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Surveying key informants is a common methodology in congregational research. While practical and cost-effective, there are limitations in the ability of a single informant to speak for an entire organization. This paper explores potential limitations empirically. Using the 1993 American Congregational Giving Study, we compare demographic descriptions provided by pastors to demographic information taken from random samples of members in the same congregations. Significant differences in congregational profiles appear along dimensions of gender, age, race/ethnicity and, most notably, education and income. The amount of discrepancy between pastor and member profiles varies by congregational factors such as denominational affiliation and employment status of pastor. We construct diversity measures using both pastor descriptions and surveys from samples of congregation members to demonstrate the impact of data type on conclusions drawn from empirical research. Difficulties notwithstanding, key informant methodology has a place in congregational research with appropriate precautions. Of course, the most complete view of congregations is one that combines perceptions from the pulpit with information directly from the pews.

A common measurement strategy in national surveys of congregations is to rely on a key informant to supply information about a congregation. Influential data collection projects such as From Belief to Commitment (1992), National Congregations Study (1998 and 2006), and Faith Communities Today (2001 and 2005) have been used as a basis of articles and books expanding the contemporary understanding of congregations, and all rely on key informant descriptions of congregational life.[1] In this article, we question how reliable the description of American congregations provided by a pastor, leader, or other lone informant is.

Key informant methodology is practical and works reasonably well for measuring congregational features such as year founded, instruments used in worship, number of services offered, number of members, and average weekly attendance. Yet, some observations are more prone to error. For example, what people believe about God and how they think of themselves religiously is hardly constant even in a single congregation (Dougherty et al. 2009). Perhaps basic demographic descriptions are less problematic. We examine this potential empirically. How closely do pastor/leader estimates of gender, age, race-ethnicity, education, and income match profiles from surveys of samples of congregation members? Do pastor-member discrepancies vary by number of attendees, congregation age, location, theological tradition, or pastor's employment status with the congregation? And, what impact does the use of key informant data as opposed to data from samples of congregants have on conclusions drawn about congregations? To answer, we compare congregation profiles based on survey data from nested samples of congregation members to congregation profiles based on estimates provided by a religious leader in the same congregations.

Key Informant Methodology

Key informant methodology is a useful strategy for studying organizations. It enables researchers to move beyond case studies without requiring data collections from a plurality of members in every sampled organization. A small number of knowledgeable individuals per organization in equivalent positions across organizations can provide reliable organizational data (Seidler 1974). In a study of 184 businesses in Columbus, Ohio, Parcel, Kaufman, and Jolly (1991) found that top executives actually provided more accurate descriptions of organizational characteristics than did employees. They concluded that "for most establishment data, the CEO is the most reliable informant" (p. 73). This seems to hold for voluntary organizations as well. McPherson and Rotolo (1995) contrasted three methods of data collection (individual respondent, official informant, and direct observation) in a probability sample of 128 voluntary organizations in Nebraska. All three methods produced comparable estimates of organization size, gender composition, age composition, and educational composition. Organizational leaders do better than group members at assessing less obvious characteristics such as education, suggested McPherson and Rotolo (1995).

While much organizational research relies on data provided by key informants, several issues complicate data collection from them. Survey response rates and reliability are lower for key informants across large, complex organizations (Gupta, Shaw, and Delery 2000; Mitchell 1994; Seidler 1974; Tomaskovic-Devey, Leiter, and Thompson 1994). Along with size, the age of the organization may play a role. In some cases, the quality of key informant data is better in younger organizations because small size and a short history mean that an informant is responsible for less information (Gupta et al. 2000). The role of the key informant is another important factor. Krannich and Humphrey (1986), for example, found that information on community growth varies among key informants with different leadership positions in the same community. There are also indications that longer tenure enhances an informant's ability to provide organizational information (Hughes and Preski 1997).

In addition to issues related to the organization and the key informant, the characteristics being measured influence the reliability of the data. Informants do best when asked concrete questions about publicly visible organizational or community characteristics (Huber and Power 1985; Krannich and Humphrey 1986; Poggie 1972; Young and Young 1961). Conversely, key informant data are less reliable when measuring characteristics that are less easily observable or more controversial.

