Supplementary Materials - Political Responsiveness and Centralized Religious Leaders: Lessons from the Catholic Church

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The first portion of the Supplementary Materials is dedicated to Study 1 (Section SM.1), which investigates whether papal rhetoric is responsive to Catholic public opinion. It includes details about the construction and descriptive statistics of empirical variables, as well as model extensions and robustness checks for the regression analysis. The second half of the Supplementary Materials provides information about the survey experiments (Section SM.2). Specifically, I outline information related to the experimental design, question wording, description of country samples, and robustness checks for the analysis in the manuscript.

SM.1 Study 1: Automated Content Analysis and Regressions

SM.1.1 Measurement of Papal Rhetoric

Table SM.1 lists some illustrative examples of hand-coded documents that make up the "training" set that is used for the automated content analysis. The original papal documents are typically lengthy, so documents in the training set are divided and each segment (often a sentence) of a given document is assigned to a specific issue area. Since

the unit of analysis of the training set is at the sentence-level, I divided each document in the test set into sentences prior to running the automated content analysis. The predicted probabilities that are generated from the automated content analysis can therefore be interpreted as the predicted proportion of papal rhetoric (observed as sentences within papal documents) dedicated to a given issue area.

Table SM.1: Examples of hand-coded documents of papal rhetoric for each issue area.

Violence/conflict:

"I would like to pray with you and I do it from the heart for all the victims of the mafia just a few days ago close to Taranto. There was a crime that was merciless not even sparing a child.".

Economy:

"The fight against hunger and malnutrition is hindered by market priorities. The primacy of profits have reduced foodstuffs to a commodity like any other subject to speculation of a financial nature."

Socio-political issues:

"Refugees such as yourselves often find themselves deprived sometimes for long periods of basic needs such as a dignified home, healthcare, education and work. They have had to abandon not only their material possessions but above all their freedom, closeness to family, their homeland and cultural traditions."

Human rights:

"Therefore all initiatives such as your own are welcome, which aim to help people communities and institutions to rediscover the ethical and social importance of the principle of human dignity, which is the root of liberty and justice."

Religious/other:

"I would like to say thank you thank you very much right from the start you have accompanied me with your prayers your affection and your precious service in the various celebrations. Let us pray together to our Lady Hail Mary."

The majority of documents are translated and published in English on the Vatican's archive, while others are only published in Latin, Spanish, French, or German. To increase the quantity and duration of the analysis, I translate the multilingual corpora into a common language using Google Translate. This process is especially time efficient, and given that the ordering of terms in a document does not affect the classification algorithm, "the translation software needs only to correctly translate the significant terms in the original document" (Lucas et al. 2015, 260).

As an illustration of the output that is generated by the automated content analysis, the quote below (a speech made by Pope John Paul II on July 14, 2004) was estimated by the algorithm to be primarily composed of "religious/other" content.[2] This matches the hand-coded label the document would receive if it was placed in the training set.

> "Before leaving this enchanting place where I have spent a period of invigorating rest, I feel the need to address my deepest thanks to you, Mr. Mayor, to the Municipal Administration and to the entire Town Council of Introd for your cordial welcome to me and my collaborators. I extend these sentiments of gratitude to those who have cooperated in their various capacities to ensure that my stay here in Les Combes, among the mountains of the Valle d'Aosta, would go smoothly. I am now preparing to leave for Castel Gandolfo, cherishing in my mind and heart the memory of all the care I have received. I feel deeply grateful to you too, for everything. I ask

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[2]Unfortunately, it is not possible to execute the ReadMe algorithm on a single document and retrieve estimated proportions of each topic category because (1) the number of words to be subset from all words for estimation at each iteration and (2) the total number of draws of different subsets of those select words are too low. Simply put, the sample is too small. Still, documents in the "test set" can be used to compare to ReadMe's estimate of the distribution.

the Lord, whose omnipotent providence is strikingly visible in this Alpine scenery, to continue to protect the communities and administrators of Introd. Very dear brothers and sisters, may the Madonnina of Gran Paradiso watch over you from this mountain top. For my part, I assure you of my special remembrance in prayer, as I bless you all, each and every one."

The temporal trends of papal rhetoric by topic category are displayed in Figure SM.1. There is substantial variation within and between the other topical proportions of papal rhetoric between 1995 and 2014, which spans three papacies.

Figure SM.1: Predicted topic proportions in papal rhetoric across time by issue topic (1995-2014).
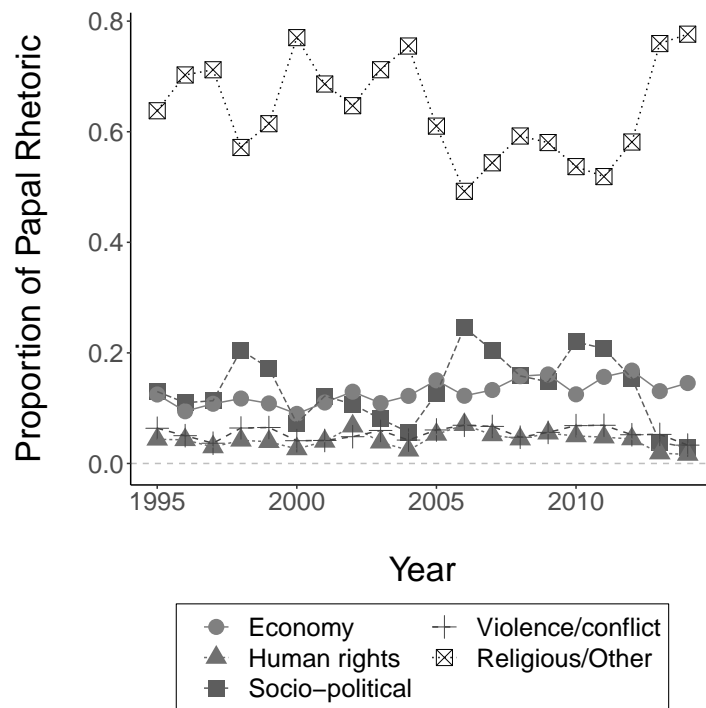
Notes: This figure plots the predicted proportions of papal rhetoric estimated from the supervised learning algorithm among all of the categories (socio-political issues, violence/conflict, economy, human rights, and religious/other). The largest proportion of rhetoric is dedicated to religious topics.

As an initial indication that these estimates are reasonable and support previous research on papal rhetoric, Genovese (2015) notes that "the Vatican has dedicated roughly one third of its post-war encyclicals to the political themes of social justice, civil rights and economic development" (2015, 2). This is similar to the proportion of religious speech that is dedicated to political issues at lower levels of religious organizations among priests and preachers (Boussalis, Coan and Holman 2021). Figure SM.1 highlights a comparable pattern such that approximately 60-70% of the pope's yearly discourse is dedicated to religious matters while the remainder to political issue areas.

SM.1.2 Measuring Catholic Population and Public Opinion

Next, I constructed a measure of Catholic public opinion, $(\frac{\text{Country } A \text{ Catholic Population}}{\text{World-wide Catholic Population}}) *$ % of Catholics in A concerned with topic x, which requires two steps of data collection. First, I develop a measure of the population in each country that adheres to Catholicism. The *Yearly Catholic Population Statistics* are released by the Church in the *Annuarium Statisticum.* I collected data on the number of Catholics for each country year in the combined data set of public opinion. The full set of scanned documents from the *Annuarium Statisticum* can be viewed on my data archive.

Second, I gathered information on Catholics' preferences by compiling numerous World Values Survey instruments. The number of Catholics found in each survey in each year is presented in Table SM.4. Only countries in which at least 50 Catholic respondents were recorded are included in the sample used in the main analyses. Even with this low threshold, the limited number of countries surveyed in each year means that the sample of Catholics in the surveys represent a small portion of the total target population.

Figure SM.2 shows the percentage of all world-wide Catholics that are "represented" in the sample. With regard to the geographic dispersion of the sample, Table SM.2 records the number of Catholic respondents in each country in each year.

Figure SM.2: Percent of world-wide Catholics represented in measure of public opinion (1995-2014).
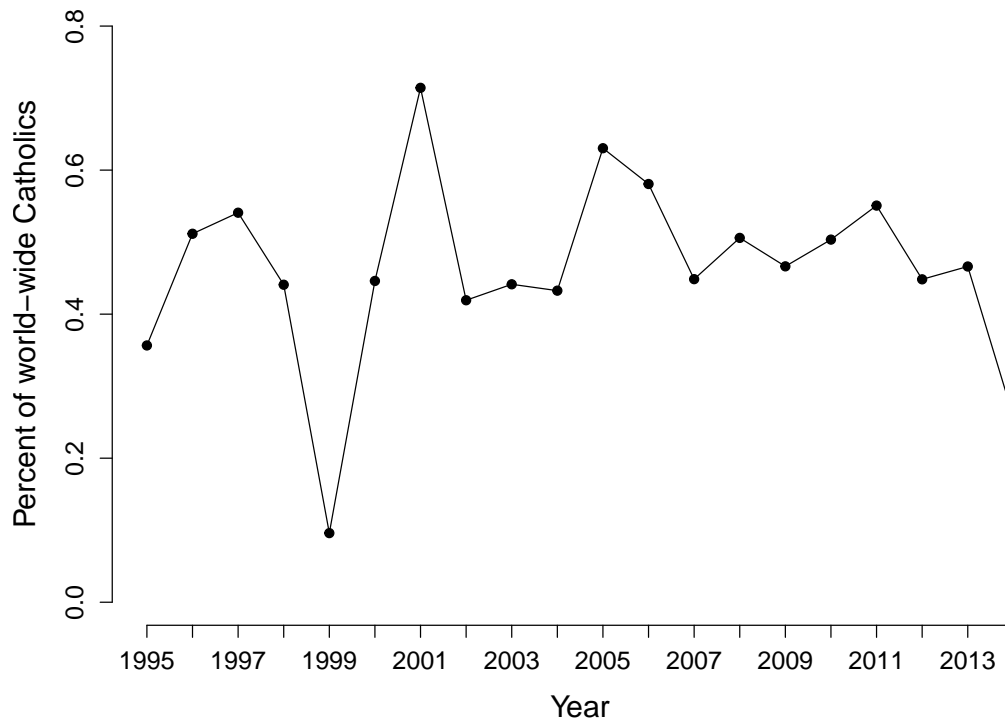
Notes: Given the substantial lack of respondents surveyed in 1999, I removed the outlying observation for all models specified using Equation 1. The exclusion of the observation did not change the substantive interpretation or reliability of the models, so all models reported in the main text include the yearly observation from 1999.

