

## Survey Data Collection Methods and Discrepancy in the Sociological Study of Religious Congregations

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### ABSTRACT

Surveys of religious congregations are a mainstay of sociological research on organized religion in the United States. How accurate, reliable, and comparable are the data generated from the disparate methods used by researchers? We analyze four congregational surveys to show how two components of data collection—sampling design and survey response rate—may contribute to differences in population estimates between the surveys. Results show that in three populations of congregations (all religious traditions, Catholic parishes, and Hispanic Catholic parishes), estimates of key congregational measures, such as head clergy characteristics, congregational size, and Hispanic composition, are susceptible to differences in data collection methods. While differences in sampling design contribute to some of the variation in variable estimates, our unique analysis of survey metadata shows the importance of high response rates for producing accurate estimates for many variables. We conclude with suggestions for improving congregational data collection methods and efforts to compare survey estimates.

How many people participate in worship services at American congregations? How ethnically diverse are Catholic parishes? What types of activities do congregations engage in? Questions such as these inform recent decades of sociological research on organized religion in the United States (Ammerman 2005, Castelli and Gremillion 1987, Chaves 2004, Konieczny 2018, Matovina 2012, Zech et al. 2017). The answers to these questions, and our confidence in those answers, depend on the social scientific methods that underlie them. How accurate, reliable, and comparable are the data generated from the disparate methods used by researchers?

This article analyzes four national-level surveys of religious congregations to assess how differences in data collection methods affect the empirical portrait of congregations in the United States. The analysis examines three groups of congregations: congregations in all religious traditions, Catholic congregations (parishes), and Hispanic Catholic congregations (parishes). Congregations are the dominant source of organized religious activity in the United States; Catholic congregations are the site for formal religious activity in the religious tradition representing about one-quarter of American adults; and Hispanic Catholic congregations are among the fastest-growing segment of organized religion (Ammerman 2005, Bruce 2017, Cavendish 2018, Chaves 2004, Fulton 2016, Konieczny 2018). This article contributes to congregational studies in general, and Catholic parishes in particular.

The datasets we analyze are well known within the sociology of religion, used by both scholars and religious communities, and provide a basis for public portrayals of congregation-based American religious life. Our analysis focuses on organizational, clergy, and member characteristics that are central to congregational studies and for which comparable measures are available from each survey. We leverage the contemporaneousness of the surveys, using variable estimates across surveys to compare results from their different data collection methods (Smith 2011). We show how two particular components of data collection—sampling design and survey response rate—may contribute to empirical differences in population estimates.

Our results indicate that despite the varying approaches to data collection, the studies produce similar estimates of some congregational characteristics such as having a school and the

number of worship services. Yet, estimates of other measures, such as head clergy characteristics, congregational size, and Hispanic composition, appear to be susceptible to differences in data collection methods. Our results suggest that congregational surveys focused on any dimension of race or ethnicity need a response rate over 60%, otherwise their results are likely to be inaccurate. For example, among two congregational surveys that both collected data via hypernetwork sampling, the one with a higher final response rate estimated that 94% of head clergy are white, while the one with a lower final response rate estimated that only 67% of head clergy are white. Discrepancies such as these have important implications for understanding the basic profile of organized religion in the United States, especially given the changing religious demography of the United States' population.

## BACKGROUND

Issues related to quantitative methodological design have recently gained attention in the sociological study of religion (Finke and Bader 2017, Lehman and Sherkat 2018, Wuthnow 2015). Notably, this attention comes on the heels of a sizeable growth in the number of research projects and datasets that report on American religious life. In the past twenty years, the Association of Religion Data Archives (ARDA) has collated a wide range of datasets from various sources. The Pew Research Center on Religion and Public Life has unveiled numerous, large-scale data collection efforts (Pew Forum on Religion & Public Life 2008, Pew Forum on Religion & Public Life 2013, Pew Forum on Religion & Public Life 2015). Other research organizations, like the Barna Group and the Public Religion Research Institute, have produced a continuous stream of findings and reports about religious beliefs, affiliations, and behaviors that have been of interest to adherents, journalists, and scholars alike.

Given the influx of so much quantitative data on religion by so many different producers, there has been a surprising lack of studies that compare methodological design and corresponding results across datasets. Because a sizeable portion of the sociology of religion is based on survey methodology, and because no one organization or dataset provides the authoritative base for all quantitative analyses, there continues to be a potential problem of differing – even incompatible –

population estimates, research findings, and interpretations. Finke and Bader (2017) noted in their recent assessment of measurement in the study of religion that although surveys are the main method of sociological data collection, their possible deficiencies are rarely analyzed. In a critical historical treatment of the rise of survey research in the study of American religion, Wuthnow (2015) asserted that the widespread embrace of polling has degraded data quality and conceptualization. Poorly executed surveys have led to misleading representations of organized religion as racially homogenous and overwhelmingly white. As an example, Wuthnow (2015:195) stated, “in surveys including only the easiest-to-reach respondents [e.g., those that are quickest to respond], white attendance is overestimated and black attendance is underestimated.”

Beyond the sociology of religion, the general widespread proliferation of surveys has resulted in people becoming less willing to respond to them (Dillman et al. 2014; Rogelberg and Stanton 2007). Many prospective respondents—especially organizational leaders—are flooded with requests to complete surveys, which can produce survey fatigue and increase the likelihood of nonresponse (Gupta et al. 2000; Porter et al. 2004; Weiner and Dalessio 2006). It is important to assess the nonresponse bias contained in each variable, because nonresponse bias occurs at the level of individual survey items rather than at the level of a survey (Groves et al. 2006). Each variable possesses its own estimate of nonresponse bias and some variables may be more susceptible to nonresponse bias than others because they measure characteristics that are associated with nonresponse. Therefore, nonresponse analyses become more comprehensive as they increase the number of variables they analyze.

Furthermore, comparisons and critiques of differing survey methods have yielded important insights relevant to the sociology of religion. For example, Fulton (2018) found that the survey response patterns of organizational key informants are significantly related to their personal characteristics and the characteristics of their organizations. His analysis of data from a key informant study of community-based organizations provides evidence that studies which conclude data collection after achieving a relatively low response rate might be: 1) more likely to overestimate the proportion of organizations with directors who are white, U.S.-born, college-

educated, and full-time employees; and 2) more likely to underestimate the proportion of organizations that are older, have more revenue, and have fewer employees.

Our study adds to the recent emphasis on methodological evaluation within social science in general and the sociology of religion in particular. Methodologically, by using similar techniques, we extend research on the relationship between response rates and nonresponse bias (Gile, Johnston and Salganik 2015, Groves and Lyberg 2010). Substantively, we focus our analysis on congregational survey data to determine whether and why such data may vary with differences in approaches to data collection. We consider both the method of sampling – hypernetwork or list-based – and the influence of response rate, a factor that is largely determined by data collection decisions, such as how many contacts, what means of contact, and whether and how to offer incentives for participation. Because these decisions are part of the study design, we consider response rate to be a subcategory of data collection methods.

## THE CONTEXT OF CONGREGATIONAL SURVEYS

The past three decades have witnessed extensive methodological and financial investment in the study of religious congregations and congregational populations (Ammerman 2005, Chaves 2004, Dudley and Roozen 2001, Munday, King and Fulton 2019, Woolever and Bruce 2010). During that time, research on congregations has been the source of ongoing debate both regarding conceptualization (Cadge 2008, McGrew and Cnaan 2006, Warner, Wind and Lewis 1994) and measurement (Chaves et al. 1999, Cnaan and Boddie 2001, Cnaan and Curtis 2013, Hodgkinson, Weitzman and Kirsch 1988).

In the early 1990s, the study of congregations faced two critical problems. First, there was no readily available, accurate sampling frame (Chaves et al. 1999). While some congregations could be easily traced and tracked – for instance through Catholic dioceses – many others were not part of religious institutions with such repositories of information. As a result, researchers had to rely on publicly available records, such as phonebooks, to build a sampling frame for the general congregational population (Hodgkinson, Weitzman and Kirsch 1988). This approach appears to have constructed sampling frames that underrepresented small, under-resourced, low-

visibility, minority, and otherwise reluctant congregations (Chaves 2002). The difficulty of generating a comprehensive, national sampling frame diminished the accuracy of congregational surveys. A second problem was that researchers faced daunting financial and time challenges that included contacting congregations spread across the county and recruiting participants from sectarian groups inhospitable to scientific attention.

To overcome these challenges, researchers often focused on specific denominations or geographic areas, which may have increased empirical accuracy for those groupings (Edgell 2006, Roof and McKinney 1987). For example, the Notre Dame Study of Catholic Parish Life used official records of Catholic dioceses to sample over one thousand parishes across the United States (Castelli and Gremillion 1987). Other studies surveyed congregations within a known city boundary (Cnaan and Boddie 2001, Wuthnow 2009). These approaches, however, tend to limit the generalizability of findings and were sometimes constrained to mail-based or in-person distribution, which made high response rates costly due to the necessity for resource-intensive follow-up.

Despite these research hurdles, scholars and funders regained interest in congregations in the 1990s due to the role of congregations in the mobilization of the Religious Right, declines in Mainline Protestant congregations, and increased interest in the role of religious organizations in civil society. Accordingly, a number of scholars from the late 1990s onward produced congregational studies, many of which utilized different sampling and data collection methods (Chaves 2004, Davidson and Fournier 2006, Dudley and Roozen 2001, Fulton and King 2018, Woolever 2004, Woolever and Bruce 2010, Zech et al. 2017). Private foundations provided substantial investment in these efforts, including the Lilly Endowment, the Louisville Institute, and the Luce Foundation (Chaves 2004, Smilde and May 2015, Woolever and Bruce 2010).

These studies shared the empirical aim of representing congregational populations but had divergent approaches to data collection. This made it possible for us to compare sampling designs and response patterns and assess their impact on population estimates. We are unaware of any prior systematic comparisons of estimates from congregational studies that used different data

collection methods.<sup>1</sup> Our study aims to contribute to sociologists' reflexive awareness of their research enterprise (Smilde and May 2015) by seeking to better understand how different sampling designs and response rates affect the final results for different national-level surveys of congregations.

## DATA AND METHODS

We compared the 2012 National Congregations Study (NCS) with three other studies that each represent a distinct congregational population. To analyze the estimates of the national congregational population, we compared the 2012 NCS with the 2008/09 U.S. Congregational Life Study (USCLS).<sup>2</sup> For the NCS and USCLS, we used publicly available datasets to calculate population estimates.<sup>3</sup> To analyze the estimates of the Catholic parish population, we compared the 2012 NCS and the 2010 Emerging Models of Pastoral Leadership Project (EMPLP). To analyze estimates of Hispanic Catholic parishes, we compared the 2012 NCS and the 2012-2013 National Study of Catholic Parishes with Hispanic Ministry (NSCPHM) (Ospino 2014, Ospino 2015). Neither the EMPLP nor the NSCPHM datasets were publicly available, so we used published findings of survey estimates (Gray et al. 2013, Gray, Gautier and Cidade 2011, Ospino 2014, Ospino 2015, Zech et al. 2017).<sup>4</sup> Table 1 shows an overview of the surveys. Although the final NCS subsample sizes for Catholic and Hispanic Catholic congregations are smaller than those for the EMPLP and NSCPHM, they are sufficient for statistical analysis and to ensure a

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<sup>1</sup> Wuthnow (2009) is a notable exception, but with a focus limited to social services.

<sup>2</sup> We considered using the second wave of the NCS (2006) for this comparison, but it did not have the metadata required for our analysis.

<sup>3</sup> The data were downloaded from the Association of Religion Data Archives, [www.theARDA.com](http://www.theARDA.com).

