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Supplement B

Quantitative Analyses of LGBT Group Presence and Nondiscrimination Policy Adoption at Christian Colleges and Universities

In this supplement, I describe the procedures I followed to construct variables that might predict the presence of LGBT groups and inclusive nondiscrimination policies at Christian colleges and universities, and I provide the multivariate analyses referenced in the text. To assess the degree to which Christian colleges and universities are inclusive of LGBT students, I constructed two dependent variables: (a) the presence of LGBT groups and (b) the presence of nondiscrimination statements inclusive of sexual orientation. For the first dependent variable, I gathered data on which Christian colleges and universities had officially recognized LGBT groups as of summer 2013. Specifically, I visited each school’s website, located their student organizations page, and identified Gay–Straight Alliances (GSAs) or other clubs related to sexual or gender identity. If an LGBT group was not listed on the student organizations page, I conducted searches on Google using the school’s name and then search terms such as “Gay–Straight Alliance,” “Gay,” and “LGBT.” If these searches brought me to documentation that a school had an officially recognized LGBT group, I recorded a “1” for the variable; if these searches yielded no positive

evidence that a school had an officially recognized Gay–Straight Alliance, I recorded a “0.” Overall, 307 of the 682 schools (about 45 percent) contained officially recognized LGBT groups.

For my second dependent variable, I gathered data on which Christian colleges and universities had adopted nondiscrimination statements inclusive of “sexual orientation” (or related terms such as “sexual preference”). Specifically, in each school’s most recent student handbook, I searched for terms such as “discrimination,” “nondiscrimination,” and “sexual.” If a nondiscrimination statement was not included in the student handbook, or if the nondiscrimination statements were not inclusive of “sexual orientation,” I conducted searches on Google using the schools’ names and the aforementioned terms, which often brought me to admissions pages that listed the schools’ nondiscrimination policies. If I found evidence that the school had a nondiscrimination statement inclusive of “sexual orientation,” I recorded a “1”; otherwise, I recorded a “0.” Overall, 375 of the 682 schools (about 55 percent) contained nondiscrimination statements inclusive of sexual orientation.¹

To measure religious characteristics of Christian colleges and universities that might predict LGBT inclusion, I first include an institutional context variable indicating the individualist or communal orientation of each school’s associated religious tradition. To construct this variable, I first obtained information on religious affiliation from the Integrated Postsecondary Education Data System (IPEDS, 2014). I then coded these data according to classifications by Fuist, Stoll, and Kniss (2012). These authors label black Protestant denominations (e.g., National Baptist Convention and African Methodist Episcopal Church), mainline Protestant denominations (e.g., Disciples of Christ, Episcopal Church, Evangelical Lutheran Church in America, Presbyterian Church USA, United Church of Christ, and United Methodist Church), and the Roman Catholic Church as exhibiting communal orientations. By

contrast, they consider evangelical Protestant denominations (e.g., Assemblies of God, Churches of Christ, Church of the Nazarene, Presbyterian Church in America, and Southern Baptist Convention) to possess individualist orientations. The Fuist et al. (2012) study does not explicitly consider nondenominational Protestant churches, but I code these as also exhibiting individualist orientations, as their doctrines generally align with evangelical Protestant denominations.

I next include a variable capturing a religious aspect of each school's student body—specifically, the percentage of religion majors on campus. I constructed this variable by dividing the total number of religion and theology majors by the total number of degrees conferred during the 2012–13 academic year at each school, using information from each college's listing on IPEDS (2014).² In each table, I also interact this variable with the variable indicating a school's affiliation with an individualist denomination to better understand whether any effect of religion majors on LGBT inclusion is due to some universal predisposition of religion and theology majors against LGBT rights (e.g., religion and theology majors may be less exposed to social justice issues than their peers who are humanities or social science majors) or whether an effect of religion majors on LGBT inclusion is due to the fact that colleges specializing in religious and theological studies (e.g., “Bible colleges”) are more likely to be associated with individualist traditions that shelter students from worldly concerns.

