	-0.09	1.00									
6 Ingroup share (Catholic, RCMS)	-0.71	0.88	0.17	-0.51	0.02	1.00								
7 Ingroup share (Non-affiliate, RCMS)	-0.06	-0.07	0.50	-0.47	-0.29	-0.28	1.00							
8 Outgroup diversity (Protestant; Gallup)	0.40	-0.62	0.22	0.29	-0.18	-0.55	0.28	1.00						
9 Outgroup diversity (Catholic, Gallup)	-0.83	0.47	0.85	-0.68	-0.29	0.45	0.34	0.10	1.00					
10 Outgroup diversity (Non-affiliate, Gallup)	-0.90	0.80	0.55	-0.72	-0.05	0.71	0.12	-0.29	0.79	1.00				
11 Outgroup diversity (Evangelical, RCMS)	-0.32	0.47	-0.07	-0.14	0.44	0.55	-0.59	-0.29	0.12	0.44	1.00			
12 Outgroup diversity (Mainline, RCMS)	-0.03	0.24	-0.31	0.24	0.15	0.35	-0.65	-0.15	-0.12	0.15	0.68	1.00		
13 Outgroup diversity (Catholic, RCMS)	0.51	-0.30	-0.56	0.54	0.41	-0.17	-0.61	0.08	-0.55	-0.39	0.39	0.67	1.00	
14 Outgroup diversity (Non-affiliate, RCMS)	-0.14	-0.01	0.51	-0.55	-0.18	-0.21	0.91	0.22	0.37	0.22	-0.43	-0.59	-0.57	1.00

Note: For the ease of interpretation, we present the ingroup shares (i.e., the share of each religious group) rather than outgroup share in this table. Outgroup share for each group is simply the inverse of ingroup share. The correlation coefficients were computed for 2,123 counties where the Pew interviewed at least one respondent and the Gallup estimates are based on at least 100 respondents.

Table 2. Descriptive statistics of all variables used in multilevel logistic regression analyses

Variable	Mean	S.D.	Variable	Mean	S.D.
<i>Individual-Level</i>			<i>County-level characteristics</i>		
Age			Region		
24 or younger	0.14	0.35	Northeast	0.19	0.39
25-34	0.16	0.37	Midwest	0.21	0.41
35-44	0.17	0.37	South	0.37	0.48
45-54	0.19	0.39	West	0.24	0.42
55-64	0.17	0.37	Population density	2282	7279
65-79	0.10	0.31	Median household income	43736	10701
80 or older	0.07	0.26	% with college degree or more	29.4	10.5
Female	0.52	0.50	Median age	37.7	4.2
Race			% residents who are Black	12.3	12.7
White	0.66	0.47	% unemployed	9.3	2.5
Black	0.12	0.32	% living in the same house	84.9	3.9
Hispanic	0.15	0.36	Gini index	0.46	0.04
Asian	0.04	0.19	Local religious contexts		
Others	0.04	0.19	Outgroup share		
Marital status			Protestant (Gallup)	0.40	0.17
Married/Patnered	0.56	0.50	Catholic (Gallup)	0.69	0.12
Divorced/Separated/	0.19	0.40			
Widowed			Non-affiliate (Gallup)	0.85	0.06
Never married	0.25	0.43	Evangelical (RCMS)	0.79	0.14
Have kid(s) under 18	0.29	0.45	Mainline (RCMS)	0.91	0.06
Education			Catholic (RCMS)	0.75	0.13
Less than high school	0.10	0.30	Non-affiliate (RCMS)	0.53	0.12
High school graduate	0.31	0.46	Outgroup diversity		
Some college	0.32	0.47	Protestant (Gallup)	0.58	0.08
College degree	0.16	0.36	Catholic (Gallup)	0.47	0.14
Post-graduate eudcator	0.12	0.33	Non-affiliate (Gallup)	0.49	0.13
Respondent's religion			Evangelical (RCMS)	0.48	0.12
Evangelical Protestant	0.25	0.43	Mainline (RCMS)	0.55	0.09
Mainline Protestant	0.15	0.35	Catholic (RCMS)	0.47	0.10
Black Protestant	0.07	0.25	Non-affiliate (RCMS)	0.60	0.32
Catholic	0.21	0.41			
Non-affiliate	0.23	0.42			