<sup>4</sup> We requested, but were unable to obtain raw data files or, in lieu of those, summary statistics that would allow for variable means tests between samples.

representative sample – especially given the NCS’s higher response rate.

INSERT TABLE ONE HERE

We used the NCS as a benchmark because the NCS has, by a wide margin, the highest response and completion rates of all the congregational surveys in our study. The NCS is also recognized as containing the most representative sample of congregations in the United States (Bartkowski 2006, Bender 2005). As Wuthnow (2009:38-41) commented regarding the initial wave of the NCS, it “may reasonably be considered the gold standard as far as current research is considered ... [and is] the most innovative approach to generating data from a national sample of congregations.” The NCS was the first congregational survey to use hypernetwork sampling. Whereas more traditional list-based sampling randomly selects from a known population of organizations, hypernetwork sampling starts with a random sample of individuals and develops an organizational sample by identifying the organizations with which those individuals are associated (McPherson 1982).

The NCS hypernetwork sample is constructed from respondents to the General Social Survey (GSS) who said they attended worship services in the last year. These respondents were asked for the name and location of their congregations. Congregations were contacted first by phone, then by in-person visits, if needed (8.5% of cases) (Chaves and Anderson 2014). In the final dataset, each case is weighted according to the number of adults that regularly participated in the congregation. This weighting adjusts for the probability that larger congregations were more likely to be mentioned by GSS respondents. The NCS’ third wave reported a response rate between 73% and 78%.<sup>5</sup> We employ the 78% rate because it is based on GSS respondents that

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<sup>5</sup> If one were to include non-response bias by *individuals* to the GSS itself, the NCS response rate would be lower (Wuthnow 2009). However, since other surveys do not incorporate such individual-level response bias, we do not. The lower rate (73%) incorporates those GSS respondents that said they attended worship in the previous year, but then failed to report any



provided congregational information.<sup>6</sup>

The NCS was deployed through the National Opinion Research Center (NORC), which retained record of call (ROC) data from administration of the 2012 NCS. We purchased the ROC data from NORC, which includes the number of contact attempts required to complete a case. All NCS cases were initially contacted through mail with a welcome letter. Nearly all ensuing contacts attempts were phone calls used to recruit participation, to schedule a time to complete the survey, or to conduct and complete the survey. For 34% of cases, one of the contact attempts included sending a personalized letter to gain cooperation when reluctance was encountered. Although the ROC data do not include the dates of contact attempts, we are able to organize the responses obtained at one contact attempt, two contact attempts, and so on, through a maximum of 93 attempts. Two percent of the NCS sample population responded after two attempts and 12% after four attempts. The mean number of contacts is 15, the median is 12.<sup>7</sup> With these data, we are able to reconstruct and examine what the NCS sample looked like at successive points along the response rate continuum. We know the response rate at each integer of contact attempts and can

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congregation name or location in the follow-up question. The higher rate (78%) treats those respondents as if they had not attended worship services in the previous year.

<sup>6</sup> The USCLS does not make a similar distinction in the reporting of its response rate, so we assume its response rate includes only hypernetwork respondents that actually named a congregation.

<sup>7</sup> Contact attempts are slightly negatively correlated (.053) with respondent interest in participation. Yet NCS paradata recorded by surveyors indicate respondents were overwhelmingly interested to participate (87.9% of respondents were “friendly and interested,” 11.5% were “cooperative but not particularly interested,” .6% were “impatient and restless,” and zero cases were hostile.)

analyze the survey results collected at each of these response rates.

One advantage this analysis provides is that we can determine the response rate at which a variable's final sample mean stabilizes.<sup>8</sup> Because of the nature of the data collection methods, the NCS is the only one of the surveys that allows for this type of analysis. Therefore, we use the NCS as the comparison point and examine NCS estimates at or near the response rates of other surveys, providing a like-for-like comparison based on similar a response rate.<sup>9</sup>

One limitation of the NCS is that the size of the sample for any given year never exceeds 2000 cases; therefore, it cannot provide reliable estimates for small religious groups that have only a small number of congregations. Also, because the NCS is a general survey meant to be relevant to all types of congregations, its questions miss distinctiveness between religious groups. For example, the NCS does not examine worship elements that are exclusive to some religious groups (e.g., communion; reading specific Torah passages).

The USCLS (Wave 2) is a congregation-focused study that uses separate survey instruments deployed at the same time to gather data on three congregational entities: the congregation, the

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<sup>8</sup> Stabilization is the response rate at which a variable's cumulative mean entered, and remained within, the 95% confidence interval derived from the final mean of the variable, after survey collection ended.

<sup>9</sup> Since the NCS' ROC data is reported by contact attempt, with numerous cases being completed at any given contact attempt, the response rate "jumps" between any given contact attempt threshold, with response rates in between indistinguishable. We are conservative in our comparisons, using the next identifiable NCS response rate that is greater than that of the compared survey.

congregation's principal leader, and attendees in the congregation.<sup>10</sup> The hypernetwork congregation sample was derived from a survey constructed by Harris Interactive of adults in the United States (Salomon and Dickin 2009). The survey of adults had 3,000 cases, with a 48.5% response rate. Of these cases, 2,194 (73%) attended religious services and 1,592 (53% of total; 73% of attenders) nominated a congregation, with 1,330 (84%) of nominated congregations verified.<sup>11</sup> Of 1,330 congregations in the congregational sample, 145 cases were eventually completed. In addition, congregations that participated in the first wave of the USCLS were invited to participate in the second wave, yielding another 106 completed cases from 411 invited.

All congregations received three recruitment packets by mail, with repeated (but not documented) contacts by telephone to encourage participation. Due to recruitment difficulties, up to two more mailings were sent to congregations, along with additional phone contacts (Salomon and Dickin 2009). The survey instruments were distributed by mail, with reply envelopes provided, as well as a link to a web collection for the leader surveys. The final congregational sample includes 251 completed cases out of 1,741, a response rate of 14% (Woolever and Bruce 2010). The final clergy sample includes 692 completed cases, for a response rate of 39%.<sup>12</sup> To compare the NCS and USCLS, we used publicly available data files and survey weights from the ARDA. To make the clergy sample of the USCLS comparable to the NCS, we included only the

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<sup>10</sup> We thank Perry Chang for clarifying the scope of the USCLS project and providing the referenced methodology report.

<sup>11</sup> The 73% of the Harris Interactive sample reporting attending religious services in the last year which is similar to the 74.7% in the GSS.

<sup>12</sup> We were unable to determine exactly why the USCLS' clergy survey had a much higher response rate than its organization-focused survey, but it appears that participation in the leader survey was solicited and accepted from congregations that had previously declined participation in the attender surveys.

USCLS clergy cases with information about the head clergyperson.<sup>13</sup>

The EMPLP is a key-informant survey completed in 2010 by the Center for Applied Research in the Apostolate (CARA) at Georgetown University (Gray, Gautier and Cidade 2011, Zech et al. 2017). The EMPLP sampling is based on the known population of Catholic parishes in *The Official Catholic Directory*, a compilation of Catholic parish and Catholic organizational information in the United States.<sup>14</sup> To construct the sample, CARA stratified the population of parishes by “the percentage of the Catholic population and the percentage of the number of Catholic parishes in the United States in each archdiocese or diocese as reported in *The Official Catholic Directory*” (Zech et al. 2017:147-48). The logic of this strategy was to ensure national representation among parishes of different sizes. The response rate for the 2010 survey was 15.3%. No univariate confidence intervals are publicly available, so we used the reported “margin of sampling error” of +/- 3.3% (Zech et al. 2017:148). Private communication with CARA staff indicated that the survey was distributed by mail and followed up with a maximum of three contacts by mail or email. The comparable NCS sub-sample (n=350) comprises cases in which religious tradition is coded as “Roman Catholic.”

The NSCPHM is also a key informant study conducted by CARA. According to the published description, the researchers contacted staff members at all U.S. Catholic dioceses to ascertain which parishes served Hispanics. From this outreach effort, “a parish database was developed ... [and augmented by] researching available resources identifying Catholic communities with Hispanic ministry” (Ospino 2014:10). The logic of this sampling design strategy was to uncover an otherwise unobserved ethnic/racial set of Catholic parishes in order to

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<sup>13</sup> This constraint removed 13 cases from the USCLS sample.

<sup>14</sup> Despite the availability of an officially sanctioned, centrally organized list of parishes, one list-based parish survey reported that 8% of its surveys did not reach their targets due to inaccurate address information (Zech et al. 2017:151).

better understand the unique experience of Hispanic Catholics (Adler and Starks 2018, Reynolds 2018). The survey was distributed by mail, with parishes then contacted by phone and given the option to respond online. The response rate for the survey was 13.1%, with a reported margin of error of +/- 3.8%. The NCS sub-sample of Hispanic parishes (n=177) comprises Catholic cases that reported having at least one of the following characteristics: 1) a Spanish language worship service (168 cases); 2) an English-language service specifically for Hispanic persons (6 additional cases); or 3) 40% or more of attendees being of Hispanic ethnicity (3 additional cases).<sup>15</sup>

### *Analytic Strategy*

We identified comparable variables from each survey that measure congregational characteristics frequently used to portray the landscape of congregations in the United States: congregation size, staff composition, clergy characteristics, worship information, member/attendee demographics, and activities. The Appendix contains the wording of the variables from each survey, except the NSCPHM, whose survey instrument is not publicly available.

The first analysis, using the NCS and USCLS, compared slightly different hypernetwork sampling designs with very different response rates. The second analysis, using the NCS Catholic cases and the EMPLP, compared hypernetwork sampling to list-based sampling, as well as starkly different response rates. The third analysis, using the NCS Hispanic Catholic cases and the NSCPHM, compared hypernetwork sampling to list-based sampling refined by outsider knowledge, again with starkly differing response rates.

Each analysis proceeds in three steps. First, we present figures that plot the estimated means and 95% confidence intervals for each variable and summarize similarities and differences between surveys based on these figures. Second, we show response rate patterns for some variables whose estimates differ between surveys. For these variables we present figures that plot the NCS estimates across the response rate continuum built from the NCS record of call data. Each plot

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<sup>15</sup> The NCS Hispanic parish sample includes 35 cases from the NCS Hispanic oversample based on Spanish-speaking respondents to the GSS for which the NCS weight adjusts.

displays the response rate as derived from the number of cases completed at each contact attempt level relative to the final number of completed cases. We discuss the similarities and differences in population estimates based on early and final response rates. Third, we consider whether inter-survey differences are due to sampling design, response rate, or both.

## RESULTS

### *Congregations of All Religious Traditions*

Figures 1 through 3 show the means and 95% confidence intervals (CIs) of variables included in both the USCLS and the NCS.

Figure 1 shows variables measured as percentages or years with values up to 100. Of the ten variables compared, the estimates for five variables have non-overlapping CIs, indicating the differences in means/percentages are statistically significant. Further, three variables with overlapping CIs have statistically different sample means when examined with an independent samples t-test (Belia et al. 2005). Only two variables—immigrant services and schools—are *not* statistically different between the samples. The variables with statistically significant different estimated means/proportions between surveys are: political opportunities, voter drive, age of congregation, age of head clergy, gender of head clergy, Hispanic head clergy, Black head clergy, and white head clergy. Some of these differing estimated values derived from the two datasets produce substantially different views of the national population of congregations. For example, the NCS estimates that about 67% of head clergy are white, while the USCLS estimates that about 93% of head clergy are white.