Finally, to capture a religious aspect of a school's sociopolitical context, I include a variable indicating the percentage of residents in each state that belong to individualist or communal churches. Specifically, I obtained information on a school's location from IPEDS (2014) before gathering corresponding state-level church membership data from the Association of Statisticians of American Religious Bodies' (ASARB's) Association of Religion Data Archives (2015). These archives report the number of residents belonging to “evangelical

Protestant” (including nondenominational) churches—a category that overlaps with the individualist category—that I then divided by the total state population.

I also include control variables at the institutional, student body, and sociopolitical levels, as contained in past studies on LGBT groups in schools (Fetner and Kush 2008; Fine 2012; Kane 2013). For measures of each school’s institutional context, I include variables on school selectivity and endowment, drawing on information on the IPEDS (2014) website about the percentage of students accepted to the school during the 2012–13 admissions cycle, as well as information from FindTheBest (2014) on endowment per student (IPEDS does not provide data on endowment).

For measures of student body characteristics, I include variables for the number of students at the school, the percentage of nonwhite students at the school, the percentage of women at the school, and the percentage of students on loans. Each of these variables draws on IPEDS (2014) data from the 2012–13 school year, with the exception of the percentage of students on loans, which is based on data from the 2011–12 school year (the most current year available).

Finally, for measures of each school’s sociopolitical context, I include a variable on a state’s percent vote for President Obama in the 2012 election cycle, as well as a dichotomous variable indicating each school’s location in the south versus non-south (using the U.S. Bureau of the Census’s classification of southern states). Finally, I draw on IPEDS (2014) classifications on the type of area in which a school is located for a dichotomous variable on rurality.

The multivariate logistic regression analyses provide the logged odds of a Christian college or university having an LGBT group and a nondiscrimination policy inclusive of sexual orientation. I standardized the variables in the logistic regression analyses, such that the

coefficients measure the change in predicted probabilities associated with a one-standard deviation change in the predictor variables. Furthermore, because intraclass correlation (ICC) coefficients indicate that a significant proportion of the total variance in LGBT groups and nondiscrimination policies is explained by clustering within religious traditions (but not states), I employ cluster robust standard errors (by religious tradition).³

Table B-1 displays the results of the logistic regression analyses for the presence of LGBT groups. Model 1 represents a base model that excludes the primary religion variables of interest; the measure of model fit (Nagelkerke) is around 0.31. The remaining models introduce the religion variables seriatim. Model 2 shows that affiliation with an individualist religious tradition significantly and negatively impacts the presence of LGBT groups. Furthermore, model 3 shows that the percentage of religion and theology majors at a school is significantly and negatively associated with the presence of LGBT groups, and model 4 shows that the interaction between affiliation with an individualist religious tradition and the percentage of religion and theology majors at a school is significantly and negatively associated with the presence of LGBT groups. Substantively, this means that although a higher percentage of religious and theological studies majors positively impacts the presence of LGBT groups at universities affiliated with communal religious traditions, a higher percentage of religious and theological studies majors negatively affects the approval of LGBT groups at universities associated with individualistic religious traditions. The models containing these religion variables improve substantially on the base model, growing the Nagelkerke measure to 0.57 in model 2 and model 3 and to 0.65 in model 4. Not all of the religion variables provide such improvements in explanatory power. For example, while model 5 shows that the percentage of state adherents in individualist religious traditions is significantly and negatively associated with the presence of LGBT groups, this

variable only slightly improves upon the base model (0.33 versus the initial 0.31), and it becomes insignificant in the combined model. Still, the fit for the combined model (model 6) containing all of the religion variables is substantial, with the Nagelkerke indicator above 0.65.

-- Table B.1 Here --

Many of the control variables were also significant in table B.1, and for ease of reference I refer only to the combined model. Model 6 shows that schools with higher endowments, more students, fewer nonwhite students, and more students on loans are more supportive of LGBT groups. Furthermore, the state vote for Obama and location in a non-rural area are both positively and significantly related to the presence of LGBT groups. These findings are mostly consistent with previous literature (Fetner and Kush 2008; Fine 2012; Kane 2013), with the exception of the finding on student loans.⁴ However, some variables that were significant predictors of LGBT groups in past studies are not significant here, most notably a school's selectivity.