Appendix. The results of multilevel logistic regressions of respondent's current religiosity on local religious contexts among all Protestants

VARIABLES	Affiliation (1 = yes)			Belief in God (1 = absolutely)			Congregation membership (1=Yes)			Religious service attendance		
	1	2	3	1	2	3	1	2	3	1	2	3
Outgroup share	-0.237*** (0.039)		-0.307*** (0.045)	-0.242*** (0.038)		-0.261*** (0.043)	-0.224*** (0.032)		-0.268*** (0.037)	-0.166*** (0.030)		-0.201*** (0.035)
Outgroup diversity		-0.007 (0.029)	-0.106*** (0.032)		0.066* (0.028)	-0.027 (0.031)		0.033 (0.024)	-0.064* (0.027)		0.024 (0.022)	-0.049* (0.025)
Age (Ref. = 24 or younger)												
25-34	-0.155 (0.087)	-0.157 (0.087)	-0.153 (0.087)	0.022 (0.106)	0.022 (0.107)	0.022 (0.106)	-0.447*** (0.092)	-0.448*** (0.092)	-0.446*** (0.092)	-0.455*** (0.090)	-0.456*** (0.090)	-0.454*** (0.090)
35-44	0.070 (0.096)	0.071 (0.096)	0.072 (0.096)	0.188 (0.112)	0.186 (0.113)	0.188 (0.112)	-0.220* (0.096)	-0.224* (0.096)	-0.221* (0.096)	-0.246** (0.093)	-0.248** (0.093)	-0.247** (0.093)
45-54	0.614*** (0.094)	0.619*** (0.094)	0.619*** (0.094)	0.475*** (0.106)	0.468*** (0.107)	0.476*** (0.106)	-0.125 (0.090)	-0.134 (0.090)	-0.123 (0.090)	-0.204* (0.087)	-0.211* (0.087)	-0.203* (0.087)
55-64	0.773*** (0.093)	0.771*** (0.093)	0.777*** (0.093)	0.597*** (0.107)	0.595*** (0.107)	0.598*** (0.107)	-0.042 (0.090)	-0.047 (0.090)	-0.041 (0.090)	0.010 (0.087)	0.005 (0.087)	0.011 (0.087)
65-79	1.115*** (0.100)	1.119*** (0.101)	1.121*** (0.100)	0.541*** (0.111)	0.542*** (0.111)	0.542*** (0.111)	0.180 (0.095)	0.176 (0.095)	0.183 (0.095)	0.353*** (0.091)	0.350*** (0.091)	0.355*** (0.091)
80 or older	1.549*** (0.117)	1.548*** (0.117)	1.553*** (0.117)	0.457*** (0.117)	0.455*** (0.117)	0.458*** (0.117)	0.509*** (0.102)	0.502*** (0.102)	0.510*** (0.102)	0.803*** (0.097)	0.796*** (0.097)	0.804*** (0.097)
Female	0.445*** (0.043)	0.449*** (0.043)	0.445*** (0.043)	0.468*** (0.045)	0.471*** (0.045)	0.468*** (0.045)	0.310*** (0.037)	0.310*** (0.038)	0.311*** (0.037)	0.282*** (0.035)	0.282*** (0.035)	0.283*** (0.035)
Race (Ref. = White)												
Black	0.582*** (0.131)	0.549*** (0.131)	0.594*** (0.131)	0.552*** (0.128)	0.521*** (0.128)	0.556*** (0.128)	0.589*** (0.100)	0.560*** (0.100)	0.598*** (0.100)	0.349*** (0.089)	0.323*** (0.089)	0.356*** (0.089)
Hispanic	0.088 (0.107)	0.028 (0.107)	0.088 (0.107)	0.128 (0.102)	0.072 (0.102)	0.128 (0.102)	0.411*** (0.084)	0.348*** (0.084)	0.412*** (0.084)	0.585*** (0.082)	0.533*** (0.081)	0.586*** (0.082)
Asian	0.557* (0.235)	0.546* (0.236)	0.575* (0.235)	-0.104 (0.195)	-0.129 (0.196)	-0.099 (0.195)	0.465* (0.188)	0.446* (0.189)	0.479* (0.188)	0.339* (0.172)	0.328 (0.172)	0.349* (0.173)
Others	0.171 (0.098)	0.159 (0.098)	0.187 (0.098)	0.061 (0.110)	0.040 (0.110)	0.065 (0.110)	0.048 (0.087)	0.026 (0.087)	0.056 (0.087)	0.047 (0.084)	0.031 (0.085)	0.053 (0.085)
Marital status (Ref. Married /partnered)												
Divorced/Separated/Widowed	-0.168** (0.057)	-0.169** (0.057)	-0.173** (0.057)	-0.068 (0.056)	-0.071 (0.056)	-0.069 (0.056)	-0.289*** (0.046)	-0.290*** (0.046)	-0.290*** (0.046)	-0.408*** (0.044)	-0.407*** (0.044)	-0.408*** (0.044)
Never married	-0.183** (0.066)	-0.186** (0.066)	-0.181** (0.066)	-0.034 (0.076)	-0.040 (0.076)	-0.033 (0.076)	-0.282*** (0.063)	-0.288*** (0.063)	-0.281*** (0.063)	-0.173** (0.061)	-0.178** (0.061)	-0.172** (0.061)
Have kid(s) under 18	0.274*** (0.061)	0.274*** (0.061)	0.275*** (0.061)	0.166* (0.066)	0.165* (0.066)	0.167* (0.066)	0.252*** (0.054)	0.251*** (0.054)	0.252*** (0.054)	0.135** (0.051)	0.134** (0.051)	0.136** (0.051)