An issue that arises from Tables SM.2 and SM.3 is that for most countries the survey data is not available every year. As I state in the manuscript, the sample of countries used to compute the variable of Catholic public opinion (which is a weighted average of opinions in each country) changes every year. If the variation in opinions or preferences

Table SM.2: Number of Catholics by country panel.

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Albania	0	0	0	70	0	0	0	580	0	0	0	0	0	0	0	0	0	0	0	0
Andorra	0	0	0	0	0	0	0	0	0	0	545	0	0	0	0	0	0	0	0	0
Argentina	1874	1020	987	1026	1002	968	965	974	955	980	972	1718	921	921	937	912	899	0	1598	0
Australia	542	0	0	0	0	0	0	0	0	0	330	0	0	0	0	0	0	344	0	0
Austria	0	0	1701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bahamas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	875
Barbados	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	226
Belarus	0	161	0	0	0	0	0	0	0	0	0	0	0	0	0	0	155	0	0	0
Belgium	0	0	1430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Belize	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	664	0	574	0	642
Benin	0	0	0	0	0	0	0	0	0	0	210	0	0	158	0	0	174	0	0	0
Bolivia	0	644	660	643	0	812	838	1002	942	3366	936	3251	948	892	966	912	926	0	916	0
Bosnia	0	0	0	157	0	0	154	0	0	0	0	0	0	0	0	0	0	0	0	0
Brazil	940	785	678	704	0	669	697	714	837	829	830	1725	812	832	773	2274	776	910	753	1630
Burkina Faso	0	0	0	0	0	0	0	0	0	0	0	0	473	129	0	0	0	110	0	0
Burundi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	341	0	0
Cameroon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	239	0
Canada	0	0	0	0	0	800	0	0	0	0	0	876	0	0	0	0	0	0	0	0
Cape Verde	0	0	0	0	0	0	0	456	0	0	496	0	0	463	0	0	377	0	0	0
Chile	914	1592	884	807	0	1506	832	801	813	804	767	2436	746	785	795	763	1356	0	710	0
Colombia	0	1049	3557	3664	0	1016	991	995	977	955	3218	954	965	1067	952	2068	918	2052	902	1069
Costa Rica	0	811	815	771	0	726	726	725	693	654	678	645	693	663	642	1543	636	1020	617	1001
Cote d'Ivoire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Croatia	0	989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Czech Rep.	0	0	0	457	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Denmark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dominican Rep.	0	245	0	0	0	0	0	0	0	703	636	702	768	773	735	1665	627	825	646	776
Ecuador	0	1062	1040	1060	0	1016	1066	1077	1026	1004	1011	1020	1018	984	998	3358	1005	1176	1725	0
El Salvador	0	673	577	666	738	603	555	542	530	534	546	567	461	562	513	1311	455	693	542	678
Finland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
France	0	0	1259	0	0	0	0	0	0	0	0	411	0	0	0	0	0	0	0	0
Germany	0	0	1267	0	0	0	0	0	0	0	0	430	0	0	0	0	0	0	422	0
Ghana	0	0	0	0	0	0	0	97	0	0	100	0	319	101	0	0	0	361	0	0
Great Britain	0	0	224	0	0	0	0	0	0	0	106	0	0	0	0	0	0	0	0	0
Guatemala	0	540	535	694	0	595	517	605	583	1145	530	566	542	481	505	1323	467	830	472	729
Guyana	0	0	0	0	0	0	0	0	0	0	0	155	0	0	0	105	0	98	0	104
Haiti	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	894	0	972	0	736
Honduras	0	754	685	572	0	612	571	546	501	550	498	498	470	474	461	1281	460	833	440	678
Hungary	0	0	0	366	0	0	0	0	0	0	0	0	0	0	471	0	0	0	0	0
India	55	0	0	0	0	0	59	0	0	0	0	0	0	0	0	0	0	0	0	0
Indonesia	0	0	0	0	0	0	65	0	0	0	0	0	0	0	0	0	66	0	0	0
Ireland	0	0	1841	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Italy	0	0	1818	0	0	0	0	0	0	0	885	0	0	0	0	0	0	0	0	0
Jamaica	0	0	0	0	0	0	0	0	0	0	0	68	0	0	0	0	0	0	0	0
Kenya	0	0	0	0	0	0	0	0	369	0	168	0	0	140	0	0	293	0	0	0
Latvia	0	222	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lebanon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	261	0
Lesotho	0	0	0	0	0	0	0	0	247	0	261	0	0	249	0	0	0	236	0	0
Lithuania	0	0	778	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Luxembourg	0	0	1017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Madagascar	0	0	0	0	0	0	0	0	0	0	262	0	0	248	0	0	0	0	222	0
Malawi	0	0	0	0	0	0	0	181	0	137	0	0	117	0	0	0	231	0	0	0
Malaysia	0	0	0	0	0	0	0	0	0	0	84	0	0	0	0	0	0	0	0	0
Mauritius	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	133	0	0
Mexico	1466	2214	801	999	0	2151	858	953	909	934	1972	1002	976	969	990	2255	956	2656	950	1236
Mozambique	0	0	0	0	0	0	0	229	0	0	200	0	0	170	0	0	0	376	0	0
Namibia	0	0	0	0	0	0	0	0	202	0	0	193	0	160	0	0	0	127	0	0
Netherlands	0	0	402	0	0	0	0	0	0	0	0	261	0	0	0	0	0	334	0	0
New Zealand	0	0	0	172	0	0	0	0	0	131	0	0	0	0	0	0	107	0	0	0
Nicaragua	0	795	769	717	0	715	697	671	552	635	567	570	550	526	544	1276	522	826	473	745
Nigeria	503	0	0	0	0	0	0	0	197	0	176	0	0	141	0	0	359	118	0	0

Table SM.3: Number of Catholics by country panel, continued.

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Panama	0	898	868	794	0	822	654	755	738	775	793	752	779	766	753	1765	681	974	720	1104
Paraguay	544	521	500	540	0	555	540	547	529	507	1045	1037	1042	1046	1075	2366	1049	1291	1057	1254
Peru	1100	2075	920	890	0	894	2140	1014	971	971	936	2037	890	935	958	2110	937	2028	929	1166
Philippines	0	1017	0	0	0	0	858	0	0	0	996	0	0	0	0	1013	0	836	0	0
Poland	0	0	1078	0	0	0	0	0	0	0	944	0	0	0	0	0	0	889	0	0
Portugal	0	0	1761	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Puerto Rico	659	0	0	0	0	0	412	0	0	0	0	0	0	0	0	0	0	0	0	0
Romania	0	0	0	69	0	0	0	0	0	0	134	0	0	0	0	0	0	0	0	0
Rwanda	0	0	0	0	0	0	0	0	0	0	0	0	788	0	0	0	0	851	0	0
Singapore	0	0	0	0	0	0	0	97	0	0	0	62	0	0	0	0	0	133	0	0
Slovakia	0	0	0	801	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slovenia	715	0	0	0	0	0	0	0	0	0	675	0	0	0	0	0	695	0	0	0
South Africa	0	364	0	0	0	0	285	175	0	0	0	511	0	84	0	0	81	0	535	0
South Korea	0	157	0	0	0	0	166	0	0	0	256	0	0	0	0	201	109	0	0	0
Spain	2605	2181	3578	2870	0	980	0	0	0	1837	0	1768	2733	1794	1736	1692	861	0	1683	0
Suriname	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1223
Switzerland	0	619	0	0	0	0	0	0	0	0	0	0	509	0	0	0	0	0	0	0
Tanzania	0	0	0	0	0	0	330	0	212	0	212	0	0	174	0	0	0	314	0	0
Togo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	204	0	0
Trinidad and Tobago	0	0	0	0	0	0	0	0	0	0	0	205	0	0	0	0	199	0	0	1047
Uganda	0	0	0	0	0	0	366	455	0	0	494	0	0	486	0	0	127	367	0	0
Ukraine	0	166	0	0	0	0	0	0	0	0	0	68	0	0	0	0	94	0	0	0
United States	0	0	0	0	278	0	0	0	0	0	0	256	0	0	0	0	485	0	0	0
United States	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uruguay	733	1158	732	720	0	716	689	680	668	604	554	893	1134	515	529	1011	731	504	489	534
Venezuela	1057	2302	1069	1007	0	1837	1038	1026	1073	1007	1050	962	885	918	1041	971	954	0	950	0
Vietnam	0	0	0	0	0	0	59	0	0	0	0	0	92	0	0	0	0	0	0	0
Zambia	0	0	0	0	0	0	0	0	151	0	194	0	513	0	148	0	0	0	138	0
Zimbabwe	0	0	0	0	0	0	175	0	0	98	90	0	0	0	84	0	0	482	0	0

Table SM.4: Number of Catholics by yearly survey panel.

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Afro Barometer	0	0	0	0	0	0	0	1412	1559	94	3000	340	0	2820	230	0	1052	2889	747	0
Americas Barometer	0	0	0	0	0	0	0	0	0	2449	0	3542	620	0	0	16903	0	15107	0	16714
Asian Barometer	0	0	0	0	0	0	0	0	0	0	1045	223	25	0	0	1052	220	0	0	0
Euro Barometer	14397	0	13952	7006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Latino Barometer	7255	16992	15583	15733	0	13672	15188	15695	15323	15785	14169	16131	15757	15903	15903	15666	13480	0	15144	0
WVS	5235	8056	4721	4678	2018	4321	4165	677	0	691	7247	6700	3558	0	471	201	3830	7147	2646	799

across countries within a year is high, then this could create substantial measurement error, as only one subset of countries are represented in each year (and this subset of countries changes across years). The amount of variation in Catholics' opinion that is explained by country, however, is quite low (η^2=0.02, $\alpha = 0.05$), which signals that fluctuations in Catholics' opinion are largely temporal. This is further evidence that the approach I take in the manuscript (to aggregate/collapse the analysis at the year level) is appropriate.