With this background, we point out several possible pitfalls facing key informant research for religious congregations. First, large congregations might pose a challenge to informants. A clergy member may have a relatively good sense of what is happening in a congregation with 100, 200, or 300 attendees on the average Sunday. It is difficult to imagine even the most astute pastor knowing details about people and programs in a congregation with thousands or tens of thousands of attendees. We recognize that there may be exceptions. Some very large congregations, such as megachurches, may actively study their congregations, which would make key informants in these settings quite knowledgeable about their congregants. Second, the quality of key informant data might vary according to congregational longevity. Whether longevity hurts or helps informants in congregational research is hard to predict. Key informants in newer congregations have less organizational history to be familiar with, which in some cases improves data accuracy (Gupta et al. 2000). Alternatively, it is possible that older congregations have relatively stable memberships, which could make key informants'

estimates of congregation characteristics more reliable. Third, given variations in average size, age, and demographic distributions of members across denominations, we expect variation in the quality of key informant data across religious groups. Fourth, we anticipate that greater contact of pastors with congregation members is positively related to their capacity to respond as an informant. The presence of a full-time pastor should promote greater familiarity for a pastor about the congregation being served. Fifth, we expect pastors to provide more reliable estimates of observable characteristics (e.g. racial makeup of congregation) than of less physically visible characteristics (e.g. educational distribution in congregation).

Such researchers as Mark Chaves have gone to great lengths to appropriately use key informants for congregational research. The 1998 National Congregations Study, conducted under his direction, set a new benchmark for congregational research. His use of hyper-network sampling provided the first nationally representative survey of U.S. congregations. Outlined in an appendix of his 2004 book, *Congregations in America*, were his efforts to limit informant bias by avoiding questions on belief and mission/identity, and to focus as much as possible on directly observable aspects of congregations (2004:218-221). We commend his rigor. Still, we are left to wonder: Can a pastor speak adequately to even the basic demographic characteristics of a congregation? Limitations not withstanding, assessments of key informant methodology for other types of organizations are promising. Our contribution is to assess the methodology as applied to religious congregations.

If pastors and members describe basic features of congregational composition differently, implications for empirical research are profound. The perception of U.S. congregations as still largely segregated by race is a case in point. Using pastor estimates, prior research suggests that most religious congregations are racially homogeneous (Dougherty 2003; Dougherty and Huyser 2008; Emerson and Smith 2000; Emerson and Woo 2006). Findings from the 1998 National Congregations Study supply compelling statistics, such as the contention that "about 90 percent of American congregations are made up of at least 90 percent of people of the same race" (Emerson and Smith 2000:136) and fewer than one in ten U.S. congregations is multiracial—i.e. no single racial group represents more than 80% of the congregation (Emerson and Woo 2006). Congregations appear far more diverse by social class, according to key informant data (Dougherty 2003). Although other studies using different data collection methodologies generally support these findings of racial homogeneity and social class heterogeneity (e.g. Reimer 2007; Schwadel 2005), much of what we know about congregational composition depends heavily on key informants. Consequently, we compare diversity measures based on key informant data and data from samples of congregation members to demonstrate the influence of data type on congregational research.

Data

We employ data from the 1993 American Congregational Giving Study (ACGS) Congregational Profiles and Members' Questionnaires.[2] ACGS data are uniquely suited to this research since they contain both estimates of congregational demographics provided by the pastor or other key informant and surveys of a random sample of up to 30 congregation members in each of 625 congregations. This design allows us to compare estimates of congregational demographics based on pastors' assessments with demographic profiles drawn from samples of congregation members. The ACGS was administered in nine sampling clusters, one in each of the nine U.S. Census regions.[3]

Congregations were randomly sampled in their respective denominations, sampling clusters, and based on congregation size. Eighty-five per cent of the congregations originally contacted agreed to participate; similar churches replaced those congregations that refused to participate until meeting the sampling limit of 125 congregations in each of the five denominations (see Hoge et al. 1996 for more information on the ACGS). Multilevel research suggests that a sample of 20 or more members in each congregation is sufficient to estimate congregational characteristics, particularly with a large number of congregations (Snijders and Bosker 1999). After deleting congregations with fewer than 20 member respondents without missing data on the key variables, 242 congregations remain in the sample.[4] All analyses are weighted to adjust for the oversample of large congregations.

Primary variables are constructed from measures of the proportional gender, age, race, and social status distributions in each congregation, using both member surveys and pastor estimates. Pastors specified the percentage of members fitting a variety of demographic characteristics, creating pastor estimates. Aggregating members' survey responses within each congregation produces member survey profiles for each congregation. For instance, we compare the percentage of female member survey respondents with the pastor's estimate in each congregation to assess differences in gender distribution by data source. We measure age with the percentage of member respondents who are over 61 years old and the pastor's assessment of the percent over 60 years old. Regrettably, the age questions on the member surveys and congregational profiles do not match exactly. Percentages white, African American, and Latino measure race/ethnicity. We include measures of both income and education: percentages college graduates and family incomes below $20,000, between $20,000 and $49,999, between $50,000 and $99,999, and over $99,999. As we discuss below, these demographic distributions are used to construct measures of differences in congregational profiles between pastors' estimates and members' responses.