### INSERT FIGURE ONE HERE

Figure 2 shows the mean and 95% CI of count variables (with a mean value less than 10) included in both the USCLS and the NCS. Although all the CIs overlap, three of the variables have significantly different means between samples: number of worship services ( $p=.04$ ), full-time staff ( $p=.03$ ), and full-time ministerial staff ( $p=.03$ ). The NCS estimates a larger number of full-time staff, more ministerial staff, and more worship services. We note that the NCS CIs are much wider than the USCLS CIs. Although the NCS sample is larger than the USCLS sample,

which typically corresponds with a narrower CI, the NCS values appear to contain more variation.

INSERT FIGURE TWO HERE

Figure 3 shows the median, mean, and 95% CI of count variables (with a mean value greater than 100) included in both the USCLS and the NCS for three measures of congregation size: the number of regular participants, the number of regular adult participants, and total persons associated with the congregation. Most of the measures of congregational size have non-overlapping CIs between the two surveys, indicating statistically significant differences.<sup>16</sup> The substantial difference between the mean and median values for the number of regular participants and regular adult participants in both surveys indicates that the typical congregation in the United States is relatively small, but the presence of very large congregations right-skews the sample mean. Notably, for each measure of size, the NCS estimated mean value tends to be smaller than the USCLS value. This suggests that the NCS sample contains a larger percentage of small congregations, a known sample characteristic of the NCS in comparison to other congregational studies (Wuthnow 2009).

INSERT FIGURE THREE HERE

It appears that the USCLS national sample of congregations is distinctly different from that of NCS. The USCLS sample is characterized by older, larger congregations that are more likely to be led by clergy that are white, female, and younger. We see two possible explanations for these differences.

First, there is a small time gap between the two surveys, with the USCLS occurring in 2008/2009, three years earlier than the NCS. It is possible that real changes occurred in the congregational population over the time period, creating the differences reported above. However,

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<sup>16</sup> The surveys' estimates for mean number of total persons associated with congregations is not shown in the figure because of scale differences with other measures. However, we note that the surveys' means of this measure are not significantly different.

longitudinal evidence between waves of the NCS casts doubt on this answer. The NCS shows no significant difference between the 2006 and 2012 waves in the mean number of regular participants (2006=184, 2012=131,  $p=.87$ ) of regular adult participants (2006=124, 2012=118,  $p=.53$ ). Regarding white clergy, the NCS value in 2006 (69%) was higher than the value in 2012 (67%), but the over-time difference is not significant. (The NCS 2006 value for white clergy also does not overlap with the 95% CI of the USCLS 2008 value.) The pattern of no significant change between NCS waves also holds for congregational age, clergy sex, and Black clergy. For one variable with significant change between NCS waves—political opportunities (down from 21% to 15%,  $p=.01$ )—the USCLS’ 2009 value of 25% appears substantially different from the NCS.

For two variables, the time difference between the USCLS and NCS may have led to the different results. For clergy age, the NCS records significant changes between waves (from 53 to 55,  $p=.04$ ), with the NCS’ 2006 value similar to the USCLS’ 2009 value. For Hispanic head clergy, the NCS records significant change in the percentage of Hispanic head clergy between waves two and three (from 2.5% to 5.8%,  $p=.026$ ). The NCS 2006 value is similar to the USCLS 2008 value. This particular time-based difference makes sense given well-documented growth in Hispanic religious demography over the time period (Martí 2015, Mulder, Ramos and Martí 2017).

Given that time separation between the surveys does not account for most of the observed differences, a second possible explanation is response rate. We explored this possibility by examining two variables from the NCS. Figures 4 and 5 show how the NCS’ estimated means for number of regularly participating adults and percentage of white head clergy change across response rates. The x-axis displays the NCS response rate percentage (up to 78%) derived from the number of cases completed at each contact attempt. The solid horizontal curve displays the NCS cumulative mean which is smoothed with a loess procedure. The darker shaded area shows the 95% CI for the NCS final mean estimate, with the final mean included within as a horizontal line. The lighter shaded area shows the tightening of the 95% CI as the response rate increases. The dashed horizontal line indicates the USCLS mean estimate, while the dotted vertical line indicates the final response rate



achieved by the USCLS. Due to the wide variability in the first 5% of responding cases, the plot begins after 5%.

#### INSERT FIGURE FOUR HERE

According to the response rate analysis shown in Figure 4, the mean number of regular adult participants in the NCS sample while remaining within the 95% CI, started low, then increased and decreased slightly. In comparison, the USCLS estimated mean number for adult participants at its final response rate of 14% is substantially higher. The large gap between surveys at the 14% response rate (NCS = 128, USCLS = 232) is indicative of some type of structural difference between the surveys involving sample construction. If the sampling processes had produced similarly representative samples we would expect the estimates at the 14% response rate to be more similar. It is possible that a higher response rate for the USCLS congregation survey would have shifted its estimate downwards through the inclusion of a greater percentage of relatively small congregations. However, the marked differences in the surveys' means at a low response rate indicates differences in underlying sample constructions that likely would have produced conflicting estimates even if the USCLS had achieved a higher response rate.

Figure 5 shows that the estimated percentage of congregations led by white clergy took longer to stabilize in the NCS; it did not come within the 95% CI until a 62% response rate. For this variable, a high response rate appears to have been crucial to overcoming early-responder bias. At a response rate of 39%, the USCLS clergy survey's estimated percentage of white clergy is substantially higher than the NCS's still over-estimated value (NCS = 79%, USCLS = 94%). Again, it is possible that the USCLS estimate would have come closer to that of the NCS had the USCLS response rate been higher. However, the sizeable difference in the surveys' estimates at the USCLS's final response rate suggests that there may have been underlying differences in sample construction and data collection protocols that had a notable effect.

#### INSERT FIGURE FIVE HERE

In summary, the data collection differences between the NCS and the USCLS appear to have influenced their differing results. While these differences do not matter for producing similar estimates

on some characteristics (see Figure 1), they do matter for basic congregational characteristics such as size, head clergy race, head clergy age, head clergy sex, and political engagement. Further, the response rate analysis suggests that higher response rates are especially important for generating accurate estimates for these characteristics because smaller congregations led by white clergy tend to be overrepresented among early responders.<sup>17</sup>

### *Catholic Parishes*

We now turn to a comparison of survey methods for studying Catholic parishes. Figures 6 and 7 show the means and 95% CIs of variables from the NCS and the EMPLP. The results in this section are conservative, as we were unable to access raw data to produce means tests. It is possible that more differences in variable estimates exist between samples than indicated by CIs.

Figure 6 shows variables measured as percentages. The following variables have different estimated means and their CIs do not overlap, indicating statistically significant differences: multicultural parish,<sup>18</sup> Spanish language worship services, Hispanic composition, and white composition.<sup>19</sup> There are a number of measures for which the EMPLP mean has overlapping CIs with

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<sup>17</sup> An analysis of all 259 variables in the 1998 NCS (Wave 1) reported that 70% of variables stabilized at a 60% response rate, and 90% of variables stabilized with a 70% response rate.

Similar to our findings, key measures such as clergy race and congregational theological orientation required response rates higher than 70% to stabilize (Hoegeman and Chaves 2008).

<sup>18</sup> Multicultural parish status was determined using CARA's criteria, which comprise at least one of the following: a non-English worship service, an absolute level of non-Hispanic white composition below 40%, or the sizeable presence of multiple non-white demographic groups as measured by a diversity index above 33%. See Appendix for details.

<sup>19</sup> NCS racial/ethnic composition percentages are based on regular adult participants, while EMPLP percentages are based on registered parishioners. Although these measures of

the final NCS mean: social services, parish school, Asian composition, Black composition, Hispanic head clergy, Black head clergy, and white head clergy. We note that, even with overlapping CIs, the difference in mean point estimates on these variables can still be quite large.<sup>20</sup>

INSERT FIGURE SIX HERE

Some of these measures produce distinctly different views of the national Catholic parish population. For example, the NCS estimates that the mean percentage of white regular adult participants in a Catholic congregation is 62%, while the EMPLP estimates that white people comprise 78% of registered parishioners.<sup>21</sup> Regarding Spanish-language worship services, the NCS estimates that at least 38% of parishes offer a Spanish-language service in a given month, while the EMPLP estimates that 23% of parishes offer a Spanish-language service in a given

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congregational size are not identical, they are the best comparable measures for determining relative proportion of a congregation's racial/ethnic membership composition.

<sup>20</sup> If raw data were available, t-tests might reveal significant differences even with overlapping CIs.

<sup>21</sup> The EMPLP reports no statistical weighting procedure, but its pre-sampling stratification attempted to adjust for parish size so that large parishes in some regions would not skew representativeness. It is unclear how this stratification affects its estimates, especially of demographics, but it is logically similar to the post-collection size adjustment produced through the NCS statistical weight. We verified the absence of mean and median size differences among predominantly (80% or greater) white, Black, and Hispanic parishes in the NCS to confirm no systematic skew to this measure. An attendee-level weight would be useful for a complete demographic comparison but is not present in the EMPLP data.

month.<sup>22</sup> The NCS data show that the majority of Catholic parishes are multicultural (60%). By contrast, the EMPLP data show that just over one-third of parishes are multicultural (36%).

Figure 7 shows the estimates and 95% CIs for count variables (with a mean less than 10) regarding staffing and worship services. The NCS and the EMPLP report identical estimated means for number of worship services. However, the NCS reports a lower median number of worship services (8 vs. 9), a notably smaller mean number of ministerial staff members, and a smaller mean number of total staff members. The differences suggest that the NCS may have constructed a sample with a different resource distribution that includes more low-resource parishes.

INSERT FIGURE SEVEN HERE

Though not shown, the NCS and EMPLP report similar size estimates of the total number of people who attended worship services on a given weekend, with clearly overlapping CIs. For both surveys, the median values are lower than the mean, which indicates a skewed size distribution among parishes in general.

Overall, it appears that the EMPLP sample of Catholic parishes differs from the NCS sample in that it contains a greater proportion of predominantly white parishes, a smaller proportion of predominantly Hispanic parishes, and a greater proportion of parishes with a larger number of ministerial staff. We now explore the possibility that differences in response rates explain these differences. The following graphs do not use a loess smoothing procedure for the cumulative mean because the loess procedure would hide important response rate threshold effects that appear to exist among Catholic parishes.

Figure 8 displays a response rate analysis of total weekend attendees. We included this figure to show how, even if the surveys' estimates of a measure are similar, salient size distribution information may be missing. At the response rate at which the EMPLP stopped collecting data, the two surveys have a similar mean estimate. However, the graph shows a

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<sup>22</sup> The NCS measures *weekly* Spanish language services, suggesting that *monthly* Spanish language services might be provided by additional parishes not counted in the estimate.

noticeable spike in parish size as the response rate grows in the NCS, with numerous large parishes responding after a 20% response rate. Beyond that point, the NCS' cumulative mean slowly declines, presumably as relatively smaller parishes responded. This figure suggests two conclusions. First, that "average" size parishes responded early, and second, that a low response rate like that of the EMPLP may not capture the actual size diversity that exists within the population of parishes.

INSERT FIGURE EIGHT HERE

Figure 9 offers evidence that differences in response rates may have generated the differences in final mean estimates between the samples, showing that the NCS and the EMPLP have relatively similar estimates of Hispanic composition at the point where the EMPLP stopped collecting cases. However, the addition of more responding cases in the NCS changed the final mean estimate. In the early stages of response rates, the NCS and EMPLP appear to have similar underlying sample structures. The earliest responding parishes in both surveys appear to be much less Hispanic.<sup>23</sup> It is possible that with a higher response rate, the EMPLP's estimate of Hispanic composition would have risen, becoming more similar to the final NCS estimate.