Table B-2 provides results from logistic regression analyses of nondiscrimination statements inclusive of sexual orientation. Model 2 shows that affiliation with an individualist religious tradition is significantly and negatively associated with a nondiscrimination policy inclusive of sexual orientation. Furthermore, the variable for the percentage of religion majors at a school and the term that interacts affiliation with an individualist religious tradition with the percentage of religion and theology majors at a school are both significant and negatively associated with this nondiscrimination policy in models 3 and 4. Model 4 in particular indicates that how the impact of religion and theology majors on nondiscrimination policy adoption is contingent on a school's affiliation with an individualist or communal religious tradition. Specifically, although a high percentage of religion and theology majors is positively associated

with nondiscrimination policies at schools affiliated with communal religious traditions, it is negatively associated with nondiscrimination policies at schools associated with individualist religious traditions. Model 5 shows that a higher percentage of state residents belonging to individualist religious traditions is negatively associated with the presence of nondiscrimination statements inclusive of sexual orientation, but the “value added” in terms of model fit is low, and this variable again becomes insignificant in the combined model. Overall, though, the inclusion of all of the religion variables in model 6 significantly boosts the overall model fit (from 0.19 in the base model to 0.6 in the combined model).

-- Table B.2 Here --

Compared with the models for LGBT group presence, control variables related to other institutional, student body, and sociopolitical characteristics that might explain nondiscrimination policies inclusive of sexual orientation are not as robust to the various specifications provided in table B.2. Although student body size, the percentage of students on loans, and the state vote for Obama remain significant, other control variables that were significant in the combined model in table B.1 (such as percent minorities, endowment, and location in a non-rural area) are reduced to insignificance in model 6 of table B.2. This suggests that past studies’ explanations of LGBT groups may not be as easily portable to the study of nondiscrimination policies.

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Table B.1. Logistic Regression Models for LGBT Groups at Christian Universities

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Variable	<i>b</i> (SE)	<i>b</i> (SE)	<i>b</i> (SE)	<i>b</i> (SE)	<i>b</i> (SE)	<i>b</i> (SE)
<u>Religion</u>						
Affiliation with individualist religious tradition		-3.572 *** 0.393		-6.048 *** 1.610		-6.249 *** 1.636
% religion majors			-11.531 *** 2.094	-6.923 *** 1.550		-6.930 *** 1.556
Affiliation with Individualist Religious Tradition × % Religion Majors				-8.510 * 3.853		-9.175 * 3.855
% state adherents of individualist religious traditions					-0.607 *** 0.155	-0.375 0.194
<u>Student body</u>						
Number of students	0.503 0.259	0.552 *** 0.163	0.289 0.213	0.417 * 0.211	0.557 ** 0.202	0.457 ** 0.153
% minorities	-0.273 * 0.107	-0.507 *** 0.142	-0.489 ** 0.171	-0.588 *** 0.184	-0.251 * 0.104	-0.572 ** 0.180
% women	0.395 * 0.164	0.048 0.134	-0.217 0.115	-0.245 0.139	0.381 * 0.165	-0.253 0.137
% student loans	0.476 *** 0.116	0.453 *** 0.113	0.378 * 0.152	0.337 * 0.151	0.475 *** 0.117	0.333 * 0.156
<u>Institution</u>						
Endowment (full-time equivalent)	1.306 ** 0.492	0.767 ** 0.293	1.154 ** 0.336	0.959 *** 0.210	1.334 ** 0.490	0.969 *** 0.212
% acceptance	-0.015 0.148	0.046 0.229	0.059 0.227	0.035 0.266	-0.019 0.158	0.027 0.272
<u>Context</u>						
% state vote for Obama	0.376 *** 0.087	0.418 *** 0.090	0.501 *** 0.124	0.531 *** 0.140	0.084 0.099	0.351 * 0.149
Non-South	0.309 0.339	-0.124 0.224	0.073 0.348	-0.196 0.233	-0.245 0.397	-0.534 0.340
Non-rural	0.389 0.256	0.716 ** 0.247	0.921 *** 0.262	1.004 ** 0.328	0.378 0.248	1.002 ** 0.318
<u>Constant</u>						
	-0.657 0.511	0.222 0.405	-5.152 *** 1.104	-2.647 ** 0.885	-0.318 0.533	-2.462 ** 0.952
Chi-square	177.45 ***	377.23 ***	375.97 ***	454.96 ***	190.14 ***	458.17 ***
Nagelkerke	0.306	0.568	0.567	0.651	0.325	0.654