Based on the discussion above, we use several variables from the pastor survey as independent variables in multivariate regressions. Dummy variables account for the five denominations in the ACGS data—Assemblies of God, Southern Baptist Convention, Roman Catholic Church, Evangelical Lutheran Church in America, and the Presbyterian Church (USA). Pastor's estimate of average worship attendance on a typical weekend gauges attendance, which we use as a proxy for organization size. Due to the skewed distribution of the attendance variable, we use the square root of number of attendees in the models. Age of the congregations is measured with a variable for the number of years since each congregation was founded (the founding date subtracted from 1993). A dummy variable indicating the presence of a full-time pastor measures potential for contact between pastors and congregants. Ninety-one per cent of the congregations included in our analysis have a full-time pastor. We also include dummy variables for the nine Census regions and an urbanrural indicator to control for congregational location. The urban-rural variable is coded as follows: large city (at least 250,000 people), suburb of large city, medium city (50,000 to 249,999 people), suburb of medium city, small city (10,000 to 49,999 people), town (at least 2,500 people), and rural.

The final independent variable is the number of respondents sampled in each congregation. This variable controls for the possibility that pastor and member profiles are more similar when more members are surveyed, which would indicate a potential weakness of member data. Conversely, if increases in number of members sampled do not lead to greater agreement between pastor and member profiles, then it is likely that member data provide a relatively valid profile of congregational characteristics. It is im-

portant to note, however, that we cannot definitively determine the accuracy of either pastor estimates or samples of members. Both are prone to measurement error. Without a census of congregation members, we have no way to verify the actual composition of a congregation. Consequently, our analysis concentrates on the consistency of findings across the two data sources. Significant differences between pastor estimates and member surveys indicate that the depiction of congregations depends on who is giving the description, even if we cannot conclusively say which method is most reliable.

Analytical Technique

The analysis is presented in three sections. Using both the member surveys and pastors' estimates, we begin by reporting the mean percentage of congregants in each of the demographic categories, as well as the mean difference and mean of the absolute values (magnitudes) of the difference between pastors' estimates and member surveys. Mean differences reveal the average direction of divergence between pastors' estimates and profiles from members' surveys. For instance, do pastors tend to estimate more, less, or the same proportion college graduates as profiles based on member surveys? The mean of the absolute values of these differences demonstrates the degree to which pastors' estimates of the makeup of their congregations differ from profiles based on member surveys.

The second results section presents Poisson regressions of the absolute value of the difference between pastors' estimates and member surveys for selected demographic characteristics. The distributions of the absolute value of differences between pastor and member profiles do not fit the normality assumptions of Ordinary Least Squares regression (OLS). Unlike OLS, Poisson models adjust for non-normally distributed dependent count variables (Frome, Kutner, and Beauchamp 1973). These models establish the relative influence of various congregational factors on the difference between pastor estimates and profiles based on member surveys for percentages female, 60 years or older, white, African American, Latino, college graduates, and family incomes below $20,000.

The final results section examines congregational diversity using both types of data, providing an example of how the use of key informants' estimates of congregational characteristics as opposed to surveys of congregants affects empirical research. Measurement of diversity relies on a variation of the entropy index, used previously in congregational research (Dougherty 2003; Dougherty and Huyser 2008; Schwadel 2005). We compute the Standardized Theil's Entropy Index to measure diversity in income and race. Theil's Entropy Index gauges the evenness of the distribution of a characteristic such as race or income (Deutsch and Silber 1995; Reardon and Firebaugh 2002). The index equals zero when there is no diversity (i.e. congregation members are all the same race or they all have similar incomes). Conversely, the index reaches a maximum value of one when there is full diversity or an even distribution among groups (i.e. equal number of people from each race or income category in the congregation). Given the unequal distribution of races and incomes in the population, few congregations should approach the maximum value of one on the index. Our goal, however, is not to assess the level of diversity in congregations, but rather to compare the estimated level of diversity using profiles based on pastors' estimates and surveys of congregation members. The Standardized Theil's Entropy Index is derived as follows:[5]

$$T = \sum_{M=1}^{M} \pi_m \ln \left| \left(\frac{1}{\pi_m} \right) \right| / \ln n$$

where π_m is the proportion in group m, such as the proportion African American in the congregation or the proportion with family incomes below $20,000. When creating entropy indices, the remaining race categories (other than white, African American, and Latino) are combined into one category. For the congregational profiles, Asian, Native American, and other race comprise the fourth category. For the members' survey, Asian/Pacific Islander, Native American, and biracial/bicultural comprise the fourth category.