(Continue in next page)

VARIABLES	Affiliation (1 = yes)			Belief in God (1 = absolutely)			Congregation membership (1=Yes)			Religious service attendance		
	1	2	3	4	5	6	7	8	9	10	11	12
Education (Ref. = Less than high school)												
High school graduate	0.003 (0.105)	-0.002 (0.105)	0.004 (0.105)	0.409*** (0.096)	0.405*** (0.096)	0.409*** (0.096)	0.318*** (0.078)	0.311*** (0.078)	0.319*** (0.078)	0.135 (0.077)	0.131 (0.077)	0.135 (0.077)
Some college	0.132 (0.104)	0.126 (0.104)	0.132 (0.104)	0.469*** (0.096)	0.464*** (0.096)	0.469*** (0.096)	0.425*** (0.078)	0.416*** (0.078)	0.426*** (0.078)	0.180* (0.076)	0.174* (0.076)	0.182* (0.076)
College degree	0.093 (0.108)	0.085 (0.108)	0.091 (0.108)	0.410*** (0.101)	0.411*** (0.101)	0.410*** (0.101)	0.847*** (0.084)	0.844*** (0.084)	0.847*** (0.084)	0.558*** (0.081)	0.555*** (0.081)	0.558*** (0.081)
Post-graduate education	0.031 (0.110)	0.023 (0.110)	0.031 (0.110)	0.276** (0.102)	0.276** (0.103)	0.276** (0.102)	1.019*** (0.088)	1.013*** (0.088)	1.020*** (0.088)	0.682*** (0.084)	0.677*** (0.084)	0.682*** (0.084)
Religious family respondent grew up in	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Current religious family	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Census region (Ref. = Northeast)												
Midwest	0.164 (0.086)	0.347*** (0.083)	0.108 (0.088)	-0.015 (0.081)	0.163* (0.080)	-0.029 (0.083)	-0.039 (0.073)	0.115 (0.071)	-0.072 (0.074)	0.037 (0.068)	0.153* (0.066)	0.012 (0.070)
South	0.034 (0.093)	0.338*** (0.083)	0.009 (0.093)	0.059 (0.089)	0.320*** (0.081)	0.053 (0.089)	-0.064 (0.078)	0.193** (0.071)	-0.081 (0.079)	0.016 (0.074)	0.209** (0.065)	0.002 (0.074)
West	-0.324*** (0.088)	-0.305** (0.097)	-0.225* (0.093)	0.112 (0.089)	0.066 (0.098)	0.137 (0.094)	-0.174* (0.081)	-0.207* (0.087)	-0.114 (0.084)	-0.032 (0.076)	-0.047 (0.079)	0.016 (0.079)
Population density	-0.003 (0.023)	-0.042 (0.023)	0.007 (0.023)	0.037 (0.023)	-0.001 (0.023)	0.039 (0.023)	-0.011 (0.020)	-0.052** (0.020)	-0.004 (0.020)	0.010 (0.019)	-0.021 (0.018)	0.016 (0.019)