INSERT FIGURE NINE HERE

In summary, the NCS and the EMPLP appear to have similar sample structures at the outset, with a similar pattern of early-responding cases. However, we find evidence that response

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<sup>23</sup> The NCS' response rate for Catholic parishes is indistinguishable between 14% and 20% (see footnote 9). We confirmed that the large changes in estimated means visible at the NCS 20% response rate in Figures 8-9 were not due to any data collection bias. At that threshold, the NCS Hispanic oversample cases were actually under-represented. Instead, the shift is due to a Hispanic parish response bias. Before the 14% response rate, 5% of cases were predominantly Hispanic (more than 50%); after the 20% response rate, 18% of cases were predominantly Hispanic. Between the 14% and 20% response rates, 67% of cases were predominantly Hispanic.

rate is crucial for some characteristics, as different types of parishes, especially ethnic parishes, responded later, changing the final mean estimates of some variables.

### *Hispanic Catholic Parishes*

The third component of the analysis focuses on Hispanic Catholic parishes. Figure 10 shows variables measured as percentages, or with average count values between 10 and 100. Our results in this section are conservative, as we were unable to access raw data to produce means tests. It is possible that more differences in variable estimates exist between samples than indicated by CIs.

Of the seventeen variables, eleven have overlapping CIs between the two surveys. The following six variables have different means and do not overlap in their CIs between the surveys: parish school, no Spanish service, percentage of Hispanic persons of Mexican descent, white composition, clergy born in the U.S., and white head clergy. Regarding parish leadership, the NSCPHM estimates that 65% of Hispanic parishes are led by white clergy, while the NCS estimates 42%. The NSCPHM estimates that 68% of clergy leading these parishes are born in the U.S., while the NCS estimates a much lower rate of 41% U.S.-born clergy. The surveys' measures of racial/ethnic composition show differences as well. The NSCPHM estimates that the average percent of non-Hispanic attending parishioners in these parishes is 43%, while the NCS estimates that the average percent of non-Hispanic white regular participants in these parishes is 27%. Hispanic head clergy have overlapping CIs, but notably different mean percentages, 22% for the NSCPHM compared to 40% for the NCS.

### INSERT FIGURE TEN HERE

The only identical measure of size—the total number of attendees on a weekend—has a range exceeding 100 and is not shown in the figures. For this variable, the CIs for the surveys' means and medians overlap. The CIs for the NCS are quite large (mean 95% CI is 925 to 3,668; median 95% CI is 5 to 2,494), easily overlapping those for the NSCPHM estimates. These large NCS CIs are likely due to the relatively small number of cases in the NCS analysis. Even so, the point estimates suggest that Hispanic Catholic parishes in the NCS, on average, have substantially

more weekend attendees than those surveyed by the NSCPHM (NCS median=1,250, NSCPHM median=1,000).

Overall, the data suggest that the parish samples created by the two different methods – hypernetwork and list-based sampling – vary in salient ways. The following figures address whether some of these differences are due to response rate, sampling design, or both.

As shown in Figure 11, the percentage of congregations with white clergy reported by both surveys at the NSCPHM’s final response rate of 13% is nearly identical (66%). However, immediately past that rate, additional responses to the NCS dramatically and permanently lowered its estimate of white clergy.<sup>24</sup> This suggests that the initial sample structures may have been similar, with Hispanic parishes led by white clergy responding early. An increased response rate might have shifted the NSCPHM white clergy estimate substantially lower, towards the NCS estimate. The NCS white clergy estimate stabilized at a still relatively low response rate, indicating that the NSCPHM may have needed only a slightly higher response rate to achieve more representative results.

INSERT FIGURE ELEVEN HERE

Figure 12 shows estimates for the percentage of Hispanic Catholic parishes led by U.S.-born clergy. The estimates of the surveys at the NSCPHM’s final response rate of 13% are similar. Additional survey responses altered the NCS estimates drastically and permanently. Although the NCS estimate stabilized at a relatively low response rate, the types of cases that responded after the NSCPHM’s final rate clearly influenced the NCS estimates. Again, this

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<sup>24</sup> The NCS’ response rate for Hispanic Catholic parishes is indistinguishable between 10% and 15%. We confirmed that the large change in estimated means visible after the NCS 15% response rate in Figure 11 was not due to any data collection bias. Below 10%, 69% of cases had white clergy, between the 10% and 15% response rates 7% of cases had white clergy, and after the 15% response rate, 49% of cases did.

evidence suggests some similarity in samples with a common pattern of early response bias among Hispanic parishes led by U.S.-born priests.

INSERT FIGURE TWELVE HERE

Figure 13, in contrast to the previous figures, shows some evidence for sample differences between the surveys. At the NSCPHM's final response rate, the surveys differ widely in their estimate of white composition (NCS=27%, NSCPHM=43%).<sup>25</sup> Majority-white Hispanic Catholic parishes were early responders to the NCS. We note that this stark difference between surveys quickly changed, as increased response rate in the NCS shifted the mean estimate downward, resolving at an estimate even lower than that of the NSCPHM.

INSERT FIGURE THIRTEEN HERE

The divergent sample structures at early response rates may indicate that the NCS Hispanic Catholic parish sample included a greater diversity of parishes. For example, our conceptualization included six NCS Hispanic Catholic parishes that did not have a Spanish-language service but did have a service that catered to Hispanic persons. We tested the possibility of different sample structures due to our measurement scheme by examining the same variables only among NCS cases that reported a Spanish worship service. For each variable, this reduced set of cases had identical means to our full set *or mean values that were even more different than the NSCPHM's mean values*. Not only did the sample construction process used by the NSCPHM, which relied on knowledge of non-local experts at the diocesan level, miss local variation that the NCS uncovered (e.g. Hispanic parishes without Spanish language masses), but its sample structure among Hispanic parishes with Spanish language services appears different.

In summary, the differences between the NCS and the NSCPHM appear to be due to both sampling strategies and response rate. The NCS sample reveals “whiter” Hispanic parishes at a low response rate, but fewer white Hispanic parishes overall at higher response rates. The NCS

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<sup>25</sup> Because the NCS' response rate is not identifiable at the NSCPHM's final response rate of 13%, we are conservative by presenting the NCS estimate from the next threshold (15%).



shows more leadership by foreign-born clergy among Hispanic parishes. As with Catholic parishes in general, white parishes led by white clergy tend to be early responders. The NCS's higher response rate helps to overcome this bias.

## DISCUSSION

Our comparison of surveys from different congregational populations shows some instances in which the estimates converged, and others in which they diverged. For each population of congregations (All religious traditions, Catholic parishes, and Hispanic Catholic parishes), differences between surveys could lead to notably different portrayals of the landscape of U.S. congregations. Below, we summarize some of these differences and reconsider how two components of data collection methods—sampling and response rate—may have led to them.

### *All Religious Traditions*

The comparison of national congregation studies that used hypernetwork sampling to generate samples suggests several conclusions. First, estimates for some congregational characteristics, such as providing services for immigrants and having a school, seem to be unaffected by any differences that may exist between the hypernetwork samples.

Second, as detailed in the results regarding congregation size, clergy characteristics, and political activities, surveys using the same sampling methodology can nonetheless have different sample structures which produce different estimates. It is unclear exactly how these differences emerged despite the surveys using the same underlying method. It is possible that the initial sampling frames of individuals, which hypernetwork sampling relies upon, were constructed differently. For example, the USLCS' underlying survey had a lower response rate than the GSS, on which the NCS is based. Also, the weights used to make the underlying survey representative appear to differ from those used by the GSS (Salomon and Dickin 2009).

Third, some congregational characteristics are affected by response rate, requiring higher item-specific rates to obtain reliable population estimates. Smaller and whiter congregations are overrepresented among early responders. In the NCS, population estimates for the number of regularly participating adults did not stabilize until a 27% response rate and clergy race

characteristics not until a 62% response rate. Attendance size is crucial for understanding congregational activity and clergy racial characteristics are crucial for understanding diversity within the congregational population. Thus, attending to response rates is especially important with these variables.

### *Catholic Parishes*

The comparison of Catholic parishes led to several specific conclusions. First, some parish characteristics, such as Black and Asian composition and the percentage of parishes with non-white head clergy, may be relatively unaffected by differences in sampling design and response rate. The values of these characteristics in the parish population may be distributed in such a way that they are not affected by sample design or nonresponse bias, and thus can be picked up by the divergent survey approaches analyzed here.

Second, list-based sampling (such as that of the EMPLP), when appropriately stratified by size, may be able to adjust for parish size differences, generating a sample that decreases undue influence of large parishes on population estimates (Zech et al. 2017). However, organizational size variation within the population can be still be missed by list-based sample design. For example, Figure 8 showed that the two surveys estimated a similar final mean of total weekend attendees. The EMPLP, however, appears to have underrepresented above-average and below-average sized parishes. In the NCS, both of these types of parishes appeared to be included, but they responded beyond the response rate at which the EMPLP survey stopped.

One concern with list-based sampling is that the stratification of list-based sampling relies on *a priori* knowledge of parish size. Recent research has questioned the accuracy of this pre-existing data for up-to-date parish existence (MacGregor 2018). Knowing more about how the survey lists were created when using the list-based sampling method would be beneficial for understanding whether and how parish samples are biased.

Finally, response rates have a noticeable effect on some item-specific estimates of Catholic parishes. Parishes with Hispanic or other multicultural characteristics were not early responders. This bias likely leads to lower estimates of the ethnic diversity of Catholic parishes.

Obtaining responses from such congregations requires more effort from researchers to increase response rate and thereby reduce the amount of nonresponse bias.

### *Hispanic Catholic Parishes*

The results of this study suggest several conclusions about surveying Hispanic Catholic parishes. First, achieving a large-enough sample size to capture nuanced characteristics of this population can be challenging. Many of the estimates of the measures we assessed had overlapping CIs despite notably different point estimates. For example, the two surveys' estimates of Hispanic composition had overlapping CIs, but the point estimates differed by about twenty percentage points. It is possible that if the NCS had a larger sample size, and thus narrower CIs, the surveys' CIs may not have overlapped. It is also possible that, if we had access to raw data, visually overlapping CIs might obscure statistically significant differences in means between samples.

Second, the reliance of surveys like the NSCPHM on specialized knowledge to identify Hispanic parishes from the known list of parishes can be problematic for constructing an accurate sampling frame. Figure 13 suggests that sample design differences are present between the NSCPHM and the NCS, leading the former to estimate overall “whiter” Hispanic Catholic parishes in terms of composition. This particular difference suggests that there may have been a bias in the types of parishes that were notified of the study and/or the types of parishes that responded early in data collection (i.e. those led by white, U.S.-born clergy). While Spanish language worship service is the dominant indicator of Hispanic parishes, a multiple measure conceptualization is needed to ensure coverage of diversity within the population. Particularly with longer-residing Hispanic populations in the U.S., it is important to not rely only on some prominent markers of ethnicity. Finally, item-specific response rates are again important as reflected by clergy characteristics and ethnic demographic data among these parishes.

### *Broader Implications*

The results of this study have implications for the sociology of religion data enterprise. Existing congregational studies use a variety of data collection methods. This variety can be

beneficial for two reasons. First, it allows for an analysis like this one to help determine the reliability and accuracy of the resulting estimates. Second, the variation also reveals that, at least for some congregational characteristics, different data collection methods can be effective. This finding is important because some data collection methods are more expensive and thus may be possible to collect information more affordably, depending on the scope of the study. For example, list-based sampling of known congregational populations, when taking account of intra-population differences in size, appears to be effective in producing a representative sample for some estimates of organizational characteristics such as mean number of worship services and staff in Catholic parishes. The awareness that different methods can work equally well may be beneficial for future researchers as they consider the balance between what they seek to know about congregations and the resources they have available to gain that knowledge.