Results

Mean Differences

   Does a congregation look different when measured from the pulpit rather than the pews? It seems to. Table 1 compares demographic percentages provided by pastors versus congregants. Statistically significant differences appear in eight of the ten categories. Pastors provide lower estimates than do member surveys for percentages white, percentages earning $50,000-$99,000, earning $100,000 or more, percentages female, and 60 years or older in their congregations. Pastors' estimates are higher than are member surveys for percentages African American, Latino, and percentages earning $20,000-$49,999. The two characteristics for which pastors and members most closely agree are percentages low earners (less than $20,000) and college graduates. If member data are accurate, congregations tend to have more high-income members, more female members, more older members, and more white members than pastors estimate.

   The contrast between pastor and members becomes even more dramatic when we take the absolute value of percentage differences. Absolute values allow us to summarize the degree of difference between profiles based on pastors' estimates and member surveys, regardless of the direction of the difference. The fourth column of Table 1 reports these values. Absolute value differences are statistically significant for every demographic variable considered. Even for percentage earning under $20,000 and percentage college graduates, where mean percentages for pastor estimates and member surveys are closest, considerable numeric discrepancies surface. Additionally, absolute values permit us to identify which demographic characteristics are most subject to reporting inconsistencies between pastor and members. Social class variables of income and education stand out. Low to mid-range income levels as well as college graduates prove particularly challenging for measurement. Reported in the final column of Table 1, about one-quarter of all sampled congregations have pastor-member mismatches of over 20 percentage points in regard to percentages college graduates, members earning under $20,000, and members earning $50,000-$99,999. Over 40% of congregations have such a discrepancy in reporting for percentages earning $20,000-$49,999. Estimates based on pastor and member data for gender and age composition are closer, but still more than 15% of congregations have pastor-member inconsistencies of over 20 percentage points. Estimates most closely match for race. Absolute values of pastor-member differences for percentages white, African American, and Latino are less than one-third those for age, gender, education, and most income categories.

Multivariate Regressions

   Next we explore factors that influence differences in congregational profiles based on pastor estimates and member surveys. Table 2 presents results from Poisson regres-

Table 1. Differences in Congregational Demographics between Pastor Estimates and Surveys of Congregation Members, ACGS

	Pastor	Members	Pastor-Member Difference[a]	Absolute Value of Difference[b]	Difference of 20+ Percentage Points
Percent Female					17.3%
Mean / SD	57.17 / 5.60	61.74 / 11.94	-4.57 / 13.49***	11.15 / 8.85***	
Low / High	37 / 76	16 / 90	-48 / 54	0 / 54	
Percent 60 or Older[c]					15.4%
Mean / SD	33.74 / 15.41	38.74 / 17.33	-4.99 / 12.69***	10.71 / 8.42***	
Low / High	0 / 70	0 / 90	-43 / 46	0 / 46	
Percent White					3.1%
Mean / SD	93.99 / 15.46	95.52 / 14.70	-1.53 / 5.67***	3.13 / 4.97***	
Low / High	0 / 99	0 / 100	-36 / 12	0 / 36	
Percent African American					0.0%
Mean / SD	2.25 / 10.74	1.87 / 10.43	0.38 / 2.32*	0.87 / 2.18***	
Low / High	0 / 99	0 / 100	-13 / 13	0 / 13	
Percent Latino					1.2%
Mean / SD	1.46 / 5.34	0.80 / 3.69	0.66 / 3.81**	0.99 / 3.73***	
Low / High	0 / 95	0 / 35	-7 / 36	0 / 36	
Percent College Graduate					25.1%
Mean / SD	36.10 / 23.03	36.26 / 20.14	-0.15 / 17.47	13.40 / 11.17***	
Low / High	0 / 95	0 / 87	-43 / 54	0 / 54	
Percent < $20,000					22.6%
Mean / SD	21.94 / 18.68	23.84 / 15.58	-1.91 / 17.40	13.56 / 11.04***	
Low / High	0 / 80	0 / 75	-40 / 66	0 / 66	
Percent $20,000-$49,999					44.1%
Mean / SD	55.47 / 19.26	45.80 / 12.19	9.66 / 20.79***	19.08 / 12.66***	
Low / High	0 / 98	17 / 82	-56 / 60	0 / 60	
Percent $50,000-$99,999					25.1%
Mean / SD	19.16 / 15.90	25.90 / 14.76	-6.75 / 16.47***	13.83 / 11.16***	
Low / High	0 / 74	0 / 60	-50 / 51	0 / 51	
Percent $100,000 or More					2.1%
Mean / SD	2.24 / 3.43	4.56 / 6.16	-2.33 / 5.95***	3.90 / 5.05***	
Low / High	0 / 25	0 / 33	-22 / 25	0 / 25	