Median household income	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
% with college degree or more	-0.018*** (0.005)	-0.023*** (0.005)	-0.014** (0.005)	-0.021*** (0.005)	-0.028*** (0.005)	-0.020*** (0.005)	-0.008 (0.004)	-0.013** (0.005)	-0.006 (0.005)	-0.007 (0.004)	-0.011** (0.004)	-0.006 (0.004)
Meidan age	-0.011 (0.007)	-0.010 (0.007)	-0.009 (0.007)	0.009 (0.007)	0.007 (0.007)	0.009 (0.007)	-0.022*** (0.006)	-0.023*** (0.006)	-0.021*** (0.006)	-0.009 (0.006)	-0.010 (0.006)	-0.008 (0.006)
% Black	0.001 (0.003)	0.003 (0.003)	0.002 (0.003)	0.000 (0.003)	0.002 (0.003)	0.000 (0.003)	0.001 (0.002)	0.003 (0.002)	0.002 (0.002)	0.000 (0.002)	0.001 (0.002)	0.000 (0.002)
% Unemployed	-0.032* (0.013)	-0.038** (0.013)	-0.026* (0.013)	-0.031* (0.013)	-0.040** (0.013)	-0.029* (0.013)	-0.036*** (0.011)	-0.042*** (0.011)	-0.032** (0.011)	-0.025** (0.010)	-0.030** (0.010)	-0.022* (0.010)
% lived in the same house a year ago	0.018* (0.009)	0.013 (0.009)	0.014 (0.009)	-0.004 (0.009)	-0.005 (0.009)	-0.005 (0.009)	0.031*** (0.007)	0.028*** (0.007)	0.028*** (0.007)	0.020** (0.007)	0.019** (0.007)	0.018** (0.007)
Gini index	2.287* (1.095)	1.654 (1.135)	2.596* (1.097)	1.672 (1.106)	0.935 (1.148)	1.753 (1.109)	1.908* (0.942)	1.127 (0.968)	2.099* (0.945)	1.421 (0.872)	0.881 (0.875)	1.564 (0.875)
Constant	-0.720 (0.760)	0.242 (0.772)	-0.922 (0.761)	0.596 (0.760)	1.557* (0.773)	0.546 (0.761)	-1.631* (0.655)	-0.615 (0.655)	-1.745** (0.657)	-1.832** (0.595)	-1.161* (0.584)	-1.925** (0.597)
County_FIPS: Var (Constant)	0.024 (0.019)	0.049* (0.021)	0.024 (0.018)	0.003 (0.016)	0.027 (0.020)	0.003 (0.016)	0.007 (0.011)	0.022 (0.015)	0.007 (0.011)	0.000 (0.000)	0.001 (0.010)	0.000 (0.000)
Observations	16,834	16,834	16,834	15,209	15,209	15,209	15,285	15,285	15,285	15,252	15,252	15,252
Number of groups	2,006	2,006	2,006	1,978	1,978	1,978	1,978	1,978	1,978	1,978	1,978	1,978