GEOGRAPHICAL ANALYSIS:

State-level Contextual Factors That Predict the Religious-Secular Composition of Funder Groups

O'Neill School of Public and Environmental Affairs
in collaboration with The Aspen Institute, Religion & Society Program

Authors: Ben Wilkerson, Carolyn Rondina, and Abbi Springer Knipstine

Introduction

We examined whether funder groups' religious-secular composition is associated with its state's degree of institutional religiosity. Specifically, whether a state having a high degree of institutional religiosity is related to funder groups in that state having a high percentage of faith-based members. We used Dr. Brad R. Fulton's data on the religious-secular classification of philanthropic foundations to calculate the percentage of faith-based foundations in each state.[1]

Using this measure as a proxy for the institutional religiosity of the state's philanthropic sector, we measured the religious-secular composition as the percentage of the funder group's members that are faith-based. We then calculated the average percentage of faith-based members for each state. A regression analyses using these measures and other state-level variables assessed the relationship between state-level institutional religiosity and the funder group's percentage of faith-based members.

Regression Model 1

Regression Model 1 Description

First, we regressed the funder group's religious-secular composition on state-level predictors,[2] including the institutional religiosity of the state's philanthropic sector, individual-level religiosity (Lipka & Wormald, 2016), per capita household income (U.S. Bureau of Economic Analysis), the percentage of residents living in an urban setting (Iowa Community Indicators Program), whether the state leaned Democratic in the 2020 presidential election (2020 Electoral College Results, 2021), and the state population (Rank List: States in Profile).

A Breusch-Pagan test revealed no threat of heteroscedasticity in our model after performing the log transformations of two variables. In the absence of heteroscedasticity, we report the regression results with the original standard errors to preserve the precision of our estimates.

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1 Dr. Fulton's data contains information on 310,101 foundations distributed across all 50 states.
2 All data used in the model are from the most recent year available.

Regression Model 1 Results

Contextual Factors Associated with the State Average of Funder Groups' Percentage of Faith-Based Members

	State Average of Funder Groups' Percentage of Faith-Based Members
State's Degree of Institutional Religiosity	1.634*
	(0.898)
Individual-level Religiosity[2]	0.298
	(0.302)
Household Income per capita[1]	0.253
	(0.213)
Blue State in 2020 Election	0.005
	(0.050)
Percentage of Population in Urban Setting	-0.054
	(0.197)
State Population[1]	-0.041
	(0.030)
Constant	-0.667
	(0.848)
Observations	29
R2	0.317
Adjusted R2	0.131
Residual Std. Error	0.091 (df = 22)
F Statistic	1.705 (df = 6; 22)

Note: *p<0.1; **p<0.05; ***p<0.01
[1] Logged Values

Model 1 Discussion

We found that while the complete model is statistically insignificant at the 0.10 confidence level, the state's degree of institutional religiosity is a statistically significant predictor of the funder group's percentage of faith-based members. With a small sample size and six independent variables, we suspect this model is overfitted and masks the true associations between our independent and dependent variables.

Regression Model 2

Regression Model 2 Description and Results

For our second model, we preserved degrees of freedom by regressing only the state average of funder groups' percentage of faith-based members on the state's degree of institutional religiosity. Our second model indicates a statistically significant positive association between state institutional religiosity and average funder group religious-secular composition; and provides a more precise estimate of the association between the state's degree of institutional religiosity and the state average of funder groups' percentage of faith-based members. We report the results of our second model below.

The Relationship between a State's Degree of Institutional Religiosity and the State's Average of Funder Groups' Percentage of Faith-Based Members

	Dependent variable:
	State Average of Funder Group Religious-Secular Composition
State's Degree of Institutional Religiosity	0.433**
	(0.175)
Constant	-0.182*
	(0.096)
Observations	29
R2	0.185
Adjusted R2	0.154
Residual Std. Error	0.090 (df = 27)
F Statistic	6.112** (df = 1; 27)
Note:	*p<0.1; **p<0.05; ***p<0.01

Regression Model 3

Regression Model 3 Description and Results

The regression analyses from Model 1 and 2 support our hypothesis that a positive relationship exists between state-level contextual factors and funder group religious-secular composition. We further investigated our hypothesis and attempted to mitigate our lack of statistical power by estimating a regression model with the state's percentage of faith-based foundations as the dependent variable, and the state-level predictors from the first model (excluding state institutional religiosity) as the independent variables. We used this model to construct a synthetic measure of each state's institutional religiosity, which we used to qualitatively assess the association between our state-level variables and the religious-secular composition of funder groups. We report and interpret the results of this regression model below; then, we conduct our qualitative analysis and report our findings.