The temporal trends of Catholics' concerns by topic category are displayed in Figure SM.3.

Figure SM.3: Proportion of global Catholics surveyed in a given year that are concerned with a specific issue (1995-2014).
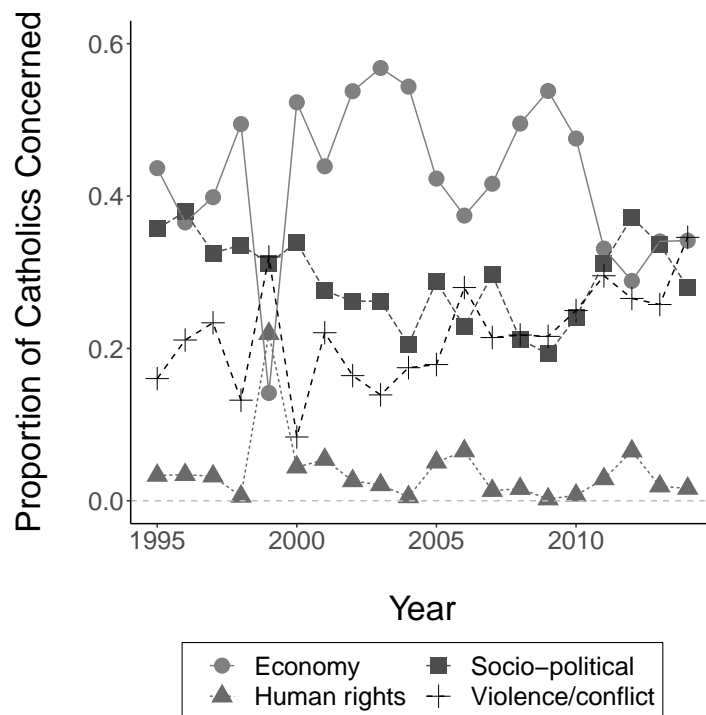
Notes: This figure plots the proportion of Catholics that are concerned with an issue among the four common categories (socio-political issues, violence/conflict, economy, and human rights).

SM.1.3 Alternative Model Specifications

The ideal analytical strategy would model the compositional nature of papal rhetoric. One tool to accomplish this is Dirichlet regression, which allows for nominal proportions in the outcome without limiting each observation to a single category (Hijazi and Jernigan 2009). With such a model, the estimation of each topic category's slope and intercept incorporates the inherent and contemporaneous negative correlation between outcome categories. Unfortunately, there are too few observations to perform such an analysis.

As a substitute, I begin in Table SM.5, which displays the full lag structure between Catholic public opinion's impact on papal rhetoric outlined in Equation 1 from the manuscript without any control variables. The model in the last column includes varying intercepts by pope. The results in Table SM.5 do not differ substantively from those in the manuscript. Table SM.6 reports the full estimated coefficients from Table 1 in the manuscript.

With the addition of the control variables to the regression, the magnitude of the estimated coefficient for current Catholic public opinion increases, while the log-likelihood, AIC, and BIC decrease indicating better model fit. Interestingly, there does not seem to be a lagged effect, none of the lagged measures of Catholic public opinion are statistically reliable. If the pope is responsive, he adjusts his rhetoric within the same year.

Further, the bottom section of Table SM.5 suggests that the impact of Catholic public opinion on papal rhetoric differs by issue area. There is slight variation in papal rhetoric across issue area (σ_α). Additionally, there is similar variation in the effect of public

Table SM.5: The variation in contemporaneous papal rhetoric is positively associated with the variation in current Catholic public opinion.

	Dependent variable:					
	Proportion of papal rhetoric					
	(1)	(2)	(3)	(4)	(5)	(6)
Catholic Public Opinion	0.102**	0.104*	0.124*	0.129*	0.150*	0.113*
	(0.037)	(0.047)	(0.054)	(0.056)	(0.060)	(0.049)
Catholic Public Opinion$_{t-1}$	−0.029	−0.029	−0.022	−0.021	−0.014	−0.015
	(0.056)	(0.056)	(0.058)	(0.063)	(0.063)	(0.052)
Catholic Public Opinion$_{t-2}$			−0.073	−0.072	−0.106	−0.102
			(0.060)	(0.063)	(0.066)	(0.054)
Catholic Public Opinion$_{t-3}$				0.006	−0.0004	−0.003
				(0.065)	(0.065)	(0.054)
Catholic Public Opinion$_{t-4}$					0.080	0.071
					(0.066)	(0.055)
$\sigma_{\alpha(\text{Issue topic})}$	0.010	0.012	0.016	0.016	0.012	0.010
$\sigma_{\alpha(\text{Pope})}$						0.001
$\sigma_{\beta 1}$	0.009	0.008	0.009	0.009	0.011	0.006
σ_{y}	0.001	0.001	0.001	0.001	0.001	0.001
Control variables	-	-	-	-	-	-
Log Likelihood	144.731	133.301	123.218	112.472	104.380	113.041
AIC	−279.462	−254.602	−232.435	−208.945	−190.761	−206.082
BIC	−267.552	−240.618	−216.499	−191.189	−171.331	−184.494
N	80	76	72	68	64	64

Notes: The fixed coefficient estimates from an OLS multi-level regresion are shown with standard errors in parentheses. Statistically reliability is reported as $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$.

Table SM.6: The full estimated models in Table 1 of the manuscript.

	Dependent variable:					
	Proportion of papal rhetoric			Proportion of Catholic public opinion		
	(1)	(2)	(3)	(4)	(5)	(6)
	Lags only	Controls only	Full model	Lags only	Controls only	Full model
Catholic public opinion	0.15*	0.31***	0.38***			
	(0.06)	(0.08)	(0.10)			
Catholic public opinion$_{t-1}$	−0.01		−0.03			
	(0.06)		(0.06)			
Catholic public opinion$_{t-2}$	−0.11		−0.12			
	(0.07)		(0.06)			
Catholic public opinion$_{t-3}$	−0.00		−0.03			
	(0.07)		(0.06)			
Catholic public opinion$_{t-4}$	0.08		0.04			
	(0.07)		(0.06)			
Papal rhetoric				0.53	0.27	0.12
				(0.37)	(0.26)	(0.41)
Papal rhetoric$_{t-1}$				0.43		0.33
				(0.47)		(0.48)
Papal rhetoric$_{t-2}$				−0.14		−0.19
				(0.50)		(0.52)
Papal rhetoric$_{t-3}$				0.06		0.01
				(0.49)		(0.52)
Papal rhetoric$_{t-4}$				0.13		0.04
				(0.40)		(0.42)
log(Battle Related Deaths)		−0.01*	−0.02*		0.02*	0.02
		(0.01)	(0.01)		(0.01)	(0.01)
Economic growth		−0.00	−0.00		0.00	−0.00
		(0.00)	(0.00)		(0.01)	(0.01)
$\sigma_{\alpha\text{(Issue topic)}}$	0.010	0.012	0.016	0.016	0.012	0.010
$\sigma_{\alpha\text{(Pope)}}$						0.001
$\sigma_{\beta 1}$	0.009	0.008	0.009	0.009	0.011	0.006
σ_{y}	0.001	0.001	0.001	0.001	0.001	0.001
AIC	−190.76	−258.58	−170.53	−109.26	−144.16	−92.23
BIC	−171.33	−241.91	−146.78	−89.83	−127.49	−68.48
Log Likelihood	104.38	136.29	96.26	63.63	79.08	57.11

Notes: The fixed coefficient estimates from an OLS multi-level regresion are shown with standard errors in parentheses. Statistically reliability is reported as ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$.

opinion across issue area ($\sigma_{\beta 1}$), while there is little variation within issue area (σ_y). This further indicates that the pope's responsiveness varies by issue area, but these findings are limited. Due to the compositional nature of both the outcome and indicator, these models are not ideal to explain which topics generate more relative responsiveness, or how responsiveness to one issue area is impacted by the allocation of papal rhetoric to another issue area.

The second set of robustness models I conduct replace Catholic public opinion with total public opinion and non-Catholics' opinion. If it is the case that the pope responds to general shifts in public opinion, and not necessarily in response to shifts in his members' preferences, then there should be a positive association between total public opinion and papal rhetoric regarding the same subject matter. Tables SM.7 and SM.8 further show that none of the estimated coefficients for total public opinion or non-Catholics' opinion are reliably associated with papal rhetoric.

Table SM.7: The variation in contemporaneous papal rhetoric is not reliably associated with the variation in total public opinion.

	Dependent variable:
	Proportion of papal rhetoric (1)
Total Public Opinion	0.050
	(0.059)
Total Public Opinion$_{t-1}$	0.031
	(0.059)
Total Public Opinion$_{t-2}$	−0.007
	(0.061)
Total Public Opinion$_{t-3}$	0.043
	(0.060)
Total Public Opinion$_{t-4}$	0.057
	(0.051)
σ_α	0.05
$\sigma_{\beta 1}$	0.03
σ_y	0.04
Control variables	✓
Log-Likelihood	93.486
AIC	−164.972
BIC	−141.224
N	64

Notes: The fixed coefficient estimates from an OLS multi-level regresion are shown with standard errors in parentheses. Statistically reliability is reported as $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$.

Table SM.8: The variation in contemporaneous papal rhetoric is not reliably associated with the variation in public opinion of only non-Catholics.

	Dependent variable:
	Proportion of papal rhetoric
	(1)
non-Catholic Public Opinion$_{t-1}$	0.008
	(0.063)
non-Catholic Public Opinion$_{t-2}$	−0.057
	(0.067)
non-Catholic Public Opinion$_{t-3}$	0.017
	(0.066)
non-Catholic Public Opinion$_{t-4}$	0.110
	(0.066)
σ_α	0.07
$\sigma_{\beta1}$	0.07
σ_y	0.04
Control variables	✓
Log-Likelihood	94.585
AIC	−167.170
BIC	−143.422
N	64

Notes: The fixed coefficient estimates from an OLS multi-level regresion are shown with standard errors in parentheses. Statistically reliability is reported as $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$.