Note: *N* = 242 congregations.
a: Significance tests based on paired-sample t-tests.
b: Significance tests based on one-sample t-tests.
c: 61 or older on member surveys.
† $p \leq 0.1$ * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ (two-tailed test)

sions of the absolute value of differences between pastor estimates and member surveys on select demographics. To begin with, there is considerable denominational variation in pastor-member differences in congregational profiles. Catholic parishes have high levels of pastor-member disagreement when it comes to age distributions, race distributions, and the percentages with low incomes, though there are higher than

Table 2. Poisson Regressions of Absolute Value of Difference between Pastor Estimates and Congregation Member Surveys, ACGS

	Percent Female	Percent 60 or Older[a]	Percent White	Percent African American	Percent Latino	Percent College Graduate	Percent w/Income < $20,000
DENOMINATION[b]							
Assemblies of God	0.312**	-0.320**	-0.421*	-1.136**	-0.318	0.131	-0.200*
	(0.109)	(0.103)	(0.179)	(0.386)	(0.319)	(0.097)	(0.094)
Southern Baptist	0.380***	-0.123	-0.743***	-1.366***	-1.382***	0.110	-0.204*
	(0.109)	(0.096)	(0.180)	(0.385)	(0.347)	(0.093)	(0.092)
ELCA	0.432***	-0.427***	-0.977***	-1.190***	-2.178***	0.011	-0.335***
	(0.093)	(0.084)	(0.158)	(0.354)	(0.334)	(0.083)	(0.077)
Presbyterian (USA)	0.357***	-0.434***	-1.497***	-2.207***	-2.802***	0.252**	-0.370***
	(0.098)	(0.088)	(0.168)	(0.377)	(0.355)	(0.085)	(0.082)
CONGREGATION							
Avg. Attendance (sqrt)	0.004	0.009***	-0.020***	-0.048***	-0.008	0.007**	-0.010***
	(0.003)	(0.003)	(0.005)	(0.011)	(0.007)	(0.003)	(0.003)
Congregation Age	-0.001*	0.002***	0.004***	-0.001	0.006*	-0.001**	0.002***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.003)	(0.001)	(0.000)
Full-Time Pastor	-0.266***	-0.122†	-0.357**	-0.053	-0.619†	0.226***	-0.032
	(0.060)	(0.069)	(0.132)	(0.252)	(0.363)	(0.068)	(0.059)
Urban-Rural	0.057***	-0.025*	-0.161***	-0.431***	0.043	0.041***	0.006
	(0.012)	(0.011)	(0.022)	(0.047)	(0.051)	(0.010)	(0.010)
Number Sampled	-0.042***	0.001	0.007	-0.024	0.143**	0.032***	-0.064***
	(0.010)	(0.010)	(0.019)	(0.037)	(0.037)	(0.008)	(0.009)
REGION[c]							
New England	0.100	-0.706**	0.378	-1.594	-0.055	-0.245†	0.719***
	(0.175)	(0.173)	(0.251)	(1.120)	(0.530)	(0.143)	(0.112)
Mid-Atlantic	0.288***	0.046	-0.098	-0.601†	-0.924	-0.339***	0.048
	(0.076)	(0.081)	(0.186)	(0.335)	(0.682)	(0.078)	(0.076)
East North Central	-0.117†	0.035	0.131	-0.051	0.733†	-0.196***	0.250***
	(0.071)	(0.070)	(0.157)	(0.277)	(0.378)	(0.061)	(0.062)
West North Central	0.123†	-0.014	0.017	-0.181	-1.176*	-0.239***	0.216***
	(0.071)	(0.073)	(0.155)	(0.266)	(0.530)	(0.066)	(0.065)
East South Central	0.145	0.129	-0.046	-0.234	0.236	-0.281**	-0.047
	(0.110)	(0.107)	(0.245)	(0.418)	(0.576)	(0.107)	(0.106)
West South Central	0.302***	-0.350***	0.507**	-1.552***	0.789†	-0.018	-0.098
	(0.087)	(0.102)	(0.173)	(0.466)	(0.436)	(0.078)	(0.089)
Rocky Mountain	-0.591***	-0.100	1.088***	-0.554	2.937***	-0.510***	0.145
	(0.126)	(0.101)	(0.163)	(0.402)	(0.330)	(0.100)	(0.091)
Pacific	0.109	-0.212*	1.257***	0.576*	3.232***	0.173*	-0.175†
	(0.099)	(0.102)	(0.155)	(0.262)	(0.348)	(0.080)	(0.103)
Intercept	2.963	2.583	2.436	4.169	-3.333	1.469	4.161
Likelihood Ratio Chi-Sq.[d]	214.80***	192.31***	362.99***	244.92***	535.39***	161.21***	222.54***