State-Level Contextual Factors Associated with the Percentage of Faith-Based Foundations in a State

	Percentage of Faith-Based Foundations in the State
Individual-level Religiosity[2]	0.187**
	(0.058)
Household Income per Capita[1]	0.023
	(0.044)
Blue State in 2020 Election	-0.010
	(0.011)
Percentage of Population in Urban Setting	-0.074
	(0.058)
State Population[1]	0.018**
	(0.006)
Constant	-0.261
	(0.171)
Observations	50
R^2	0.599
Adjusted R^2	0.554
Residual Std. Error	0.026 (df = 44)
F Statistic	13.162*** (df = 5; 44)

Note: *p<0.1; **p<0.05; ***p<0.01
[1] *Logged values*
[2] *Pew 2014 State Religious Index*

Regression Model 3 Discussion

Our model produces an F statistic of 13.162 on 5 and 44 degrees of freedom with a p-value lower than 0.01, indicating that the independent variables in our model fit the data better than random chance. The R^2 in our model of .599 suggests that our model predicts 59.9% of the variation in our dependent variable – the percentage of faith-based foundations in the state. Only two independent variables in our model are associated with the dependent variable – individual level religiosity and the state population.[3]

The parameter estimate associated with individual level religiosity, 0.187, indicates that, on average, a 1-point increase on the Pew Religiosity Index is associated with a 0.187 increase in the percentage of faith-based foundations in a state's philanthropic sector. The parameter estimate for the log of state population, 0.018, indicates that a 1% increase in population is associated with a 0.000177 increase in the percentage of faith-based foundations in a state's philanthropic sector – a result that has no practical significance.
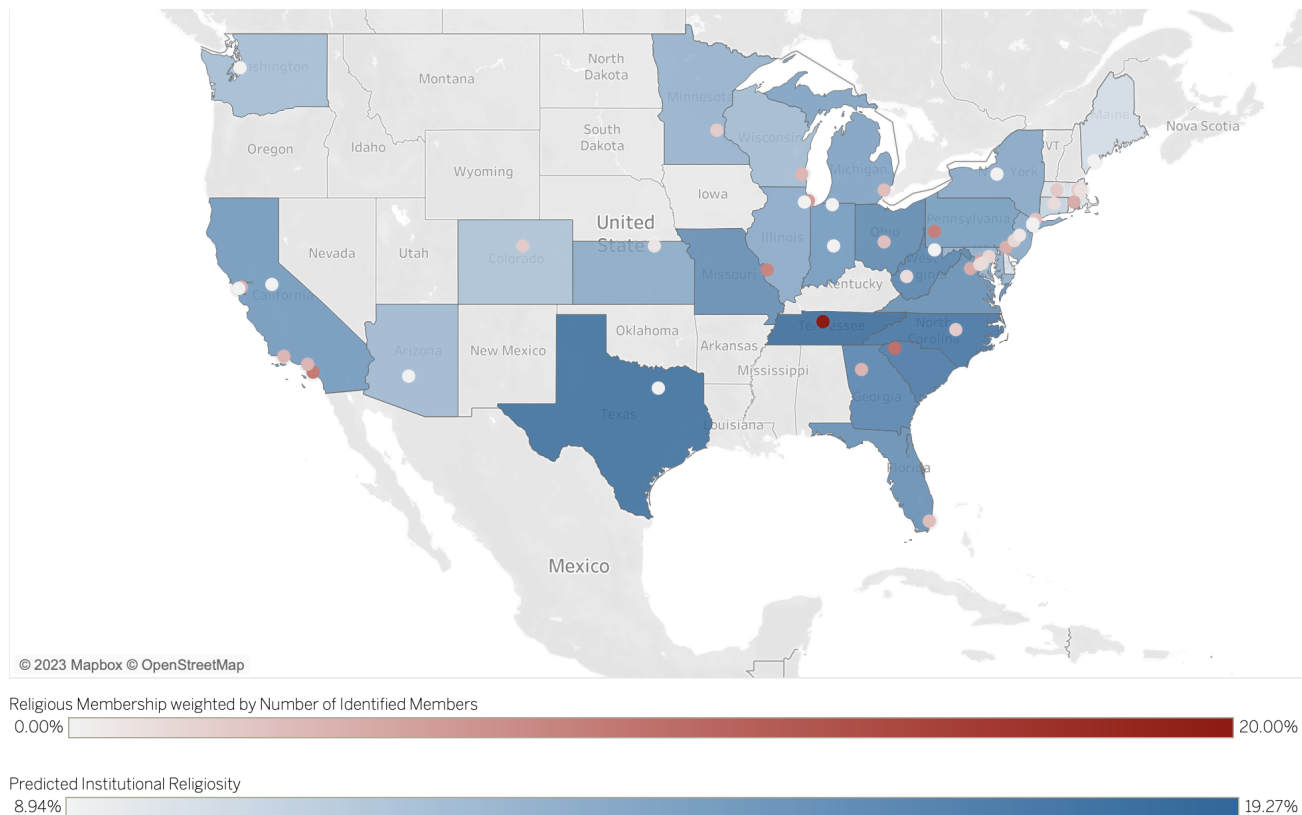
Qualitative Analysis

