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Abstract

Test paper

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Independent Media, Propaganda, and Religiosity: Evidence from Poland[*]

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Abstract

Can mainstream media affect religious behavior? We study the effect of a drastic change in the media landscape on religious participation in Poland, a country with a predominantly Catholic population. Before 2015, news on mainstream public and private media had a similar moderately-liberal slant. In 2015, a right-wing populist party PiS came to power and took control of the editorial policy of public media, introducing a considerable pro-government and pro-Church bias. A private network TVN became the main source of freely-available independent news on TV. In a difference-in-differences setting, we exploit spatial variation in independent TV reception, available in 71% of municipalities, and the overtime change in the content of state TV, available almost everywhere. We document that, after PiS came to power, municipalities with access to independent TV continued to follow a long-term declining trend in religious participation, while municipalities with access only to state TV experienced a reversal of this trend. Using a large-scale online RCT, we examine the effects of exposure to different types of content about the Church available in Poland only via independent media. We show that exposing stories about the exchange of favors between the Church and PiS party and about the sexual abuse of children by priests decreases trust in religious institutions. Observational data analysis shows that the effects of TV are stronger in rural and more religious municipalities. This is corroborated by the experiment which also shows stronger effects for religious and rural respondents and those who have not been exposed to stories covered by independent media.

1   Introduction

Historically, the Catholic Church advocated control over the press to promote Church values and popularity. In an encyclical *Mirari vos*, Pope Gregory XVI (1831–1846) claimed that the freedom of the press should be "abhorred and anathematized" and Pope Pius IX (1846–1878) called it "intrinsically evil" (as quoted by Hasler, 1981, p. 43, p. 109). Starting in the 20th century, the official rhetoric of the Church has changed to become more aligned with modern democratic values. Pope Francis (1936–), for instance, embraced media freedom as a fundamental right (Pullella, 2019). Concurrent to the change in Church's attitude toward media pluralism, one can observe a general secularization trend in many European Catholic countries. Could the decrease in religiosity be, at least in part, related to how the Church is portrayed in the media?

This paper, to the best of our knowledge, is the first to study how the availability of media that criticizes the Church affects the popularity of the Church. We estimate the effect of a change in media landscape on religious participation using a quasi-natural social experiment that took place in Poland, one of the most religious countries in contemporary Europe. It occurred as a result of the electoral victory of the radical right-wing populist party Law and Justice, PiS (for *Prawo i Sprawiedliwość*). Before PiS came to power, all major mainstream news media, both public and private, maintained editorial policies independent from the government and had similar coverage of the government and the Church. After its victory in 2015, PiS took many steps in the direction of subverting democratic institutions. One of the most significant steps was taking control of the editorial policy of public media outlets. As a result, formerly public and now *de facto* state media, including the largest state TV network *Telewizja Polska* (TVPolska), launched bold pro-government and pro-Church propaganda.[1] This is why, hereafter, we refer to Polish public media as state media.

Only few independent news media outlets remained. Most notably, the two biggest freely-available private TV networks, TVN and Polsat, remained formally independent from the government.[2] As we document in the background section, the foreign-owned TVN has managed to sustain the independent editorial policy throughout, whereas domestically-owned Polsat adopted a (mild) pro-government slant in exchange for political and financial favors from the ruling party, leaving TVN as the only source of freely available truly independent news on TV. When TVPolska started to broadcast pro-government and pro-Church propaganda in 2015, the news on independent TV—primarily TVN—criticized Poland's illiberal turn and exposed the growing financial and political ties between the Church and the ruling party. TVN also exposed numerous scandals about child sexual abuse within the Church, which surfaced after 2018 and were largely ignored by the state TV. We document the differences in the content of TV networks over time and between networks using anecdotal evidence as well as systematic

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[1]The official acronym of *Telewizja Polska* is TVP, throughout the paper we refer to it as TVPolska in order to make it distinctly different from the acronym of the independent TV channel TVN.

[2]All three main TV networks: TVPolska, TVN, and Polsat devote a significant part of broadcasts to news and documentaries. TVPolska and TVN produce the two most popular prime-time TV news programs in Poland that had similar ratings before PiS got control over TVPolska; Polsat's news were less popular.

text analyses of their official social-media accounts.