Note: standard errors in parentheses. $N = 235$ congregations.
a: 61 or older on member surveys.
b: Catholic reference.
c: South Atlantic reference.
d: 17 degrees of freedom.
† $p \leq 0.1$ * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ (two-tailed test)

average levels of agreement on the percentages female in Catholic parishes. On the other hand, there are particularly high levels of pastor-member agreement on age distributions, race distributions, and the percentage with low incomes in the two mainline Protestant denominations—Evangelical Lutheran Church in America and Presbyterian Church (USA).

Other than denominational affiliation, most of the independent variables have mixed effects across the models. Average attendance, for example, has a positive effect on differences between pastor and member profiles for age and college education but a negative effect on pastor-member differences for percentages white, African American, and family incomes below $20,000. The effect of congregation age is also mixed: congregation age has a positive effect on pastor and member profile differences for percentages over 60, white, Latino, and incomes below $20,000 while the effect of congregation age is negative for percentages female and college graduate. The effect of city size also varies across models. The more rural the church, the greater the disparity between pastor and member profiles of percentages female and college graduate. The more urban the church, the greater the disparity in profiles of age and race. Similarly, the region dummy variables are erratic across models, suggesting there is no clear geographic pattern to pastor-member profile differences.

The varied effect of number of members sampled supports the validity of the member data. As with most other variables in the models, the number of members sampled does not have a clear effect across the models. Number sampled has a significant, negative effect in two models (percentages female and incomes below $20,000) and a significant, positive effect in two models (percentages Latino and college graduate). Since individual church members are likely aware of their own races, incomes, educations, ages, and genders, the central question to the validity of the use of samples of congregation members is the accuracy of the samples. If sample size meaningfully influences the accuracy of member profiles, the number sampled variable would have a negative effect across the models, which it does not. Thus, it is likely that member data provide relatively accurate congregational profiles.[6]

Unlike most of the other independent variables, the effect of full-time pastor is in the same direction in most of the models (when significant). Although the presence of a full-time pastor has a positive effect on pastor-member differences for the percentage college graduates, it has a significant, negative effect on pastor-member differences for percentages female, over 60, white, and Latino. If the profiles based on member data are accurate, the negative effect of full-time pastor in four of the models suggests that key informant profiles for congregations lacking a full-time pastor may be less accurate.

Congregational Diversity

In this final results section, we compare diversity measures using pastor data and member data. Table 3 reports the mean of the Standardized Theil's Entropy Index across congregations for race and income using both pastor estimates and member surveys. Both methods confirm that congregations are more diverse by income than by race. The precise amount of diversity, however, is different depending on whom researchers gather data from.

Pastors tend to estimate more racial diversity but less income diversity than the member surveys suggest. On average, the entropy index for race based on pastor surveys is 0.03 higher than the index based on member surveys; and the index for income using pastor surveys is 0.12 lower than the index using member surveys. The absolute values of pastor-member differences reveal considerable disparity between pastor and member data. The mean absolute value of the difference between pastor estimates and member surveys for racial diversity is 0.07. In more than one-fifth of congregations, the entropy index for race based on pastor and member surveys is at least 0.1 apart. The differences for income diversity are even larger. In one-third of the congregations,

Table 3. Differences between Congregational Diversity Measures (Standardized Theil's Entropy Index) based on Pastor Estimates and Surveys of Congregation Members, ACGS

	Pastor	Members	Pastor-Member Difference[a]	Absolute Value of Difference[b]	Difference of: 0.1 or More	0.2 or More
Racial Diversity					22.6%	7.8%
Mean / SD	0.10 / 0.16	0.07 / 0.14	-0.03 / 0.11***	0.07 / 0.09***		
Low / High	0.01 / 0.96	0 / 0.94	-0.21 / 0.51	0 / 0.51		
Income Diversity					62.1%	33.5%
Mean / SD	0.62 / 0.17	0.74 / 0.12	0.12 / 0.19***	0.17 / 0.15***		
Low / High	0 / 0.99	0.42 / 0.97	-0.95 / 0.29	0 / 0.95		

Note: N = 242 congregations.
a: Significance tests based on paired-sample t-tests.
b: Significance tests based on one-sample t-tests.
† $p \leq 0.1$ * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ (two-tailed test)

the difference in the income entropy index using pastor and member surveys is 0.2 or more. Overall, these results demonstrate that empirical research, particularly research on diversity in congregations, is greatly affected by the use of key informant data versus surveys of samples of congregation members.