SM.2 Study 2: Survey Experiments

The two survey experiments were conducted in Brazil and Mexico in Summer 2018. As of 2010, Brazil had the largest absolute number of Catholic followers, as well as share of the global Catholic population (over 133.5 million and 12.2% of the world Catholic population), while Mexico was second in both categories (over 96 million followers and 8.6% of the world Catholic population) (Pew 2011). The two countries were also selected because they are relatively similar in terms of political, economic, as well as demographic characteristics. The following sections outline the sample by demographic characteristics (age, gender, region), as well as robustness analyses and supporting materials for the analysis presented in the manuscript.

SM.2.1 Sample Description

I generated pre-analysis quotas prior to data collection by respondent characteristics (age, gender, region) to ensure national representative samples in both countries, which are shown in Tables SM.9 and SM.10. The final samples, including their deviation from the target population, are found in Tables SM.11 and SM.12. Table SM.13 also shows that there are no socio-demographic indicators other than gender that are predictive of individuals leaving the survey without finishing. Given that the samples are nationally representative, and that there is a large within country sample size for both samples, I do not use any re-weighting based on respondent characteristic for the regression analysis.

Table SM.9: Pre-analysis quota for number of Catholic respondents fielded by age, gender, and country.

Country	Age	% of country and sample (M/F)	Estimated N (M/F)	Respondents + 10% cushion (M/F)
Mexico	18-24	0.10/0.10	250/250	275/275
	25-34	0.12/0.13	300/325	330/357
	35-44	0.11/0.10	275/250	302/275
	45-54	0.08/0.09	200/225	220/247
	55-75	0.08/0.09	200/225	220/247
	Subtotal	.49/.51	1225/1275	1347/1402
Brazil	18-24	0.09/0.08	225/200	247/220
	25-34	0.13/0.12	325/300	357/330
	35-44	0.10/0.11	250/275	275/302
	45-54	0.09/0.09	225/225	247/247
	55-75	0.09/0.10	225/250	247/275
	Subtotal	.5/.5	1250/1250	1375/1375

Table SM.10: Pre-analysis quota for number of Catholic respondents fielded by region and country.

Country	Region	% of country and sample (% in region)	Estimated N (total in region)	Respondents + 10% cushion (total in region)
Mexico	Pacifico	0.09	225	247
	Norte	0.18	450	495
	Oeste-Centro	0.17	425	467
	Centro	0.26	650	715
	D.F.	0.17	425	467
	Sureste	0.13	325	357
Brazil	Norte	0.08	200	220
	Nordeste	0.28	700	770
	Sudest	0.42	1050	1155
	Sul	0.14	350	385
	Centro-Oeste	0.08	200	220

Table SM.11: Count toward quota for number of Catholic respondents fielded by age, gender, and country.

Country	Age	Male (N)	Female (N)	% of sample (M/F)	% of target population (M/F)
Mexico	18-24	258	256	10/10	10/10
	25-34	303	325	12/13	12/13
	35-44	276	251	11/10	11/10
	45-54	200	226	8/9	8/9
	55-75	199	226	8/9	8/9
	Subtotal	1236	1284	49/51	49/51
Brazil	18-24	225	202	9/8	9/8
	25-34	325	301	13/12	13/12
	35-44	251	275	10/11	10/11
	45-54	225	225	9/9	9/9
	55-75	225	219	9/9	9/10
	Subtotal	1252	1222	51/49	50/50

Table SM.12: Count toward quota for number of Catholic respondents fielded by region and country.

Country	Region	N	% of sample	% of target population
Mexico	Pacifico	234	9	9
	Norte	454	18	18
	Oeste-Centro	338	14	17
	Centro	692	28	26
	D.F.	433	17	17
	Sureste	331	13	13
Brazil	Norte	201	8	8
	Nordeste	704	28	28
	Sudest	1052	42	42
	Sul	350	14	14
	Centro-Oeste	217	8	8

Table SM.14 displays the summary statistics for each of the treatment groups for each response item, including the number of missing participants, mean, and standard deviation. In every outcome, respondents that receive responsive papal rhetoric have a higher, on average, level of support. The difference between the group means, however, is not statistically different in all outcomes.

Table SM.13: Respondents who attrite during the survey experiment are not descriptively different from those that complete the survey.

	Dependent variable:
	Leave Survey (1=Yes)
Responsiveness$_{Pre-Treatment}$	−0.001
	(0.001)
Church should advocate politically	0.000
	(0.001)
Gender$_{Male}$	−0.010*
	(0.005)
Gender$_{Other}$	0.061
	(0.045)
Constant	0.085***
	(0.024)
Age	✓
Membership Duration	✓
Policy Saliency	✓
Policy Preference	✓
R^2	0.009
Adj. R^2	0.005

Notes: The coefficient estimates from an OLS regresion are shown with standard errors in parentheses. The total number of respondents that contacted us to take the survey equal 5,001, and the number of participants that started the survey equals 4,536. Statistically reliability is reported as $^{***}p < 0.001$, $^{**}p < 0.01$, $^*p < 0.05$.

Table SM.14: Summary statistics of treatment and non-treatment groups by outcome question.

Outcome	Responsiveness treatment	N	Missing	Mean	Standard deviation	Critical value
Responsiveness	No	2479	21	6.30	2.38	0.33***
	Yes	2489	17	6.50	2.36	
Trust	No	2434	66	7.10	2.40	0.38
	Yes	2454	52	7.17	2.37	
Future Volunteerism	No	2482	18	6.39	2.50	0.39
	Yes	2486	20	6.44	2.62	
Future Attendance	No	2482	18	6.73	2.40	0.37*
	Yes	2482	24	6.83	2.43	
Petition Interest	No	2479	21	7.50	2.24	0.30
	Yes	2489	17	7.51	2.32	

Notes: The total number of Catholic respondents equals 5,006. The far right column displays the test statistic from a one-sided t-test, in conjunction with the statistical reliability of the critical value. The one-tailed t-test distinguishes whether the average participant's outcome response is less if they receive discordant messages than the average participant's outcome response if they receive concordant messages (H_0: $x_{\neg Treatment} \geq x_{Treatment}$; H_a: $x_{\neg Treatment} < x_{Treatment}$). The statistical reliability of the critical value is reported as ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$.

SM.2.2 Measuring Respondents' Attention

Given that text is easy to skim, many respondents (especially paid, online work forces) may not fully grasp or comprehend the textual treatment, not due to a lack of true understanding, but due to a lack of attention. As such, I employ an open-ended manipulation check to measure how attentive respondents are to the task at hand, while taking into account the content of the textual framing that respondents view (Ziegler 2022).

The process begins by asking respondents to "Please briefly rephrase the selected quotes you read on the previous page" after respondents are provided text as part of the treatment. I then create a measure of textual similarity between respondents' answers and the text that respondents viewed as part of the experimental treatment. To create the indicator of document similarity, I utilize various n-gram measures.

The first distance measure I employ, the Jaccard distance, is typically used for duplicate detection and measures the proportion of common root words to unique root words in both documents, $d_{Jaccard(doc_1,doc_2)} = 1 - \frac{doc_1 \cap doc_2}{doc_1 \cup doc_2}$. The distance is calculated as the size of the intersection divided by size of union of two sets, or in other words, it indicates the "unique q-grams in two strings and compare[s] which ones they have in common" (Van der Loo 2014, 118).

I also consider the cosine distance, such that any given document (written recall by each respondent) is a sparse vector, and the overlapping angle (or similarity) between that respondent's written recall and the text that respondent viewed as the treatment is $d_{Cosine(doc_1,doc_2)} = 1 - \frac{doc_1 doc_2}{\|doc_1\|\|doc_2\|}$. This allows for a more nuanced measure of content overlap between documents.

For each respondent, therefore, I calculate the two measures of how similar the recall of each respondent is to the actual treatment text that they observed. Figure SM.4 highlights the Jaccard distances for all respondents in both Mexico and Brazil. For interpretation, both distance measures are bounded from 0 to 1, such that 0 corresponds to no overlap ($doc_1 \cap doc_2 = \emptyset$, or doc_1 and doc_2 have no q-grams in common), and 1 equals full overlap ($doc_1 \cap doc_2 = doc_1 \cup doc_2$).

In each sub-figure, two points have been selected and are meant as examples to highlight that responses closer to zero are in fact less discernibly similar to the text they viewed as the treatment, at least subjectively to a human audience. Since each distance captures different measures of proximity, I take the average of the two measures (Jaccard and cosine), and use the mean similarity measure of each respondent as an additional indicator to re-estimate the regression presented in the manuscript. The results are shown in Figure SM.5 and Figure SM.6, and do not differ substantively or statistically from those in the manuscript, suggesting that a respondent's lack of attention does not impact their potential responses to the outcome questions (neither the estimated interaction effect changed, nor was the indicator for attention itself statistically reliable).