We use the drastic change in the Polish media landscape in 2015 to estimate the effect of access to independent TV on religious participation in an environment dominated by state-led media propaganda. We measure religious participation with the rates of mass attendance and rates of taking Holy Communion at the municipality-level annually between 2009 and 2019. They come from parish censuses conducted by the Institute of Statistics of the Catholic Church. We relate these outcomes to variation in the availability of state vs. independent TV and the change in TV content, initiated by PiS take-over of state media.

We gauge the availability of each main TV network from predicted signal strength calculated from the official data on the location and power of their TV transmitters using the Irregular Terrain Model (ITM) following Olken (2009); Enikolopov et al. (2011); Adena et al. (2015); Durante et al. (2019) and relating the predicted signal strength to data on actual TV reception. TVPolska is available in 90% of municipalities, whereas TVN and Polsat, which share the same broadcasting infrastructure and therefore have exactly the same reception, are available in 71% of Polish municipalities. We use a difference-in-differences methodology relying on the cross-sectional variation in the availability of different TV networks and on the overtime change in the political bias of TVPolska. We use the TV availability measured at the beginning of 2015, just before the PiS victory, to avoid potential concerns with endogenous changes in location or power of transmitters. To account for potential differential effects of PiS victory depending on local characteristics that could correlate with proximity to broadcasting infrastructure (such as population density or local development), in our baseline specification we follow the literature (e.g., Olken, 2009) and control for the interaction of free-space signal strength with post PiS victory period, thus, relying only on the plausibly idiosyncratic variation in TV availability coming from topographic irregularities.

The results yield that, before PiS came to power, trends in religious participation were parallel in municipalities with and without access to TVN and Polsat: the religious participation was slowly declining everywhere. After PiS consolidated its control of state media, the rates of mass attendance stopped falling and of taking Communion increased in municipalities where independent TV was not available, i.e., where there was no TV news alternative to state propaganda. In contrast, in municipalities where independent free-to-air TV was available, religious participation continued to decline. The viewership data show that, after unleashing state propaganda, TVPolska lost viewership disproportionately compared to the independent news networks. At the same time, it is clear that not all of this loss of viewership by state TV was directed to consuming entertainment instead of news. First, we show that TVN gained in ratings after 2015 relative to the overall trend of a decreasing TV viewership. Second, we find no effect of the entertainment TV on religious participation. Third, the effects of having access to independent news on TV are robust to controlling for the availability of the state and entertainment TV. The sharp divergence, caused by PiS victory, in the content of news programs by TVPolska vs. the only TV network that managed to remain truly independent, TVN, is the most likely reason for this effect.

The results are robust to controlling for a wide range of socio-economic, demographic, and historical characteristics of municipalities. Most notably, in the baseline specification, we control for the access to both mobile and stationary internet interacted with year fixed effects. (These data are available only as cross-section.) This is the most important potential confounding factor because the independent news and, more generally, liberally-slanted content continued to be available on the internet even after PiS came to power; and, therefore, independent TV is not the only source of such information. We also control for night-time light density, as a proxy for local economic development, and for the legacy of historical partitions of Poland by three empires interacted with year fixed effects to account for different levels of religiosity in different partitions. A battery of additional checks and falsification exercises confirm the robustness of our results, showing that they are very unlikely to be driven by unobserved confounders. In particular, we conduct the analysis proposed by Oster (2019) and also replicate the results in the matched sample of municipalities that have different TV reception, but are similar in terms of all other observables. We also show that the countervailing effects of the independent TV in light of pro-Church state propaganda on religious participation that we study cannot be simply explained by the effects of the exposure to TVN and Polsat on political views of the electorate. The effect of the availability of TVN and Polsat after PiS came to power on the vote for PiS party in the subsequent elections is small in magnitude and statistically insignificant. We also examine the heterogeneity of the main effect and show that it is stronger among more religious and rural municipalities, consistent with the results of the experiment on the individual-level heterogeneity.