However, scholars using different surveys will disagree on estimates for key characteristics of congregations. Such disagreements can lead to very different portrayals of the state of organized religion in the United States, a form of religion that is rapidly changing. For example, the congregational and parish populations probably have more size variation than some studies show. Congregations also have more racial/ethnic diversity in leadership and in the pews than some data indicate. In the case of Catholic parishes, the percentage of Hispanic and multicultural parishes is likely much larger than some researchers have argued. Based on worship service language criteria alone, Hispanic parishes likely comprise four out of ten (38%) Catholic parishes rather than the one out of four (23%) indicated by the NSCPHM. For any type of congregation, measures of race and ethnicity in particular require high item-specific response rates. However, depending on the congregational population and method, low survey-specific response rates may provide accurate estimates for some item measures.

Underlying differences in estimates due to differences in sample construction cannot be corrected solely by increasing response rates. For example, bias in the creation of a representative sample of U.S. adults used in the first step of creating a hypernetwork sample of organizations would lead to bias in the organizational sample it produces. Or, for example, using expert insider

knowledge to aid list-based sampling may lead to systematic bias based on differential congregational visibility that influences expert knowledge. Merely increasing the responding cases will not fix these problems.

### *Limitations*

Our analysis has a few limitations to keep in mind. First, there are several congregational characteristics we were unable to compare because the measures used in surveys differ too much to be comparable or do not exist across surveys. These characteristics include urban/rural location, technology usage, worship service components, social service levels, membership boundaries, and staff educational credentials. It is unclear whether estimates produced by the survey approaches we examined would differ on these characteristics. Second, there are aspects of surveys' protocols (e.g., recruitment materials, surveyor training) that are unavailable or unclear to researchers who were not part of those survey teams. Third, for two of our comparisons, we did not have access to raw data files. It is possible that if we had the raw data and were thus able to calculate confidence intervals, our comparisons might have shown fewer significant differences between survey estimates. However, we think it is more likely that a comparison of means enabled by raw data files would have revealed even more significant differences. Fourth, as we noted above, sub-samples created from the NCS are small in size. While these sub-samples are nationally representative, they have limits in the types of analyses that can be used.

### *Recommendations*

Our findings lead to some specific recommendations for social scientific research on congregations.

1. When using congregational data, researchers should note the known sampling-design-based and/or response-rate-based biases of the reviewed surveys. For congregational characteristics that have different estimates between surveys, care should be taken to understand the implication of those differences from specific research questions. A fundamental problem with congregational research, which spurred the introduction of hypernetwork sampling, is that there is no “benchmark” data to compare to (Ansolabehere and Schaffner 2014; Bilgen et al. 2019). Where

estimate differences between surveys exist, then, we advise that scholars report the NCS-based estimate because of its sampling method and higher response rate.

2. Survey datafiles should be publicly available at a digital warehouse like the ARDA, along with as much survey metadata as possible. If dataset case records included information about contact attempts required for completion and the relative order of completion, analysts could examine the effect of response rates and plan future data collection efforts. Metadata about *incomplete* cases could provide a clearer window into other nonresponse biases.

3. Researchers should aim for higher response rates in general, recognizing that nonresponse bias exists among congregations. With increasing racial diversity in and among congregations, such response bias may become more relevant to future research. Particularly when analyzing certain characteristics known to affect early response bias—like clergy race, clergy nativity, or member demographics—scholars should be aware of the high level of response rate needed to achieve representation, which may depend on the type of congregational population under study.

5. List-based sampling should include detailed information about the creation of the sample strata. This information would increase confidence in the quality of the data and might help researchers to build post-sample weights that account for strata-based response rate differences.

6. Hypernetwork sampling should include more easily accessible, detailed information about assumptions and decisions built into the first stage. For example, the NCS documentation does not discuss whether the GSS' usage of primary sampling units might influence the final congregational sample. One might wonder whether the geographical concentration of Mormons in the United States might lead to under-representation. It does not appear to be so according to the technical appendices of the GSS, but this information is not straightforward in NCS documentation. Possibly of more importance is the consideration of how congregational “membership” is measured for creating a hypernetwork sample. Currently, it is based on whether a respondent reported if they attended any worship service in the last year and their ability to provide identifying congregational information. Is this an indicator of membership that should be reconsidered? How reliable is the congregational nomination of persons who only attend once?

Hypernetwork surveys could easily provide variables that show how a final congregation sample differs by attendance level of nominating individuals.

6. Standardization of key measures across surveys would aid comparability for future analyses like this one. Such standardization could also increase the number of data points across time, providing a more up-to-date picture of the field of U.S. congregations. Alongside this standardization, researchers should consider building experimental procedures into research designs that could analyze how recruitment methods, calendar effects, and survey question order influence survey data quality.

7. A high-quality, national survey of congregations, such as the NCS, should be a continued priority of the field. However, there may be multiple ways to achieve this. Sociologists of religion may want to consider moving towards a model used by political scientists in projects such as the Cooperative Congressional Election Survey. In such projects, a core of standardized questions is continuously used, with teams from different universities or organizations introducing new modules over time (Ansolabehere and Rivers 2013). There are pragmatic reasons for considering this strategy. It would focus on a shared methodology supported by a wide range of scholars. It would spread out the funding, training, and data collection burden. It might help decrease the survey overload experienced by some congregations and nonprofit organizations. It allows for a greater diversity of topics to be researched. Additionally, it could help ensure continued data collection on congregations at a moment that the sociology of religion field is focusing less on “organized religion.”

## CONCLUSION

The past 25 years of congregation-focused research has provided a wealth of insight about how these organizations relate to American religious, political, and charitable life. We provided a comparison of surveys used to study different populations of congregations. Our findings suggest that differences in data collection methods appear to exist between surveys and result in real differences in their estimates of some key variables. For some congregational characteristics and populations, different sampling methods may produce these differences. Our analysis makes the

importance of response rate especially clear. Some types of congregations respond early, which can lead to bias in the estimates of surveys that conclude at a low response rate. Not all estimates differ between surveys, but those that do are vital to the understanding of key characteristics in the landscape of congregations. Going forward, we recommend better awareness of these key differences, better understanding of why they exist and the biases they generate, and pragmatic guidelines for overcoming them.



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**Table 1: Data Sources and Characteristics of Congregational Surveys**

<i>Survey Name (Abbreviation)</i>	<i>Year</i>	<i>Congregation Population</i>	<i>Sampling Method</i>	<i>Survey Mode</i>	<i>Maximum Contact Attempts</i>	<i>Completed Cases</i>	<i>Response Rate</i>
National Congregations Study (NCS)	2012 (Wave 3)	All; Catholic; Hispanic Catholic	Hypertext (Based off General Social Survey)	Phone & in-person	93	1331 (All); 350 (Catholic); 176 (Hispanic Catholic)	78%
U.S. Congregational Life Survey (USCLS)	2008/2009 (Wave 2)	All	Hypertext (Based off Harris Interactive poll)	Mail	Not reported	251	14%
(Clergy Profile)	2008/2009 (Wave 2)	All	Hypertext (Based off Harris Interactive poll)	Mail, phone, & internet	Not reported	692	39%
Emerging Models of Pastoral Leadership Project (EMPLP)	2010	Catholic	Stratified random sampling based off directory list	Mail & internet	3	846	15%
National Study of Catholic Parishes with Hispanic Ministry (NSCPHM)	2012/13	Hispanic Catholic	Stratified random sampling based off directory list, with expert input	Mail & internet	Not reported	572	13%

Figure 1

NCS and USCLS Point Estimates: Activities, Cong Age, Clergy  
 (NCS n=1331 , USCLS n=256 , USCLS Clergy n=692)

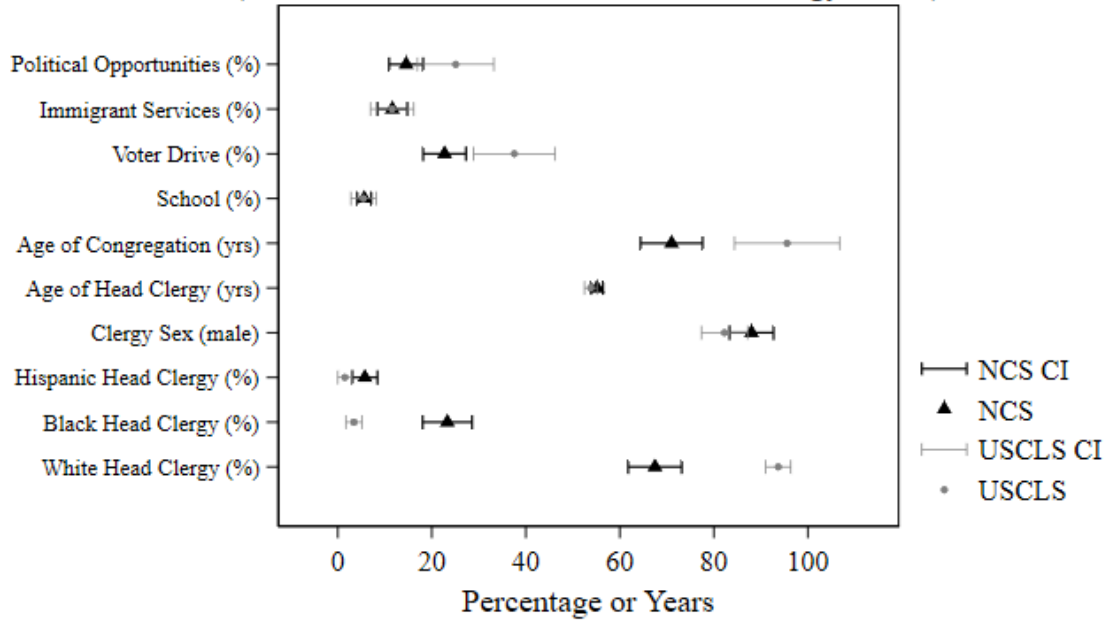


Figure 2

NCS and USCLS Point Estimates: Worship Services and Staff  
 (NCS n=1331 , USCLS n=256)

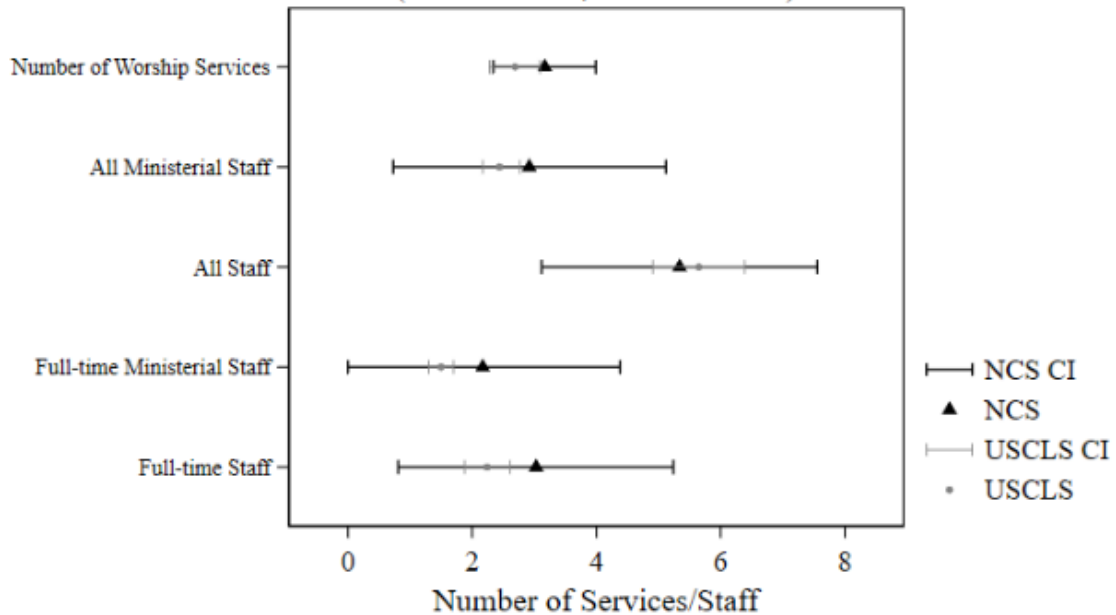




Figure 3

NCS and USCLS Point Estimates: Participation and Size  
(NCS n=1331 , USCLS n=256)