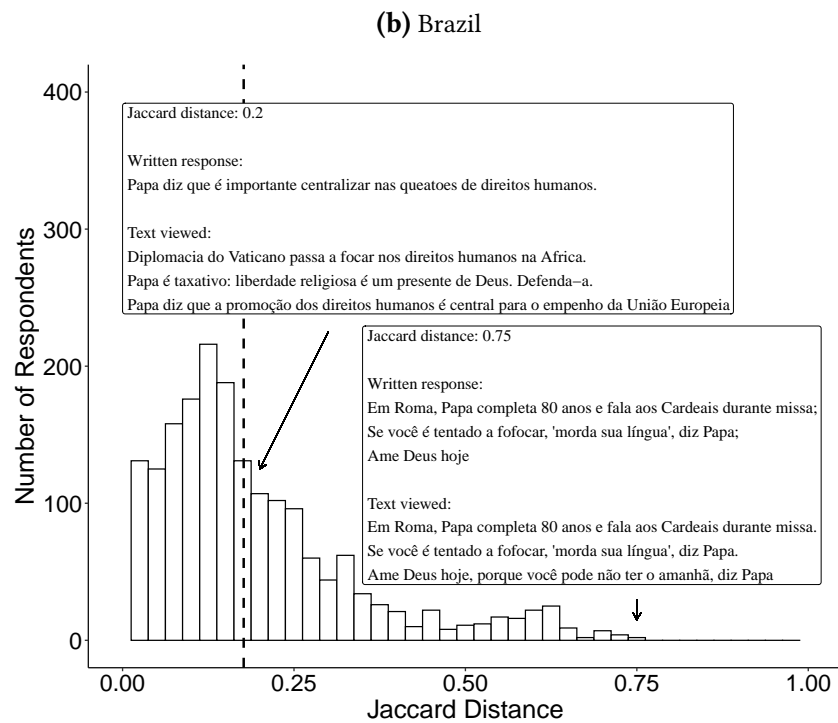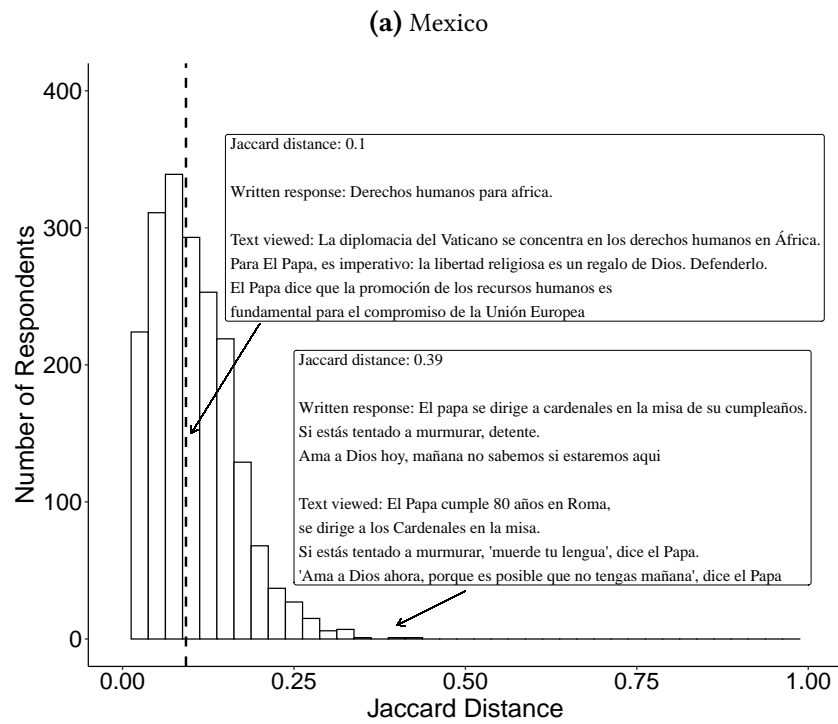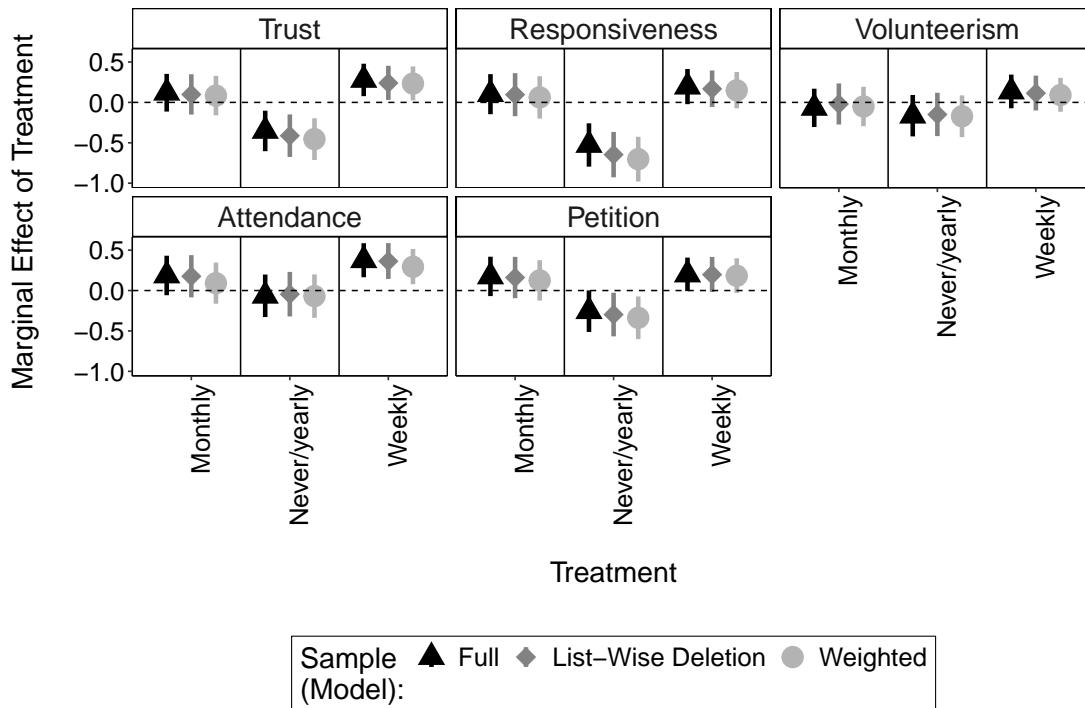**Figure SM.4:** Distribution of Jaccard distance measures for all respondents in Mexico and Brazil.

(a) Mexico

Jaccard distance: 0.1

Written response: Derechos humanos para africa.

Text viewed: La diplomacia del Vaticano se concentra en los derechos humanos en África.
Para El Papa, es imperativo: la libertad religiosa es un regalo de Dios. Defenderlo.
El Papa dice que la promoción de los recursos humanos es
fundamental para el compromiso de la Unión Europea

Jaccard distance: 0.39

Written response: El papa se dirige a cardenales en la misa de su cumpleaños.
Si estás tentado a murmurar, detente.
Ama a Dios hoy, mañana no sabemos si estaremos aqui

Text viewed: El Papa cumple 80 años en Roma,
se dirige a los Cardenales en la misa.
Si estás tentado a murmurar, 'muerde tu lengua', dice el Papa.
'Ama a Dios ahora, porque es posible que no tengas mañana', dice el Papa

(b) Brazil

Jaccard distance: 0.2

Written response:
Papa diz que é importante centralizar nas queatoes de direitos humanos.

Text viewed:
Diplomacia do Vaticano passa a focar nos direitos humanos na Africa.
Papa é taxativo: liberdade religiosa é um presente de Deus. Defenda−a.
Papa diz que a promoção dos direitos humanos é central para o empenho da União Europeia

Jaccard distance: 0.75

Written response:
Em Roma, Papa completa 80 anos e fala aos Cardeais durante missa;
Se você é tentado a fofocar, 'morda sua língua', diz Papa;
Ame Deus hoje

Text viewed:
Em Roma, Papa completa 80 anos e fala aos Cardeais durante missa.
Se você é tentado a fofocar, 'morda sua língua', diz Papa.
Ame Deus hoje, porque você pode não ter o amanhã, diz Papa

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Figure SM.5: Marginal treatment effects by church attendance and sample.

Notes: The figure plots marginal effect of the treatment measured by the change in the predicted level of support among the outcome categories. The mean marginal effects is represented by the solid point, while the 2.5%-97.5% percentiles of the sampling distributions are designated by the vertical lines. The marginal effects of each country are generated from 10,000 simulations that use asymptotic normal approximation to the log-likelihood to estimate the first difference for each category of attendance.

Figure SM.6: Distribution of average marginal treatment effects by church attendance for respondents that likely absorbed the treatment and those that did not.
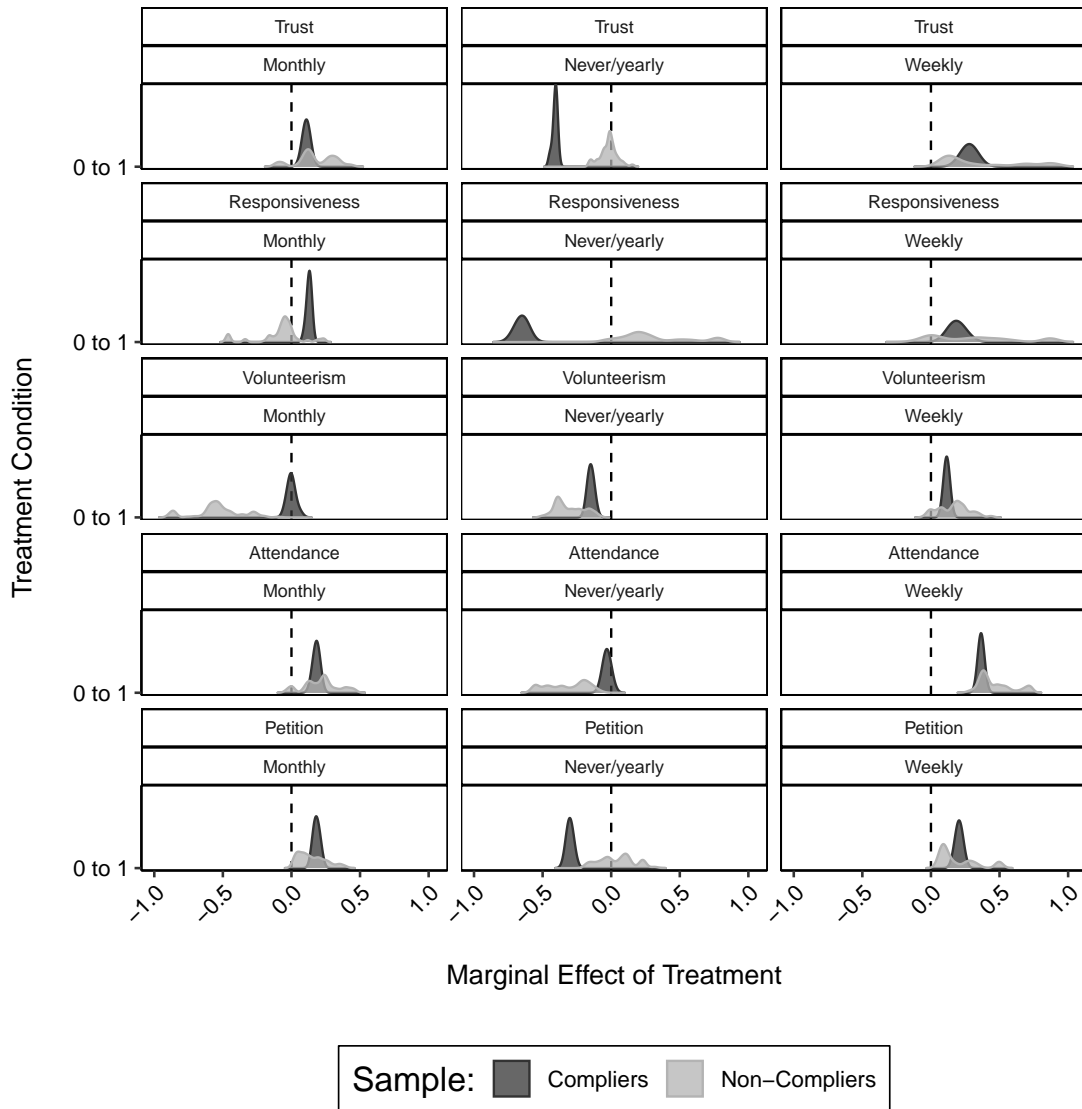
Notes: The figure plots the median marginal effects of respondents that "passed" the manipulation check. The vertical lines represent the 2.5%-97.5% percentiles of the sampling distribution of the average marginal effect for compliers and non-compliers. Each distribution consists of $N = 100$.