To examine what type of information about the Catholic Church—available only via independent media—affects religiosity, we conduct a large-scale online randomization experiment. We expose randomly-chosen subsets of Polish adult population to two information treatments about: (1) clerical child abuse and the apparent lack of adequate reaction of the Catholic Church leadership to these cases; and (2) close relationship and the exchange of political and financial favors between the ruling party and the Church. In each case, we specify exactly the sources of all pieces of information, which are the independent Polish media. This allows the respondents to verify the web-links that we provide to the sources. In two rounds, i.e., right after the treatments and two to four weeks later, we elicit the attitudes of respondents toward the Church and Church-related behavior and compare them to those of the control group, which did not get any information treatment. The results of the experiment confirm that both types of content lead to a decrease in trust in religious institutions and the intention to go to church in the future. The effect of exposing child sex abuse cases by priests on trust in the Church is larger in magnitude. This treatment also reduces donations to Church-affiliated NGOs. The effects of the treatments are long-lived, i.e., present in the follow-up round and, therefore, cannot be explained by a temporary increase in the salience of these issues caused by the information treatments in our experiment. We show that one of the reasons for why the experiment results are persistent is that—after being exposed to the information about pedophilia scandals in the Church in the first round of the experiment—some participants actively

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searched for the information related to the treatment in the media and on the internet. We also examine individual-level heterogeneity of the experiment's results. The effect of exposure to the stories normally available only on independent media is significantly higher for religious people, residents of small towns or rural areas, and respondents who support PiS or watch state TV, i.e., those who are less likely to consume news from independent media in the first place. In order to validate our experiment, we test for and find no evidence of the Experimenter Demand Effects.

One should exercise caution in generalizing the results of the experiment to the effects of the content of TV news because of the differences in the way the information is presented in our experimental treatments as opposed to actual TV news and in the way the respondents perceive the objectives of the researchers as opposed to journalists. Our experimental design cannot replicate fully the environment of TV news consumption. However, the fact that the heterogeneity results of the experiment are consistent with the analysis of observational data suggests that one can learn from the experimental results. Our findings suggest that the information of the experimental treatments was more novel for a subgroup of the respondents, for whom effects are particularly large, e.g., religious and rural respondents. This implies that these people do not actively search for such information on the internet or on media available under subscription, and they only get exposed to it when free-to-air independent TV is available.

Overall, our findings suggest that, when it was possible, some people turned away from propaganda to independent media, which then significantly affected their religious behavior and trust in religious institutions. The persuasion rate of watching independent rather than state TV, based on our estimates coupled with data on viewership, is 11.8% for the decision not to attend mass and 17.5% for the decision not to take Holy Communion. Conversely, the persuasion rate of TVPolska, when independent TV is not available, is considerably smaller: 4.7% for the decision to attend mass and 2.4% for the decision to take Holy Communion. These effects are large in comparison to the overall secularization trends: we find that in places where independent TV was not freely available, pro-Church state propaganda slowed down the decline in the rate of mass attendance by 28 percent and fully reversed the decline in the rate of taking Communion; the trends continued in places where the independent TV was available.

The experimental results imply that exposure to the information about the lack of response of the Church's leadership to sexual abuse of minors by the clergy leads to a persuasion rate of 7.8% for the decision to choose a non-religious charitable foundation over a religious charitable foundation. In addition, it leads to a three-week-persistent persuasion rates of 7.7% for the intention to stop attending mass every week in the future and of 5.8% for a decreasing trust in religious institutions. In addition, exposure to the information about the exchange of mutual favors between the ruling party and the Church is also associated with a persistent persuasion rate of 7.2% for the decision not to attend mass weekly in the future.

The literature has documented the important effects of media on a wide range of economic, social, and political outcomes (see, for instance, surveys by DellaVigna and Gentzkow, 2010; Enikolopov and Petrova, 2015; DellaVigna and La Ferrara, 2015). There is evidence,

in particular, that entertainment media can affect cultural traits, such as attitudes towards gender, which translate into a change in individual behavior (e.g., Jensen and Oster, 2009; Chong and La Ferrara, 2009; Ferrara et al., 2012; Cheung, 2012; Kearney and Levine, 2015; Banerjee et al., 2019). Yet, so far there is little evidence that media can affect other aspects of deeply-rooted culture, such as religiosity. A recent paper by Buccione and Mello (2020) is an important exception. It shows that the exposure to a private Evangelical Pentecostal-Church TV channel in Brazil has an effect on the size of Pentecostal religious movement and on the behavior promoted by the Church and by this channel.