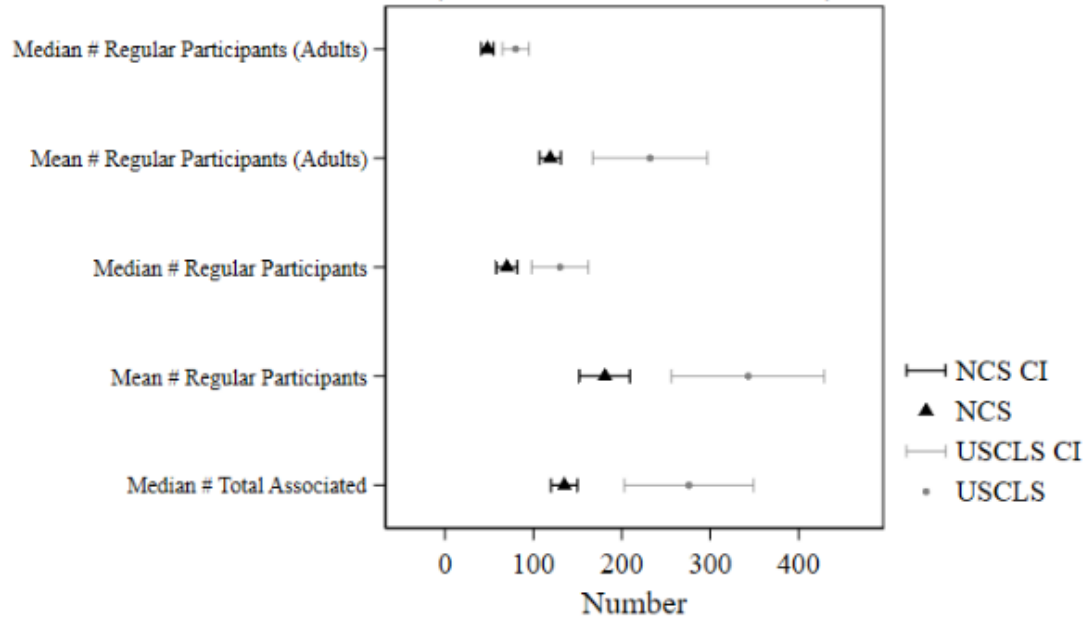


Figure 4: Number of Regular Adult Participants

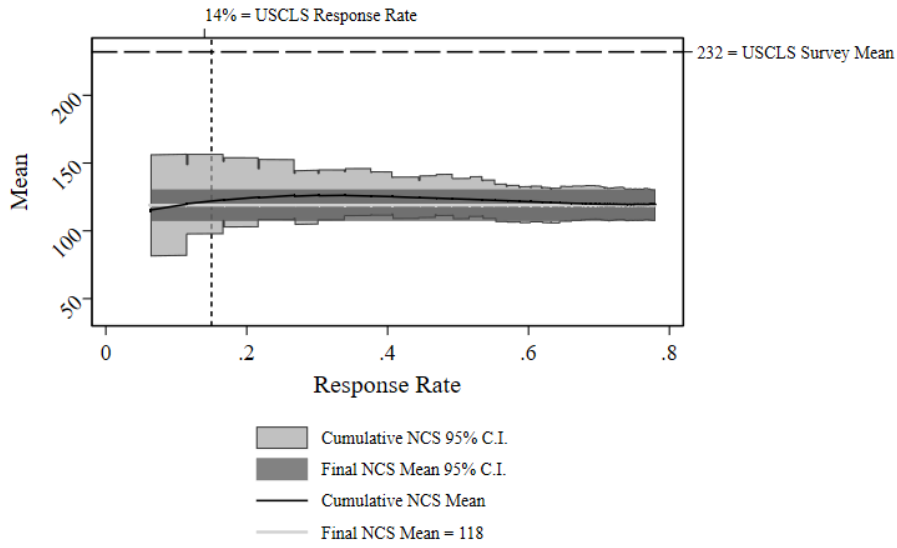


Figure 5: Percentage of White Clergy

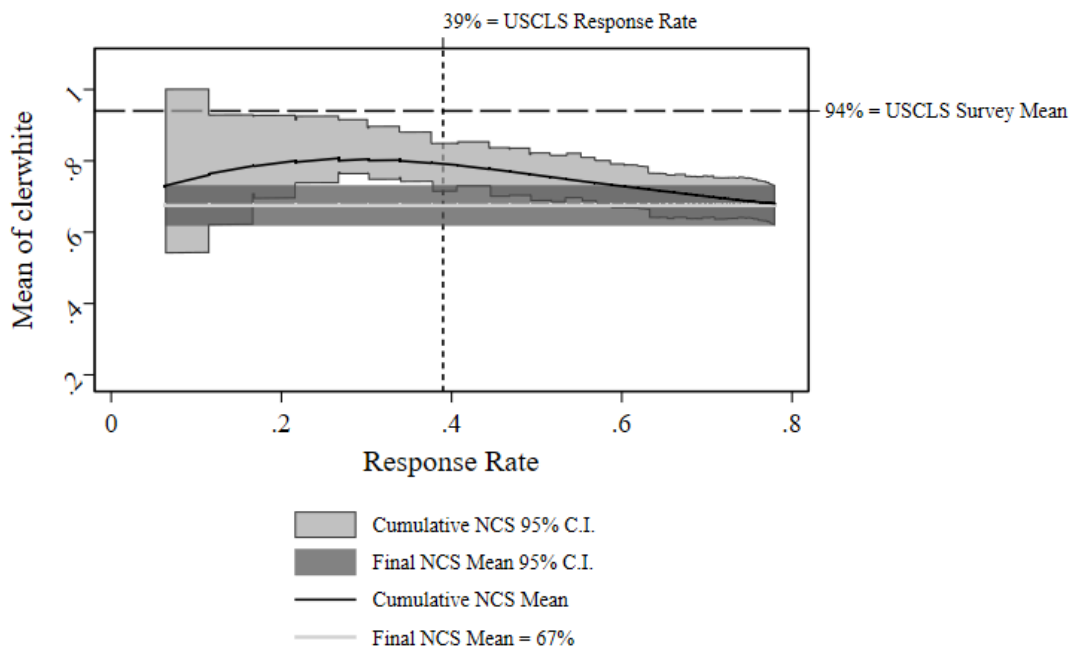


Figure 6

NCS and EMPLP Point Estimates: Activities, Members, Clergy  
(NCS n=350, EMPLP n=846)

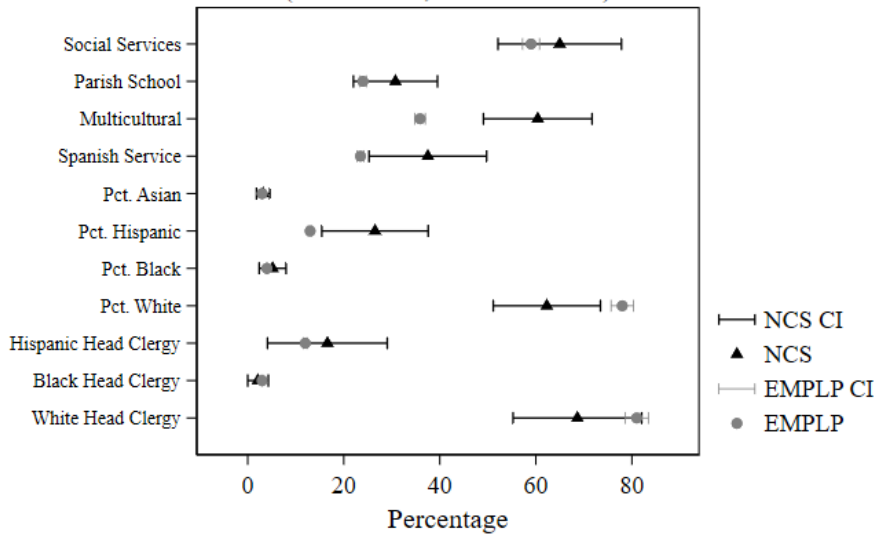


Figure 7

NCS and EMPLP Point Estimates: Worship Services and Staff  
(NCS n=350, EMPLP n=846)