SM.2.3 Robustness of Regression Results

Table SM.15 displays the full estimated coefficients of all the models presented in the first set of regressions with an interaction between respondent church attendance and receiving papal responsiveness. See the manuscript for further details on the interpretation of these models. Table SM.16 also provides the estimated coefficients from the full model including a triple interaction between church attendance, responsiveness, and agreement with the Church. These are the full estimated coefficients from the models used to construct Figure 6 in the manuscript, which showcases the heterogeneous effect of responsiveness when accounting for whether individuals agree or disagree with the Church on their most salient issue. As mentioned in the manuscript, Figure SM.7 shows that correlation between attendance and agreement is low.

Figure SM.7: Low correlation between Catholics' political preferences by issue area and church attendance.
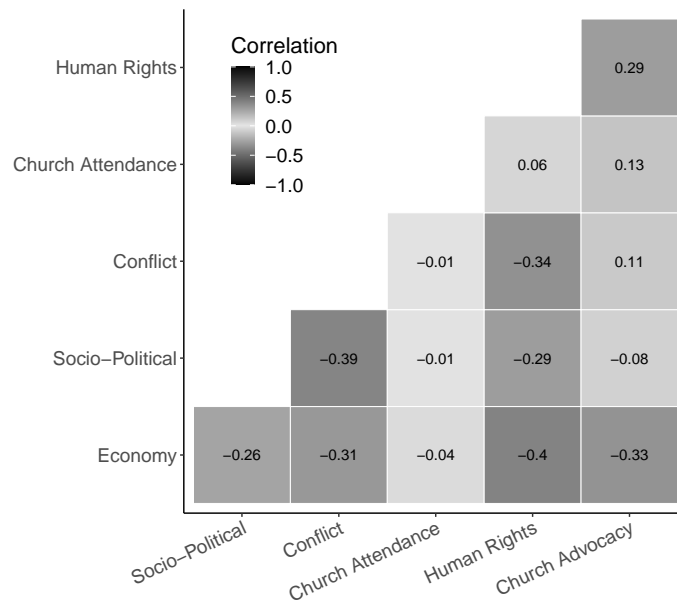
Table SM.15: Predictors of organizational trust and participation among Catholic survey respondents using the binned categories for duration of membership.

	(1) Trust	(2) Trust	(3) Responsive	(4) Responsive	(5) Volunteer	(6) Volunteer	(7) Attendance	(8) Attendance	(9) Petition	(10) Petition
					Outcome:					
Responsive papal messaging	−0.14	−0.14	0.03	0.03	−0.25*	−0.25*	−0.40***	−0.40***	−0.10	−0.10
	(0.11)	(0.11)	(0.12)	(0.12)	(0.11)	(0.11)	(0.12)	(0.12)	(0.12)	(0.12)
Attendance (Monthly)	0.54***	0.59***	0.46***	0.54***	1.16***	1.18***	0.94***	0.97***	0.32**	0.34**
	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Attendance (Weekly)	1.12***	1.20***	0.95***	1.07***	1.61***	1.65***	1.69***	1.74***	0.48***	0.52***
	(0.10)	(0.10)	(0.11)	(0.11)	(0.10)	(0.10)	(0.11)	(0.11)	(0.11)	(0.11)
Responsiveness*Attendance (Monthly)	0.21	0.21	0.09	0.08	0.27	0.26	0.44**	0.44**	−0.01	−0.01
	(0.15)	(0.15)	(0.16)	(0.16)	(0.15)	(0.15)	(0.16)	(0.16)	(0.16)	(0.16)
Responsiveness*Attendance (Weekly)	0.28	0.28	0.27	0.26	0.45**	0.45**	0.52***	0.51***	0.17	0.17
	(0.14)	(0.14)	(0.15)	(0.15)	(0.14)	(0.14)	(0.15)	(0.15)	(0.15)	(0.15)
Desired responsiveness$_{pre-treatment}$	0.21***	0.21***	0.20***	0.20***	0.19***	0.20***	0.22***	0.22***	0.11***	0.11***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Church should advocate	0.08***	0.06***	0.05**	0.03*	0.08***	0.07***	0.06***	0.05***	0.18***	0.18***
	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
Duration of membership (6 to 10 years)	−0.00	0.03	−0.22	−0.17	0.41*	0.43*	0.20	0.22	0.19	0.20
	(0.20)	(0.20)	(0.21)	(0.20)	(0.19)	(0.19)	(0.21)	(0.21)	(0.21)	(0.21)
Duration of membership (11 to 15 years)	0.60**	0.64**	0.20	0.27	0.74***	0.77***	0.77***	0.79***	0.13	0.15
	(0.21)	(0.21)	(0.22)	(0.22)	(0.21)	(0.21)	(0.22)	(0.22)	(0.22)	(0.22)
Duration of membership (16 or more years)	0.58***	0.63***	0.06	0.13	0.60***	0.63***	0.46**	0.49**	0.15	0.17
	(0.14)	(0.14)	(0.15)	(0.15)	(0.14)	(0.14)	(0.15)	(0.15)	(0.15)	(0.15)
Age (25-34)	0.01	0.01	0.08	0.08	0.15	0.15	0.08	0.09	−0.02	−0.02
	(0.09)	(0.09)	(0.10)	(0.09)	(0.09)	(0.09)	(0.10)	(0.10)	(0.10)	(0.10)
Age (35-44)	0.08	0.10	−0.05	−0.03	0.17	0.18	0.13	0.14	−0.10	−0.09
	(0.10)	(0.10)	(0.10)	(0.10)	(0.09)	(0.09)	(0.10)	(0.10)	(0.10)	(0.10)
Age (45-54)	0.22*	0.24*	0.12	0.16	0.14	0.15	0.05	0.07	−0.23*	−0.22*
	(0.10)	(0.10)	(0.11)	(0.10)	(0.10)	(0.10)	(0.11)	(0.11)	(0.11)	(0.11)
Age (55-75)	0.30**	0.32**	0.07	0.10	0.00	0.01	−0.24*	−0.23*	−0.34**	−0.33**
	(0.10)	(0.10)	(0.11)	(0.11)	(0.10)	(0.10)	(0.11)	(0.11)	(0.11)	(0.11)
Gender (Male)	0.13*	0.14*	0.12	0.13*	−0.10	−0.10	−0.24***	−0.24***	0.11	0.11
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Gender (Other)	0.77	0.73	0.92	0.86	0.36	0.34	0.19	0.17	1.35*	1.33*
	(0.62)	(0.62)	(0.65)	(0.64)	(0.61)	(0.61)	(0.65)	(0.65)	(0.65)	(0.65)
Preference rank$_{Conflict}$	−0.02	−0.02	−0.01	−0.01	0.01	0.01	0.05	0.04	0.04	0.04
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Preference rank$_{Socio-political}$	−0.02	−0.05	0.04	−0.01	0.02	0.00	0.12**	0.10*	0.07	0.05
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Preference rank$_{Humanrights}$	−0.05	−0.05	0.05	0.05	0.02	0.02	0.09*	0.09*	0.00	0.00
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Policy preference$_{Economy>Environment}$	0.04***	0.06***	0.03**	0.06***	0.02*	0.03**	0.01	0.02	−0.01	−0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Policy preference$_{Redistribution}$	0.03*	0.02	0.02	0.00	0.02	0.01	0.04***	0.03**	0.06***	0.05***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Policy preference$_{Human\ rights}$	0.04*	0.07***	0.02	0.06**	0.06**	0.07***	0.05**	0.07***	0.18***	0.19***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Policy preference$_{School\ prayer}$	0.24***	0.22***	0.25***	0.21***	0.25***	0.23***	0.26***	0.25***	0.07***	0.06***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Policy preference$_{Military}$	0.03**	0.04**	0.01	0.02	0.01	0.01	−0.00	−0.00	0.05***	0.05***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Constant	1.40***	1.56***	1.46***	1.70***	0.60	0.69*	−0.03	0.07	2.23***	2.30***
	(0.32)	(0.32)	(0.34)	(0.33)	(0.31)	(0.32)	(0.34)	(0.34)	(0.33)	(0.33)
Country fixed effects		✓		✓		✓		✓		✓
R²	0.32	0.33	0.26	0.28	0.37	0.37	0.36	0.36	0.18	0.19
Adj. R²	0.32	0.32	0.26	0.28	0.37	0.37	0.36	0.36	0.18	0.18
RMSE	1.95	1.94	2.04	2.02	1.92	1.91	2.05	2.05	2.04	2.03

Notes: Coefficient estimates are from OLS regression models, and standard errors are shown in parentheses. The total number of observations equals 4,431 in all models. The regression models include all of the covariates detailed in the manuscript. Statistically reliability is reported as *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Table SM.16: Dedicated Catholics increase their perceived responsiveness, trust, and participation regardless of whether they receive responsive papal messages.