Given our data limitations, we cannot make causal claims about the variation in a state's degree of institutional religiosity or a funder group's percentage of faith-based members. However, we use our estimates to assess whether there are qualitative differences in the religious-secular composition of the funder group landscape between states with high and low levels of predicted institutional religiosity.

We calculated the predicted institutional religiosity of each state's philanthropic sector (for the states for which we have data on their funder groups) using our regression model, and display these values on a map of the United States.[4] We plot funder groups (for which we have data) onto this map and color funder groups according to the percentage of their member organizations that are faith-based. When stating the percentage of faith-based members for each funder group, we weight the percentage of faith-based members by the percentage of total members in each funder group that have been classified in Dr. Fulton's data. First, we present the map of all states in which a funder group is located – the darker a state, the higher we predict the religiosity of that state's philanthropic sector.

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3 We tested whether our model's statistically insignificant independent variables improve our estimates by running the regression with only the religious index and log transformed population variables. We observed no substantial change in the coefficient estimates, R^2 value, F statistic, or any other indicator of model fit. We empirically tested whether restricting our model to include only statistically significant variables is valid by performing a Chow Test for restrictions. The F-statistic and p-value calculated using this test are statistically significant at the 0.01 level. We rejected the null hypothesis that the excluded variables are jointly insignificant in our model and report our original, unrestricted model.

4 The advantage that we gain from using predicted values is that we understand the linear combination of the components which were used to calculate them. This allows us to visually examine the association between the combination of all of our predictor variables and funder group religious-secular composition.

Figure 1: Funder Groups in States, by Predicted Institutional Religiosity

Religious Membership weighted by Number of Identified Members
0.00% ▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭ 20.00%

Predicted Institutional Religiosity
8.94% ▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭▭ 19.27%

We then present only the ten states with the lowest predicted institutional religiosity and the funder groups in those states, followed by the ten states with the highest predicted institutional religiosity. In each of the following visualizations, the funder group in each segment of states with the highest share of faith-based members is annotated for ease of interpretation.