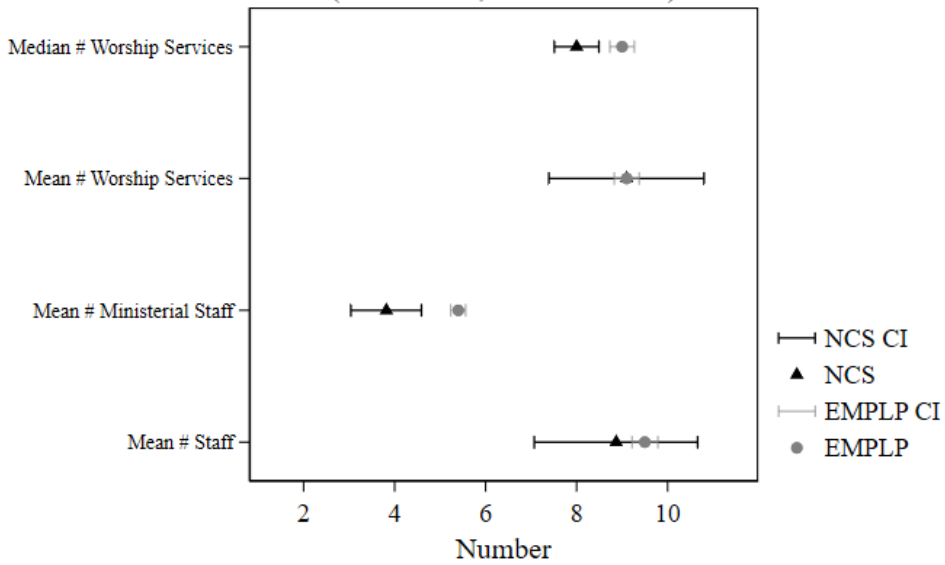


Figure 8: Number of Total Attendees

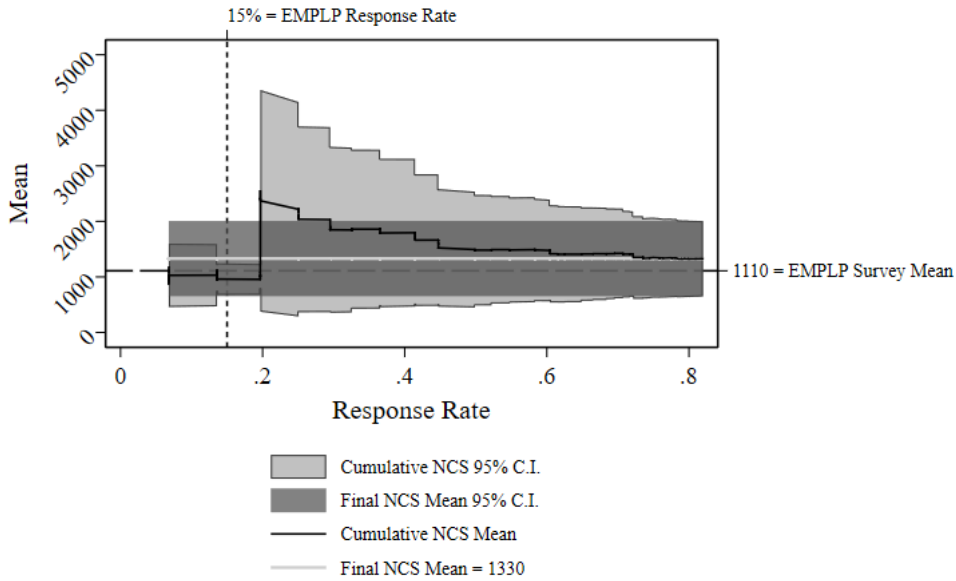


Figure 9: Hispanic Composition

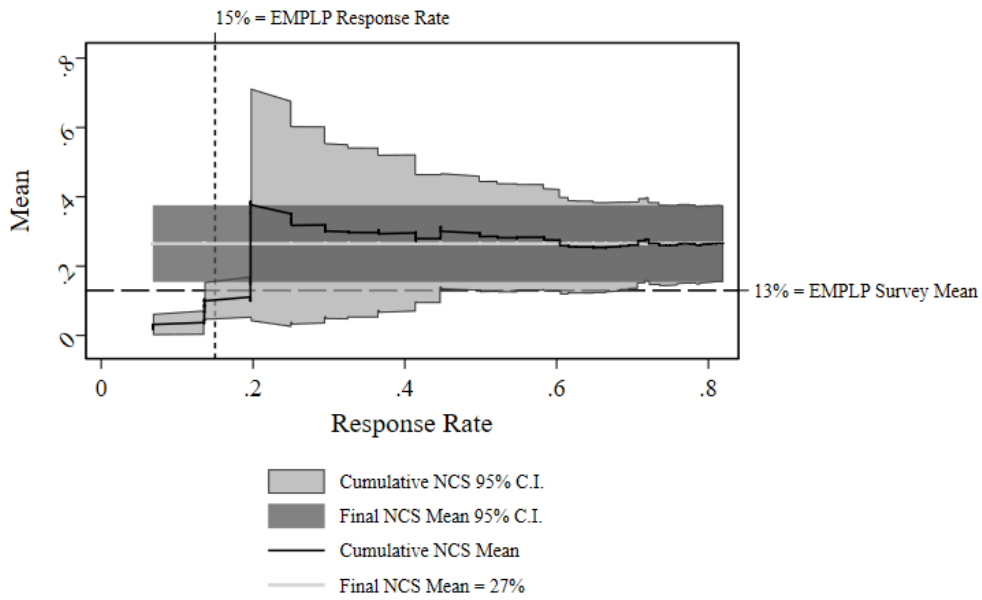


Figure 10

NCS and NSCPHM Point Estimates: Activities, Members, and Clergy  
 (NCS n=177, NSCPHM n=572)

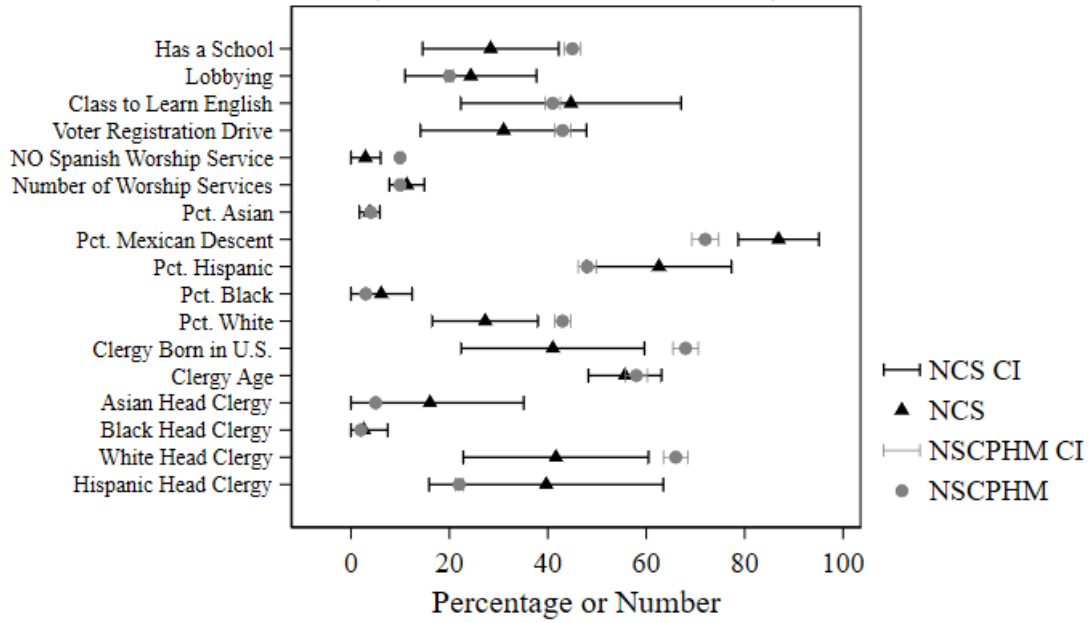


Figure 11: Percentage of White Clergy

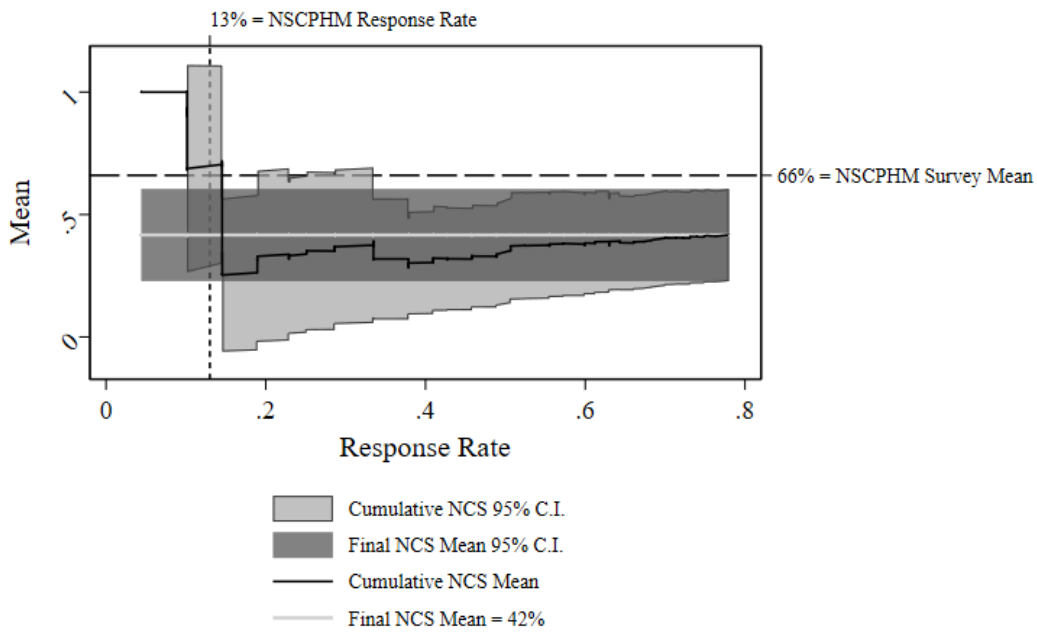


Figure 12: Percentage Clergy Born in the United States

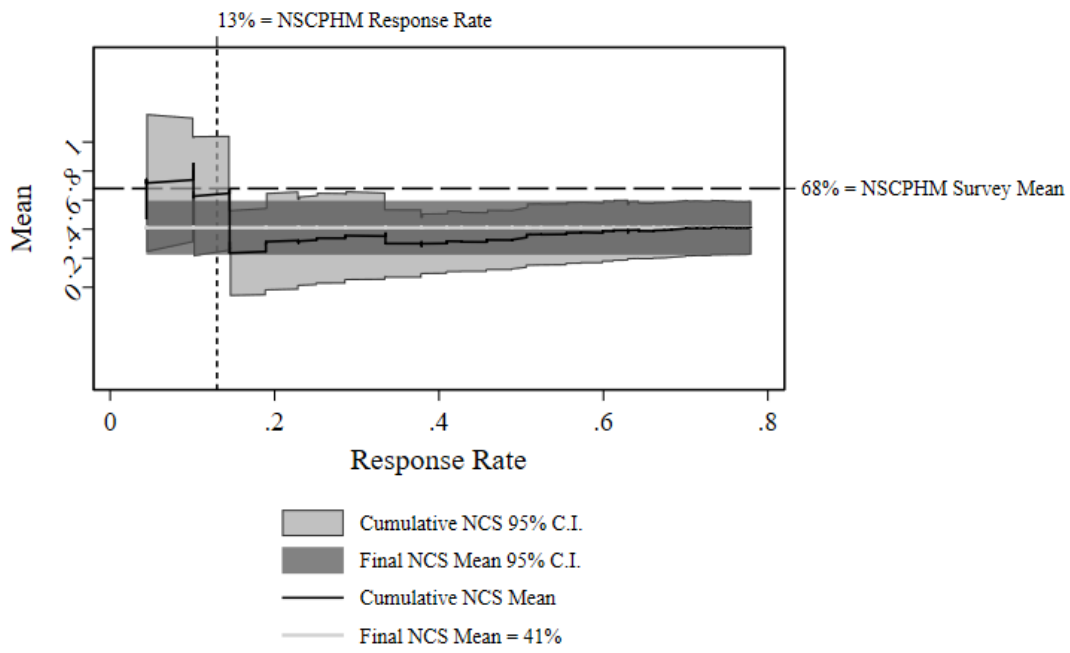
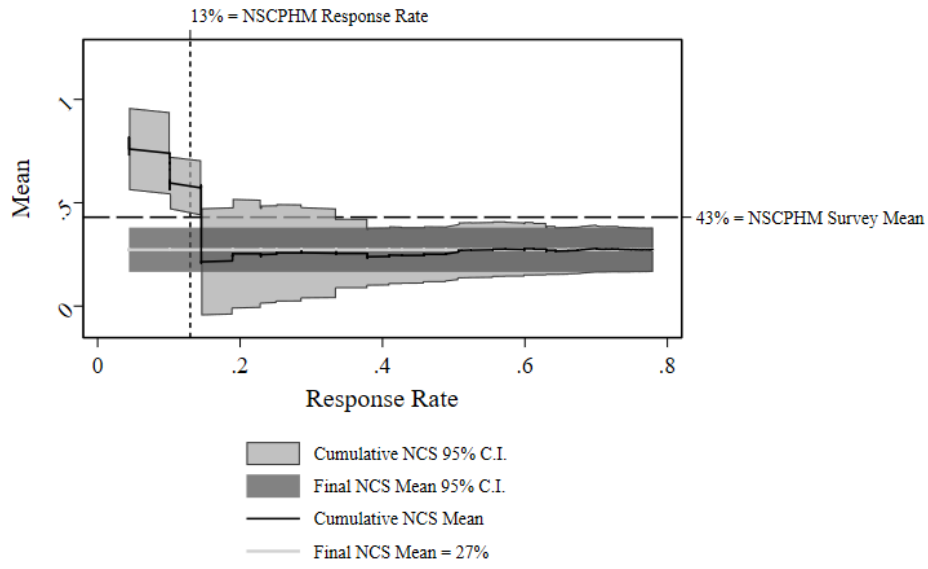


Figure 13: Percentage White Composition



**APPENDIX A1: Survey instrument questions and variable construction for comparison<sup>1</sup>**

<i>Variable</i>	<i>NCS</i>	<i>USCLS</i>	<i>EMPLP</i>
<i>Head clergy race</i>	"What race or ethnicity [are you/is this person]? White, Black or African American, Hispanic, Asian or Pacific Islander, Other	"What is your race or origin? (Check all that apply.)" Asian or Pacific Islander, Black or African American; Hispanic, Latino, or Spanish origin; Indian (American) or Alaska Native; White or Caucasian; Some other race	"Using the grid below, list the name of the pastor/priest administrator or PLC, all priests and deacons who assist in the parish on a regular basis, all paid parish (not school) staff, and all volunteers who work for the parish for at least 20 hours in a typical week. Exclude staff members who work only in the school. Moving horizontally across the grid, provide the information requested for each clergy or staff member." White, Black/African American/African, Asian/Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, Hispanic/Latino(a), Other
<i>Head clergy Hispanic ethnicity</i>	ABOVE + "[Are you/Is this person] Hispanic or Latino?"	ABOVE + "Would you describe yourself as Hispanic or Latino/a?"	ABOVE
<i>Clergy age</i>	"How old [are you/is this person]?"	"In what year were you born?"	
<i>Clergy gender</i>	"Is this person male or female?"	"Are you male or female?"	
<i>Congregation age</i>	"In what year was your congregation officially founded?"	"In what year was this congregation officially founded?"	"Year the parish was founded (erected as a parish)"
<i>Congregational school</i>	"Does your congregation have an elementary or high school?"	"Is there a pre-school, daycare, before or after school program, or elementary, middle, junior, or high school provided by this congregation? If yes, how many children are enrolled?" Yes, an elementary school + Yes, a junior, middle, and/or high school	"Does the parish have a parish school?"