					Outcome:					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Trust	Trust	Responsive	Responsive	Volunteer	Volunteer	Attendance	Attendance	Petition	Petition
Agreement (Yes)	0.31	0.34	0.01	0.05	0.27	0.28	0.01	0.02	0.22	0.22
	(0.18)	(0.18)	(0.19)	(0.19)	(0.18)	(0.18)	(0.20)	(0.20)	(0.20)	(0.19)
Attendance (Monthly)	0.51**	0.58***	0.47**	0.59***	1.15***	1.18***	0.91***	0.95***	0.36*	0.38*
	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)	(0.17)	(0.17)	(0.17)	(0.17)
Attendance (Weekly)	1.12***	1.21***	0.95***	1.09***	1.71***	1.76***	1.63***	1.68***	0.58***	0.61***
	(0.15)	(0.15)	(0.16)	(0.16)	(0.15)	(0.15)	(0.16)	(0.16)	(0.16)	(0.16)
Responsiveness	−0.10	−0.09	0.09	0.10	−0.06	−0.06	−0.43**	−0.43**	−0.01	−0.01
	(0.15)	(0.15)	(0.16)	(0.15)	(0.15)	(0.15)	(0.16)	(0.16)	(0.16)	(0.16)
Agree with Church*Attendance (Monthly)	−0.23	−0.27	0.16	0.10	−0.02	−0.04	0.02	−0.00	−0.22	−0.23
	(0.25)	(0.25)	(0.27)	(0.26)	(0.25)	(0.25)	(0.27)	(0.27)	(0.27)	(0.27)
Agree with Church*Attendance (Weekly)	−0.09	−0.11	0.03	−0.01	−0.21	−0.22	0.07	0.06	−0.22	−0.23
	(0.24)	(0.24)	(0.26)	(0.25)	(0.24)	(0.24)	(0.26)	(0.26)	(0.26)	(0.26)
Agree with Church*Responsiveness	−0.45	−0.46	−0.36	−0.38	−0.60*	−0.61*	0.02	0.02	−0.48	−0.48
	(0.25)	(0.25)	(0.27)	(0.26)	(0.25)	(0.25)	(0.27)	(0.27)	(0.27)	(0.27)
Attendance (Monthly)*Responsiveness	0.24	0.22	−0.07	−0.10	0.11	0.10	0.41	0.40	−0.23	−0.24
	(0.20)	(0.20)	(0.21)	(0.21)	(0.20)	(0.20)	(0.22)	(0.22)	(0.21)	(0.21)
Attendance (Weekly)*Responsiveness	0.27	0.26	0.16	0.14	0.28	0.27	0.61**	0.60**	0.02	0.01
	(0.19)	(0.19)	(0.20)	(0.20)	(0.19)	(0.19)	(0.20)	(0.20)	(0.20)	(0.20)
Agree with Church*Attendance (Monthly)*Responsiveness	0.24	0.24	0.33	0.34	0.63	0.63	0.22	0.23	0.90*	0.90*
	(0.35)	(0.35)	(0.36)	(0.36)	(0.35)	(0.35)	(0.37)	(0.37)	(0.37)	(0.37)
Agree with Church*Attendance (Weekly)*Responsiveness	0.10	0.10	0.30	0.29	0.48	0.48	−0.18	−0.18	0.46	0.46
	(0.33)	(0.33)	(0.35)	(0.34)	(0.33)	(0.33)	(0.35)	(0.35)	(0.35)	(0.35)
Control variables	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Country fixed effects		✓		✓		✓		✓		✓
R^2	0.33	0.34	0.27	0.29	0.37	0.37	0.37	0.37	0.18	0.18
Adj. R^2	0.33	0.33	0.27	0.28	0.37	0.37	0.36	0.36	0.18	0.18

Notes: Coefficient estimates are from OLS regression models, and standard errors are shown in parentheses. The total number of observations equals 3,851 in all models. The regression models utilize all of the covariates detailed in the manuscript, including age, gender, duration of membership, expected responsiveness from the Church, desired advocacy by the Church, as well as their political preferences. Statistically reliability is reported as $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$.

Second, we can see in Figure SM.7 that there is a low association between attendance and respondents' belief that the Church should be political active regarding respondents' most salient issue. To check whether any heterogeneous is due to infrequent participants' who believe that the Pope should not be engaged in political speech, I re-estimate the regression models including an interaction between respondents' desire for the Church's advocacy (rather than "agreement" with the Church), attendance, and responsive messaging. Figure SM.8 displays the marginal effects for each outcome, which highlights that never/weekly attendees who wish the Church would not advocate politically extend slightly more support to the Church when they receive "non-responsive messaging" versus "responsive messaging". Though the differences are not all statistically distinguishable, this lends supportive evidence that infrequent attendees may specifically decrease their support because they do not want the Church to be politically active.

Figure SM.8: Marginal effects of the triple interaction between church attendance, responsiveness, and desire for Church activism.

(a) Trust

(b) Responsiveness

(c) Attendance

(d) Volunteerism

Responsiveness — No — Yes
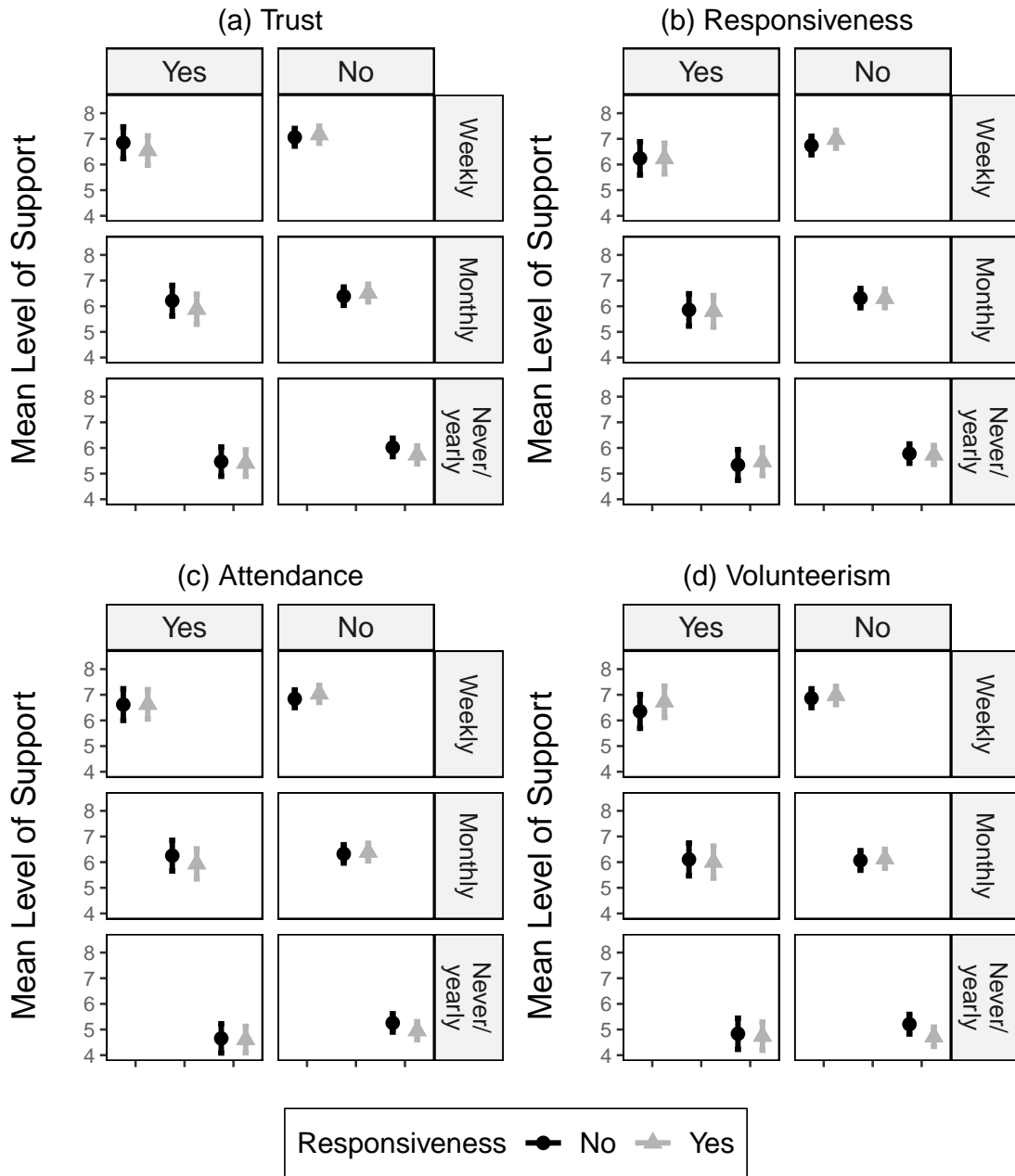
Notes: The point estimates represent the average marginal effect of responsive papal messaging ("concordant" news headline treatment) on organizational trust and participation outcomes by respondents' duration of membership (using the full categories) in the Catholic Church. 95% confidence intervals are displayed. The groups were also not statistically distinguishable from each other in the last outcome ("Petition"), which was omitted.

As a final robustness, I construct an index from the five outcomes using a principal component analysis (PCA) to summarize the responses by reducing the dimensionality of the multivariate outcomes. In other words, I estimate various dimension reductions and investigate which dimensions explain the largest variance. If the outcomes are constructed properly, there should be two underlying dimensions that represent respondents' latent *church* and *political* engagement post-treatment.