Discussion and Conclusions

   In sum, ACGS data demonstrate that pastors' estimates of the demographic make-up of their congregations differ from profiles based on samples of congregation members. These differences are greatest for less physically apparent characteristics, such as income and education. Pastors' estimates of more physically apparent features of their congregants, such as race, are more in agreement with profiles based on samples of members. Denomination and the presence of a full-time pastor have the clearest effects on mismatches between pastor estimates and profiles from congregation members. Catholic priests seem to have the hardest time estimating the race and age distributions of their churches while pastors in mainline Protestant churches appear more adept at estimating these member characteristics. Diversity within Catholic parishes provides a logical explanation. Calculating entropy indices for race and age from the 1998 National Congregations Study, Catholic parishes appear more heterogeneous along both dimensions than do Protestant congregations from mainline, Evangelical, or African American church traditions.[7] The minister of an all-white Mennonite church would have little difficulty reporting racial percentages on a survey. A Catholic priest serving a multiethnic parish faces a much tougher task in estimating racial composition. Also complicating key informant data in Catholic parishes is congregational size. Catholic parishes in the ACGS sample have both membership and attendance figures that are more than seven times larger than any of the Protestant denominations, on average. Prior research documents the challenges large organizations pose for key informant reporting. Hence, the relative homogeneity and smaller size of Protestant congregations likely aid key informant data quality, at least on select demographic items.
   We can expect data quality to differ across religious groups for another reason as well. It relates to the employment status of religious leaders. Not surprisingly, pastor estimates more closely resemble profiles from surveys of congregants when the pastor works full time in the congregation. Looking again at the 1998 National Congrega-

tions Study, more than one-third of Evangelical Protestant and African American Protestant congregations operate without any full-time paid staff. Nearly three-fourths of non-Christian congregations have no paid full-time staff. Given these variations in the presence of full-time staff, the above results suggest that it is harder to get reliable data from key informants in sectarian or non-Christian congregations.

Finally, our analysis demonstrates how the use of pastor data as opposed to surveys of congregants can influence the results of empirical research. Comparison of diversity measures suggests that previous research using key informants' estimates may have overestimated the level of racial diversity in congregations. Religious congregations might be even more racially homogeneous than previous research suggests. They are, however, certainly not homogeneous by social class. In regards to income, congregations may be more heterogeneous than reported by pastors.

This analysis not only calls into question the ability of key informants to provide information about certain demographic characteristics of their congregations, but also their capacity to provide less objective information on surveys. If pastors are often considerably mistaken about the proportion of their congregations that are of a certain gender, age, or social status, how can they be expected to provide credible information on subjective measures of belief, commitment, satisfaction, etc? Our findings support conclusions drawn from methodological research in other organizational fields that key informants do best when reporting on readily observable attributes (Huber and Power 1985; Krannich and Humphrey 1986; Poggie 1972; Young and Young 1961). Yet, there are even considerable differences between pastor and member profiles for some observable characteristics, such as gender. With men being underrepresented in most congregations, it is possible that pastors' perceptions are conditioned by their interest in having more men attend services or by their greater likelihood of noticing the presence of men. Similarly, the relatively high level of discrepancy between pastors and member profiles on race in Catholic parishes may be due to the value placed on racial and ethnic diversity in the contemporary U.S. Catholic Church, in addition to the size of Catholic parishes.

Perhaps we are expecting too much from pastors. The results show that mean differences between pastor estimates and member surveys are often not very large, even though the means of the absolute values of these differences are large. Samples of pastors appear to provide relatively good estimates of the *average* social status or race of congregation members. Hence, if we want to know the mean income of congregants in a specific denomination, a sample of pastors from churches in that denomination should provide reliable data. It is in trying to pinpoint specifics that congregational research with key informants becomes more problematic. Should we expect a religious leader to know exact percentages of persons of Latino descent or persons earning $20,000-$49,999 per year? The sheer level of detail requested invites measurement error. One solution is to have pastors report compositional characteristics in approximate ranges rather than precise percentages. Response options might include 0-24%, 25-49%, 50-74%, and 75-100%. There is good reason to believe that broadening response options might improve data quality from key informants. In our findings, most congregations had pastor-member reporting differences of far less than twenty percentage points, suggesting that key informants provide reliable estimates of approximate membership portions belonging to various demographic categories.