Figure 2: Funder Groups in States, by Predicted Institutional Religiosity (Ten Lowest)
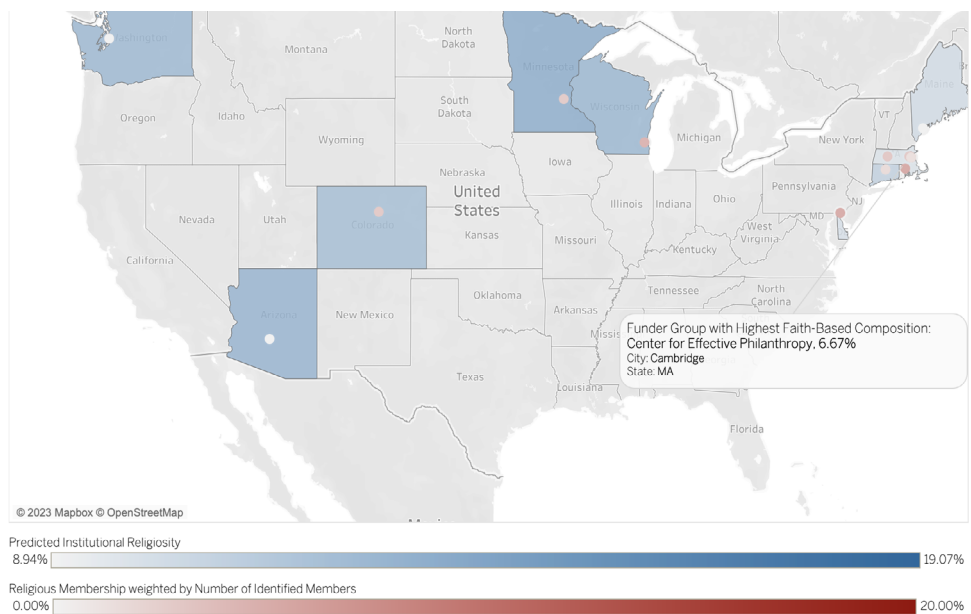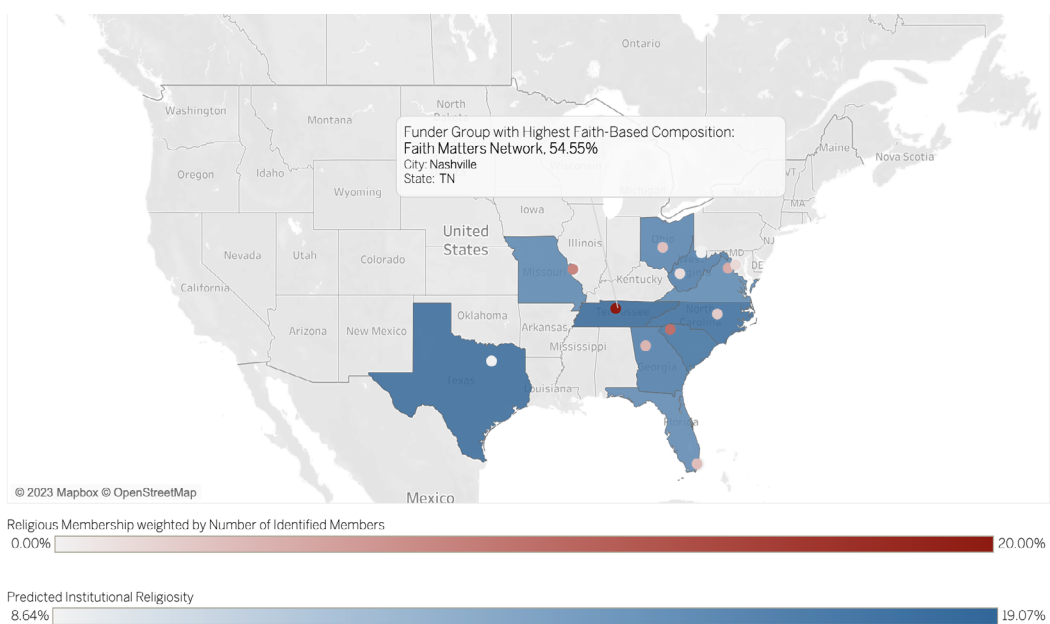

Funder Group with Highest Faith-Based Composition:
Center for Effective Philanthropy, 6.67%
City: Cambridge
State: MA

Predicted Institutional Religiosity
8.94% | 19.07%

Religious Membership weighted by Number of Identified Members
0.00% | 20.00%

Figure 3: Funder Groups in States, by Predicted Institutional Religiosity (Ten Highest)

Funder Group with Highest Faith-Based Composition:
Faith Matters Network, 54.55%
City: Nashville
State: TN