Note: $N = 682$; standardized coefficients with standard errors clustered by denomination; * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

Table B.2. Logistic Regression Models for Nondiscrimination Statements with Sexual Orientation at Christian Universities

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Variable	<i>b</i> (<i>SE</i>)	<i>b</i> (<i>SE</i>)	<i>b</i> (<i>SE</i>)	<i>b</i> (<i>SE</i>)	<i>b</i> (<i>SE</i>)	<i>b</i> (<i>SE</i>)
<u>Religion</u>						
Affiliation with individualist denomination		-3.504 *** 0.327		-4.031 *** 0.578		-4.027 *** 0.580
% religion majors			-3.198 * 1.491	-0.818 0.540		-0.821 0.543
Affiliation with Individualist Denomination × % Religion Majors				-3.172 * 1.334		-3.191 * 1.332
% state adherents of individualist denominations					-0.449 *** 0.133	-0.048 0.184
<u>Student body</u>						
Number of students	0.340 0.205	0.366 ** 0.141	0.087 0.120	0.238 0.122	0.389 * 0.188	0.244 * 0.122
% minorities	0.182 0.137	0.107 0.143	0.173 0.138	0.110 0.151	0.204 0.138	0.112 0.151
% women	0.517 *** 0.131	0.164 0.149	0.030 0.091	-0.036 0.090	0.501 *** 0.133	-0.037 0.090
% student loans	0.400 *** 0.106	0.332 *** 0.097	0.236 0.123	0.239 * 0.111	0.399 *** 0.102	0.238 0.122
<u>Institution</u>						
Endowment (full-time equivalent)	0.698 0.482	0.194 0.227	0.401 0.335	0.125 0.215	0.702 0.486	0.125 0.215
% acceptance	-0.025 0.063	0.062 0.133	0.096 0.078	0.092 0.132	-0.034 0.065	0.090 0.134
<u>Context</u>						
% state vote for Obama	0.212 ** 0.081	0.257 * 0.104	0.298 *** 0.079	0.310 ** 0.107	-0.015 0.093	0.289 * 0.153
Non-South	0.148 0.337	-0.466 0.267	0.059 0.357	-0.473 0.282	-0.268 0.403	-0.519 0.348
Non-rural	-0.125 0.191	-0.078 0.150	0.101 0.163	0.034 0.163	-0.140 0.183	0.032 0.163
<u>Constant</u>	0.254 0.458	1.727 *** 0.255	-0.710 0.684	1.411 *** 0.317	0.524 * 0.476	1.437 *** 0.336
Chi-Square	106.54 ***	371.78 ***	236.69 ***	406.83 ***	114.39 ***	406.99 ***
Nagelkerke	0.193	0.562	0.392	0.601	0.207	0.601

Note: $N = 682$; standardized coefficients with standard errors clustered by denomination; * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

Endnotes

¹ I also gathered data on nondiscrimination statements inclusive of “gender identity”; however, few school policies contained such language ($n = 70$).

² I used a combined measure for religious studies majors and theology majors because IPEDS (2014) combines the data for some schools and because the more individualist and conservative schools in the data set often treat religious studies as theological studies.

³ To undertake a robustness check, I also estimated multilevel models with colleges nested within denominations. The models, not shown here but available on request, produced estimates substantively similar to those in the results that follow.

⁴ The finding that a higher percentage of students on loans positively impacts LGBT student group presence may be partially explained by the higher tuitions found at the larger, more selective schools that tend to be more inclusive of LGBT students and, conversely, the lower tuitions found at the smaller schools that focus on religious and theological studies and tend to discriminate against LGBT students (see discussion by Ellis 2011). Some of these latter schools also opt out of the federal loan system completely.