Although ACGS data are uniquely suited to this research, there are several limitations to these data. Most importantly, we reiterate that we have no way to settle which methodology yields the most accurate congregational data. The erratic effect of num-

ber of members sampled in the regression analysis suggests that member data are relatively accurate. Even so, we can only measure consistency across methods. Finding inconsistencies between key informant estimates and surveys of sampled congregants is important nonetheless. It raises significant questions about how methodology drives current depictions of congregations. Additionally, our analysis is limited to the five denominations comprising ACGS data. While these denominations represent the principal traditions in American religion (i.e. Evangelical Protestant, mainline Protestant, and Catholic), a larger sample of denominations would make the results more generalizable. Ideally, there would also be a larger sample of participants from each congregation, although the lack of a clear effect of number of members sampled suggests that this did not seriously hamper our analysis. Additional indicators, such as religious beliefs, would also be a useful extension to the analysis.

  Of course, surveying key informants is not the only method of congregational data collection. Similar to the American Congregational Giving Study used in this research, other studies combine key informant data with nested data from congregants. Most ambitious was the 2001 U.S. Congregational Life Survey (USCLS), conducted by Cynthia Woolever and Deborah Bruce. The USCLS employed the same hypernetwork sampling of the National Congregations Study in order to establish a random sample of congregations. Instead of relying on key informants however, the research design called for three levels of surveys: an individual-level pastor/leader survey, a congregational-level profile completed by a pastor/leader, and a survey of worshippers collected during the main worship service one weekend in April 2001 (Woolever and Bruce 2002).[8] On the surface, these multi-source/multi-level data would seem far superior to data gathered exclusively from a key informant. It does enhance reliability as well as opening new possibilities for research across units of analysis (i.e. from congregation to worshipper, from pastor to worshipper, from pastor to congregation). The downside is cost and cooperation. Grants exceeding $3 million underwrote the 2001 USCLS.[9] The final sample size of congregations participating in the survey of attendees was 434 (a response rate of just 36%). In contrast, the 1998 National Congregations Study with a sample size of 1,236 and a response rate of 80% seems a bargain at approximately $1 million in total grant support. Indeed, the efficiency and cost-effectiveness of key informant research make the methodology hard to dismiss. Yet, its limitations deserve special care. Congregational researchers must recognize that even the most skilled informant faces a difficult task speaking of and for a voluntary community of worshippers. Researchers must either tolerate broader generalities about less observable congregational characteristics or take steps to supplement perceptions from the pulpit with information directly from the pews.

Notes
[1]See Hodgkinson and Weitzman (1993) for information on From Belief to Commitment, Chaves et al. (1999) for information on the National Congregations Study, and Dudley and Roozen (2001) and Roozen (2007) for information on Faith Communities Today.
[2]The Lilly Endowment, Inc. funded the ACGS. The principal investigators were Dean Hoge, Charles Zech, Patrick McNamara, and Michael Donahue. ACGS data were downloaded, free of charge, from the Association of Religion Data Archives (www.TheARDA.com).
[3]The congregations are stratified by region to match the proportion of congregations in each Census region in the five denominations respectively. The sampling areas are as follows: Norwich, CT (New England), Pittsburgh, Pa. (Mid-Atlantic), Kalamazoo, Mich. (E. N. Central), Winona, Minn. (W. N. Central), Richmond, Va. (S. Atlantic), Jackson, Miss. (E. S. Central), Oklahoma City, Okla. (W. S. Central), Colorado Springs, Colo. (Rocky Mountain), and San Diego, Calif. (Pacific).

[4]We also delete two outlier congregations where all member respondents are white yet the pastors estimate that none of the congregations' members are white.

[5]Following Reardon and Firebaugh (2002), we define

$$0 \ast \ln\left(\frac{1}{0}\right) = \lim_{\pi \to 0}\left(\pi \ast \ln\left(\frac{1}{\pi}\right)\right) = 0$$

[6]While we would prefer a larger sample of members in each congregation, preliminary analyses suggest that 20 members per congregation provide a valid profile for each congregation. For instance, the absolute values of the differences between pastor and member profiles reported in Table 1 (and used as dependent variables in the Poisson regressions in Table 2) are similar when the sample is limited to congregations with at least 25 respondents ($N = 49$ congregations).

[7]National Congregations Study data can be downloaded from the Association of Religion Data Archives website (www.TheARDA.com).

[8]We were unable to use data from the 2001 U.S. Congregational Life Survey in our analysis because the key informant surveys do not include relevant questions about the demographic breakdown of the congregations.

[9]Thanks to Cynthia Woolever for providing funding information on the 2001 USCLS.

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