**APPENDIX A1: Survey instrument questions and variable construction for comparison<sup>1</sup>**

<i>Variable</i>	<i>NCS</i>	<i>USCLS</i>	<i>EMPLP</i>
<i>Political opportunities</i>	"Within the past 12 months, have people at worship services been told of opportunities for political activity, including petition campaigns, lobbying, or demonstrating?"	"Within the past 12 months, have people at worship services in this congregation been told of opportunities . . . For political activity, including petition campaigns, lobbying, or demonstrating?"	
<i>Immigrant services</i>	"Within the past 12 months, have there been any groups or meetings or classes or events specifically focused on the following purposes or activities?" To offer services for immigrants, such as legal assistance, translation, or job placement? AND/OR A class for people in your congregation to learn English? AND/OR Social service program directed at immigrants, migrants, or refugees	"In the past 12 months, did your congregation provide any of the following services for this congregation's members or for people in the community? (Mark all that apply.)" Immigrant support activities (English as a second language, refugee support, interpreting service)	
<i>Voter registration</i>	"Within the past 12 months, have there been any groups or meetings or classes or events specifically focused on the following purposes or activities?" To get out the vote during an election? AND/OR An effort to get people registered to vote?	"In the past 12 months, did your congregation provide any of the following services for this congregation's members or for people in the community?" Voter registration or voter education AND/OR "Within the past 12 months, have people at worship services in this congregation been told of opportunities to..." Register to vote?	

**APPENDIX A1: Survey instrument questions and variable construction for comparison<sup>1</sup>**

<i>Variable</i>	<i>NCS</i>	<i>USCLS</i>	<i>EMPLP</i>
<i>Full-time staff</i>	"Including [you/the leader we've been talking about], how many people currently work in this congregation as full-time paid staff?"	"Including yourself (if paid staff), how many people are employed by this congregation either full-time or part-time? If you have a school, don't count school staff." Ordained professionals, full-time + Non-ordained pastoral leaders or other lay ministers, full-time + Other paid employees, full-time	"Using the grid below, list the name of the pastor/priest administrator or PLC, all priests and deacons who assist in the parish on a regular basis, all paid parish (not school) staff, and all volunteers who work for the parish for at least 20 hours in a typical week. Exclude staff members who work only in the school. Moving horizontally across the grid, provide the information requested for each clergy or staff member." Position, Number of hours worked at this parish in a typical week
<i>Ministerial full-time staff</i>	"Of the [NUMBER FROM FULL TIME STAFF] full-time paid staff people in this congregation, again including [you/the leader we've been talking about], how many would be considered ministerial or other religious staff, such as youth ministers, other pastors, pastoral counselors, directors of religious education, music ministers, and so on? Please do not count secretaries, janitors, school teachers, or other full-time employees not primarily engaged in religious work."	"Including yourself (if paid staff), how many people are employed by this congregation either full-time or part-time? If you have a school, don't count school staff." Ordained professionals, full-time + Non-ordained pastoral leaders or other lay ministers, full-time	ABOVE

**APPENDIX A1: Survey instrument questions and variable construction for comparison<sup>1</sup>**

<i>Variable</i>	<i>NCS</i>	<i>USCLS</i>	<i>EMPLP</i>
<i>All staff</i>	<p>"Including [you/the leader we've been talking about], how many people currently work in this congregation as full-time paid staff?"</p> <p>+</p> <p>"Including [you/the leader we've been talking about], how many people currently are part-time paid employees of this congregation, including people who receive regular fees for singing or other work?"</p>	<p>"Including yourself (if paid staff), how many people are employed by this congregation either full-time or part-time? If you have a school, don't count school staff."</p> <p>Ordained professionals, full-time</p> <p>+</p> <p>Non-ordained pastoral leaders or other lay ministers, full-time</p> <p>+</p> <p>Other paid employees, full-time</p> <p>+</p> <p>Ordained professionals, part-time</p> <p>+</p> <p>Non-ordained pastoral leaders or other lay ministers, part-time</p> <p>+</p> <p>Other paid employees, part-time</p>	ABOVE
<i>All ministerial staff</i>	<p>"Of the [NUMBER FROM FULL TIME STAFF] full-time paid staff people in this congregation, again including [you/the leader we've been talking about], how many would be considered ministerial or other religious staff, such as youth ministers, other pastors, pastoral counselors, directors of religious education, music ministers, and so on? Please do not count secretaries, janitors, school teachers, or other full-time employees not primarily engaged in religious work."</p> <p>+</p> <p>"Of the [NUMBER FROM PART TIME STAFF] ..."</p>	<p>"Including yourself (if paid staff), how many people are employed by this congregation either full-time or part-time? If you have a school, don't count school staff."</p> <p>Ordained professionals, full-time</p> <p>+</p> <p>Non-ordained pastoral leaders or other lay ministers, full-time</p> <p>+</p> <p>Ordained professionals, part-time</p> <p>+</p> <p>Non-ordained pastoral leaders or other lay ministers, part-time</p>	ABOVE

**APPENDIX A1: Survey instrument questions and variable construction for comparison<sup>1</sup>**

<i>Variable</i>	<i>NCS</i>	<i>USCLS</i>	<i>EMPLP</i>
<i>Number of worship services</i>	"In a typical week, how many worship services does your congregation hold?"	"In a typical week, how many worship services does this congregation hold?"	"Indicate the number of the following in the parish: Total number of Sunday/Saturday Vigil Masses each week" + "Total number of weekday Masses each week (Monday through Saturday morning)"
<i>Number of regular participants</i>	"How many persons – counting both adults and children – would you say regularly participate in the religious life of your congregation – whether or not they are officially members of your congregation?"	"How many people—counting both adults and children—regularly participate in the religious life of this congregation—whether or not they are officially members of this congregation?"	
<i>Number of regular adult participants</i>	"How many adults – people 18 years or older – would you say regularly participate in the religious life of your congregation?"	"How many people in the following age groups regularly participate in the activities of this congregation? Adults (19 years old and older)"	
<i>Number of associated people</i>	"How many persons would you say are associated in any way with the religious life of this congregation – counting both adults and children, counting both regular and irregular participants, counting both official or registered members and also participating nonmembers. What is the total number of persons associated with this congregation to any degree at all?"	"How many people are associated in any way with the religious life of this congregation—counting both adults and children, counting both regular and irregular participants, counting both official or registered members and also participating non-members? What is the total number of persons associated with this congregation to any degree at all?"	

**APPENDIX A1: Survey instrument questions and variable construction for comparison<sup>1</sup>**

<i>Variable</i>	<i>NCS</i>	<i>USCLS</i>	<i>EMPLP</i>
<i>Congregational racial composition</i>	"What percent of the regular adult participants in your congregation are white and nonhispanic? What percent are black or African- American? Hispanic or Latino? Asian or Pacific Islander? Any other ethnic groups?"		"Estimate the percentage of registered parishioners in each category (should sum to 100%): ___% (a) White ___% (b) Black, African American, or African ___% (c) Asian, Native Hawaiian, or other Pacific Islander ___% (d) American Indian or Alaska Native ___% (e) Hispanic or Latino(a) ___% (f) Other: _____"
<i>Spanish language worship service</i>	"In a typical week, does your congregation have a worship service in which the primary language is Spanish, or which is bilingual in Spanish and English?"		"List the language(s) other than English in which Masses are celebrated and the number of times per month for each language."
<i>Social services</i>	"Has your congregation participated in or supported social service, community development, or neighborhood organizing projects of any sort within the past 12 months? Please don't include projects that use or rent space in your building but have no other connection to your congregation." AND/OR "Within the past 12 months, has your congregation engaged in any human service projects, outreach ministries, or other activities intended to help people who are not members of your congregation?"		"Does the parish provide or offer the following ministries, programs, or services? Check all that apply. Youth ministry Young adult ministry Ministry to elderly/senior citizens Ministry to persons with disabilities Ministry to infirm or homebound Ministry to bereaved Ministry to divorced/separated Social services to meet individual needs Social action to educate or effect change Other: _____"

**APPENDIX A1: Survey instrument questions and variable construction for comparison<sup>1</sup>**

<i>Variable</i>	<i>NCS</i>	<i>USCLS</i>	<i>EMPLP</i>
<i>Hispanic parish</i>	<p>If parish met at least 1 of 3 criteria:                      Worship service in typical week that includes Spanish OR                      worship in typical week attended primarily by Hispanic persons                      AND/OR                      Percentage of Hispanic regular adult attenders <math>\geq 40\%</math></p>		<p>Used "available resources identifying Catholic communities with Hispanic ministry."</p>
<i>Multicultural parish</i>	<p>If parish met at least 1 of 3 criteria:                      Worship service in typical week that includes Spanish OR                      worship service that uses a different language than main English service                      AND/OR                      Percentage of non-Hispanic white regular adult attenders <math>&lt; 40\%</math>                      AND/OR                      Diversity index is 33% or higher</p>		<p>If parish met at least 1 of 3 criteria:                      Regular Mass in language other than English or Latin                      AND/OR                      Percentage of non-Hispanic white parishioners <math>&lt; 40\%</math>                      AND/OR                      Diversity index is 33% or higher</p>
<i>Number of total attendees</i>	<p>"What was the total attendance, including both adults and children, at all of the worship services that took place this past weekend, including services on Friday, Saturday, and Sunday?"</p>		<p>"Total number of persons (adults and children) attending Sunday/Saturday Vigil Masses on a typical weekend in October"</p>
<i>Clergy birthplace</i>	<p>"[Were you/Was this person] born in the United States?"</p>		
<i>Immigrant origins</i>	<p>"What is the country of origin of the largest specific immigrant group in your congregation?"</p>		

**APPENDIX A1: Survey instrument questions and variable construction for comparison<sup>1</sup>**

<i>Variable</i>	<i>NCS</i>	<i>USCLS</i>	<i>EMPLP</i>
<i>English class</i>	<p>"Within the past 12 months, have there been any groups or meetings or classes or events specifically focused on the following purposes or activities?"</p> <p>A class for people in your congregation to learn English?</p>		
<i>Lobbying</i>	<p>"Within the past 12 months, have there been any groups or meetings or classes or events specifically focused on the following purposes or activities?"</p> <p>To organize or participate in efforts to lobby elected officials of any sort?</p>		

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<sup>1</sup>*No survey instrument was publicly available for the NSCPHM*