Religious Membership weighted by Number of Identified Members
0.00% | 20.00%

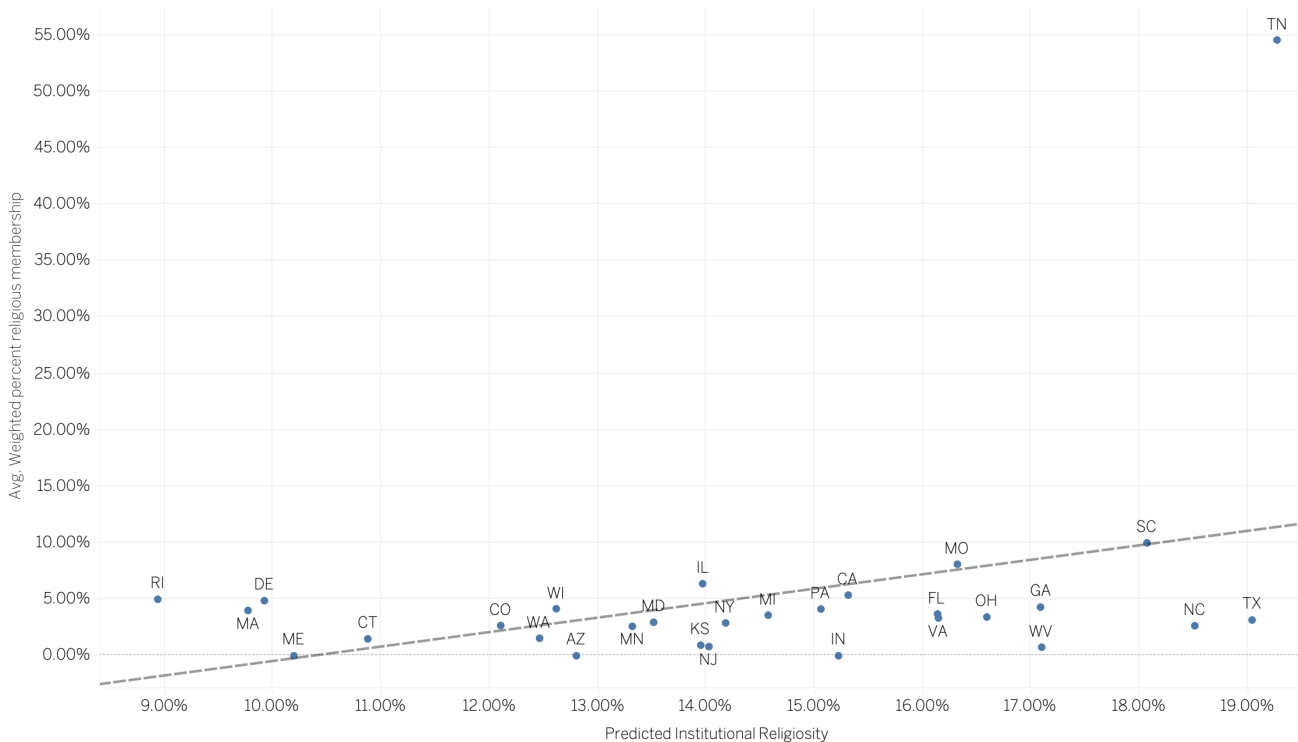Predicted Institutional Religiosity
8.64% | 19.07%

Qualitative Findings

We observed that states with higher predicted institutional religiosity appear to have funder groups with higher percentages of faith-based members than states with low predicted institutional religiosity. This finding supports the finding from our first regression model, which indicates that a state's degree of institutional religiosity has a positive association with the funder group's percentage of faith-based members. For example, Tennessee's predicted degree of institutional religiosity is 19% – the second highest value of all states – and it is home to the funder group Faith Matters Network, whose membership is 55% faith-based. By comparison, among the ten states with the lowest degree of institutional religiosity, the funder group with the highest percentage of faith-based members is the Center for Effective Philanthropy – whose membership is 7% faith-based.

Using Tableau, we plot our predicted values of state institutional religiosity against the average of the funder group's percentage of faith-based members (by state) and find that the correlation coefficient between these two variables is 0.371 with an associated p-value of 0.0473. We report this visualization below.

Figure 4: Linear Relationship between Predicted Institutional Religiosity and State-Average Funder Group Religious-Secular Composition

Conclusion

The weak-to-moderate relationship between the predicted degree of institutional religiosity of states and the average funder group's percentage of faith-based members in those states suggests that state-level average individual religiosity, per capita household income, the percentage of residents living in an urban setting, whether the state leaned Democratic in the 2020 presidential election, and the state population may be mild predictors of a funder group's religious-secular composition. Future research may continue this geographical analysis of U.S. funder groups by further developing the Faith in Philanthropy funder group dataset and examining the relationships between the religious-secular composition of funder groups and regional attitudes toward religion.

Another section of this project will examine the relationship between the funder groups' religiosity and religious-secular composition.

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