Figure SM.9: Left panel:Scree Plot of eigenvalues ordered by magnitude; Right panel: correlation circle highlights sum of cos^2 along each dimension.
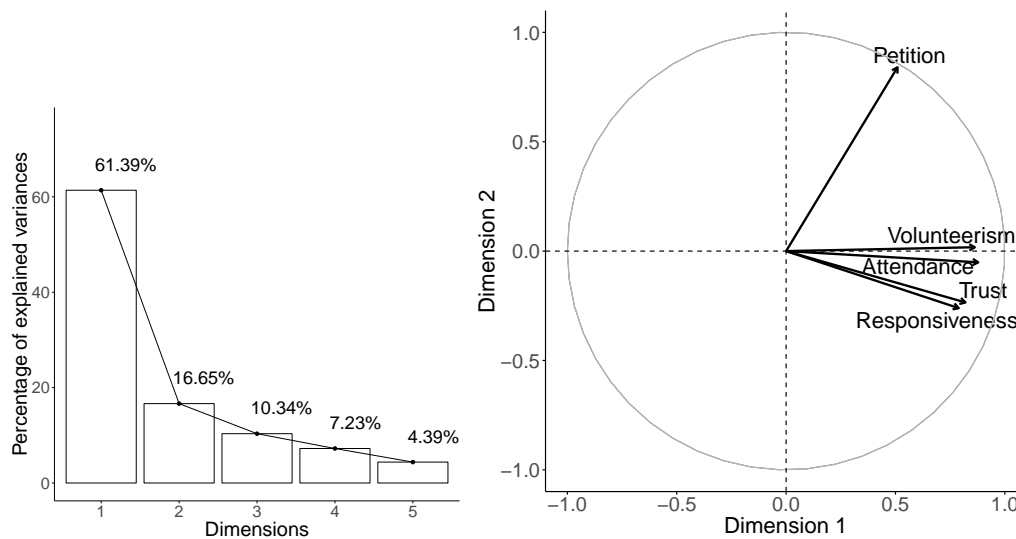
Notes: There is no standard statistic to determine the appropriate number of components, but the general rule of thumb is to determine the number of dimensions at the point beyond which the remaining eigenvalues are relatively small, in this case two.

The scree plot in the left panel of Figure SM.9 displays the estimated eigenvalues, which indicates that there are two strong underlying dimensions. In fact, the first two dimensions account for nearly 80% of the cumulative variance. Moving forward, using the first two dimensions, I investigate more thoroughly which variables are more highly

correlated with a specific dimension. The right panel of Figure SM.9 displays coordinate projections of the outcomes, showing that respondents treat the four outcome questions regarding their engagement in the church similarly (high correlated). Interestingly, the outcome concerning political engagement is nearly orthogonal to the other outcomes, which suggests that it is actually tapping into a different psychological dimension distinct from the religious engagement questions (negatively correlated variables would be positioned in opposed quadrants). If a variable is perfectly represented by only two principal components, the sum of the cos^2 distance on these two PCs is equal to one. All the variables are "good representations" of the underlying dimensions they represent because the lines are further from the origin and closer to the circumference of circle (explain greater variance).

This is further evidenced by how participants respond to the outcomes given that receive responsiveness as part of the treatment. The left panel of Figure SM.10 highlights the trend that we observe and discuss in the manuscript: if a respondent reports that the attend church service more frequently, they are more likely to increase their engagement in the Church. Interestingly, responsive papal messaging does not appear to have a clearly positive or negative effect on political engagement. This largely confirms the results of the main analysis: those members that are already more engaged in the Church drive any positive effect that papal responsiveness has.

Figure SM.10: Marginal effects plots of receiving papal responsiveness on a given respondent's church engagement (left panel) and political engagement (right panel) accounting for their current church attendance.
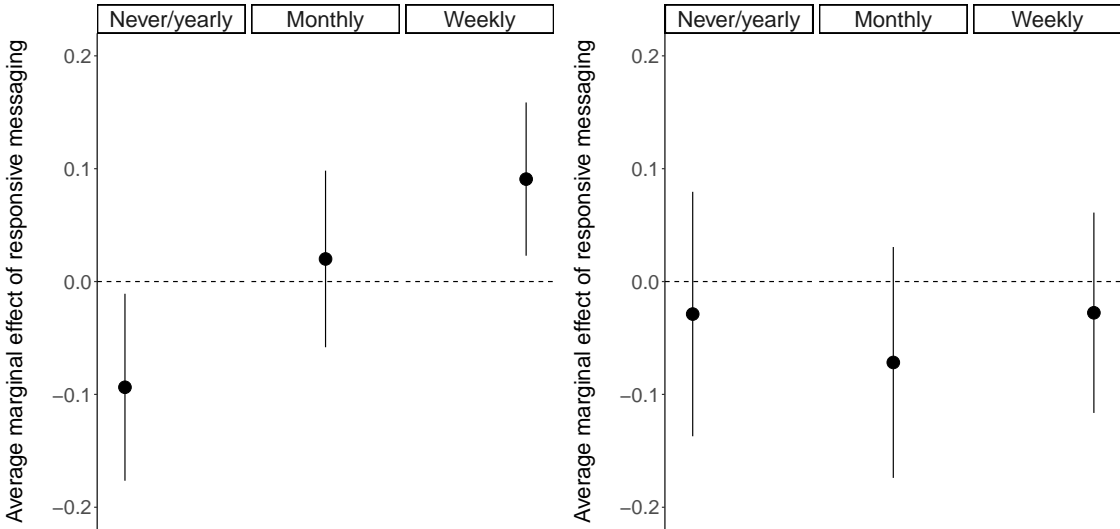
SM.2.4 Question Wording and Translations

The question wording and ordering for the survey experiment in original English is provided in the following sub-section. The translated versions of the survey experiment can be found on my online data archive.

- *Consent*: "We invite you to participate in a research study conducted by investigators from Washington University in St. Louis. The purpose of the study is to learn about attitudes and policy views of Catholics.

  If you self-identify as Catholic and agree to participate, we would like you to read some information about the Church and then take a brief survey. It will take approximately ten minutes to complete. Your responses will remain anonymous.

  All participants who complete the survey will receive compensation and will enter five prize drawings for an Amazon gift card of $100. The prize drawings will take place in August 2018 and will be conducted by our research team. The winners will be informed individually.

  Thank you very much for your consideration of this research study."

  - I agree to participate

  - I do not agree to participate

- *Religious self-identification*: "Do you self-identify as a member of the Catholic church?"

  - Yes

  - No

- *Age*: "How old are you?"

    - Less than 18

    - 18-24

    - 25-34

    - 35-44

    - 45-54

    - 55-75

    - Over 75

- *Demographic information (question order randomized)*:

    - "How do you identify your gender?"

        * Female

        * Male

        * Other

    - "What region do you live in?"

        * Brazil

            · Norte

            · Nordeste

            · Sudeste

            · Sul

            · Centro-Oeste

* Mexico

  · Pacifico

  · Norte

  · Oeste-Centro

  · Centro

  · D.F.

  · Sureste

- *Membership information (question order randomized)*:

  - "How long have you considered yourself a member of the Catholic church?"

    * 0 to 5 years

    * 6 to 10 years

    * 11 to 15 years

    * 16 years or more

  - How frequently do you attend Catholic mass?

    * At least once a week

    * At least once a month

    * At least once a year

    * Never

- *Pre-treatment preference ranking (choice order randomized)*: "Please rank the relative importance of these issues to you from 1 (Not at all important) to 4 (Extremely important)."

- Economy

- Human rights

- Socio-political issues

- Violence/conflict

• *Pre-treatment preferences toward Church (question order randomized)*:

- "How strongly do you agree or disagree with the following statement [1-10]:

    'The Church should advocate on issues related to "[insert most salient issue from previous question]".'"

    10 Strongly disagree

    5 Neutral

    1 Strongly agree

- "On a scale from 1 (Not at all important) to 10 (Extremely important), how important is it to you that the Church responds to the needs and concerns of its members?"

    1 Not at all important

    10 Extremely important

• *Pre-treatment policy preferences (choice order randomized)*: "For each of the following statements, please indicate how strongly you agree or disagree from 1 (Strongly disagree) to 10 (Strongly agree). 'It is important to...'"

- "...redistribute income from the wealthy to the poor through taxation and subsidies."

- "...promote and defend human rights."

- "...maintain military power."

- "...permit prayer in public schools."

- "...relax environmental regulation to stimulate economic growth."

- *Pre-treatment instructions*: "On the next page, you will be presented with three news headlines summarizing some recent statements that the pope has made. Please read the statements and answer the proceeding questions. You will be able to advance to the next page after 10 seconds."

- *News headline treatments*:

  - **Conflict**:

    * "Pope pleads for end to 'homicidal madness' of terrorism" (Dec 20, 2016).

    * "Pope meets with Colombian leaders in wake of peace deal" (Dec 16, 2016).

    * "Let's unite against war and violence, Pope urges at Roman synagogue" (Jan 17, 2016).

  - **Economy**:

    * "Pope says economy must fight 'throwaway culture'" (Jul 15, 2014).

    * "Generate new models of economic progress, Pope urges business leaders" (May 14, 2016).

* "'Economy of exclusion, inequality caused growth of poverty', says Pope" (May 13, 2016).

  – **Socio-political issues**:

    * "Education and play are key to childhood, Pope tells Cuba, US youth" (Sep 19, 2015).

    * "Holy See backs global health goals, says 'leave no one behind'" (May 27, 2016).

    * "Pope asks: give immigrants compassion, not blame" (Jun 21, 2015).

  Human rights:

    * "Vatican diplomacy zeros-in on human rights in Africa" (Mar 30, 2016).

    * "For Pope, it's imperative: religious liberty is a gift from God. Defend it" (Sep 26, 2015).

    * "Pope says promotion of human rights is central to the commitment of the European Union" (Nov 25, 2014).

  – **Control (neutral)**:

    * "Pope marks 80th birthday in Rome, addresses Cardinals at Mass" (Dec 17, 2016).

    * "If you're tempted to gossip, 'bite your tongue,' Pope says" (Jan 15, 2017).

    * "Love God now - because you might not have tomorrow, Pope says" (Jan 12, 2017).

* *Attention check*: Please briefly rephrase the selected quotes you read on the previous page:

- *Outcome responses (question order randomized)*: "Please indicate how strongly you agree or disagree with the following statement from 1 (Strongly disagree) to 10 (Strongly agree):"

  - "I trust the Church."

    1 Strongly disagree

    5 Neutral

    10 Strongly agree

  - "The Church is responsive to its members' needs and concerns."

    1 Strongly disagree

    5 Neutral

    10 Strongly agree

  - "I plan to attend more church services in the future."

    1 Strongly disagree

    5 Neutral

    10 Strongly agree

  - "I want to volunteer through the Church more in the future."

    1 Strongly disagree

    5 Neutral

    10 Strongly agree

  - "Would you like to learn more about a political petition related to '[most preferred issue]'?"

1 Strongly disagree

5 Neutral

10 Strongly agree

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