We contribute to this literature by documenting that in an environment with a widespread propaganda on mainstream government-controlled media, the availability of an independent media can influence religious participation. Importantly, the setting of Poland, a country where the vast majority of the population considers itself religious and Catholicism is one of the most deep-seated cultural and identity-forming attributes (PEW Research Center, 2017), allows to conclude that availability of mainstream media that criticizes the Church may contribute to the secularization trend even in most religious countries. The experiment enables us to test for the individual-level heterogeneity.

Our paper is also related to the work by Bottan and Perez-Truglia (2015), who show that sex scandals in the Catholic Church in the US result in substantial decrease in religious participation in the localities where they occur. Our results suggest that the information about sex scandals in the Church can affect substantially wider audience on the national level and not only in the affected localities if delivered by the mainstream media. Moreover, the Church sex scandals have become a prominent topic of the independent news in Poland only since 2018, whereas the content of the state and independent media diverged right after PiS came to power and this is when one starts seeing the effect of media on religious participation. Wang (2021) shows that religious radio can significantly affect political outcomes if its content is highly politicized. In contrast to this important work, our paper focuses on the effects of non-religious media on the religious outcomes.

The rest of the paper is organized as follows. Section 2 presents background information on religiosity in Poland and on the content of TVPolska and TVN before and after PiS came to power. In Section 3, we present the data, methodology, and the results of the analysis of the observational panel data. Section 4 describes the setup and the results of the experiment. In Section 5, we conclude.

2   Background

In this section, to introduce the context, we briefly describe the high level of religiosity in Poland as compared to other European countries and provide both anecdotal and systematic evidence about the similarity in the content of news by state and private TV networks before PiS came to power and the divergence that occurred after.

2.1 Religion in Poland

Poland is one of the most Catholic countries in Europe and, by a number of measures, the most religious one. According to a report by PEW Research Center (2017), in 2015, 87% of the Polish population self-identified as Catholic. The European Values Study (EVS, 2017) conducted in 2017, reports that 93% of Poles believe in God, compared to 73% average in the other 35 countries surveyed.[3] The European Social Survey conducted in 2018 (ESS, 2018) shows that the share of people who claim that they attend religious services at least once a week is the highest in Poland among 29 European countries: the number for Poland is 45% and the average for the rest of the 28 countries surveyed is 12.2%. (The average results of both the EVS and ESS surveys by country are presented in the Online Appendix Figure A1.) PEW Research Center (2017) also shows that among countries in Eastern Europe with Catholic majority, Poland is the leader in terms of the percentage of people who believe that being Catholic is important for their national identity. 64% in Poland think so, whereas the comparable figures are 58% in Croatia, 56% in Lithuania, and 43% in Hungary.

There is a general long-term trend towards secularization in most Catholic countries, particularly in Europe (PEW Research Center, 2017); and Poland is not an exception. Both religious participation and the share of people who say that they believe in God gradually decline. We illustrate this trend using data from nine rounds of the European Social Survey (between 2002 and 2017) and three rounds of the European Values Study (between 1999 and 2017) in Online Appendix Figure A2. We benchmark data for Poland, with data on other predominantly Catholic European countries, present in the same waves of these surveys.

2.2 TV in Poland

TV remains a very important source of news for Poles, despite an increasing importance of social media. According to a representative survey of the Polish adult population, in 2020, 65% of respondents watched TV every day. An average Pole watched TV for 4 hours and 35 minutes per day. Among those respondents, who watched TV at least sometimes, the average time spent in front of a TV set was 6 hours and 56 minutes per day. Almost 100% of all dwellings in Poland are equipped with a TV receiver.[4] According to the leading Polish operator of terrestrial TV and radio broadcast infrastructure, Emitel, over one third of all households in Poland use only the terrestrial television, others have some access to cable or internet TV.[5]

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[3]On this question, Poland ranks the 7th out of 35 European countries only after Azerbaijan, Georgia, Albania, Romania, Bosnia and Herzegovina, and Montenegro, all of which have non-Catholic majority, making Poland the top among Catholic countries.

[4]Source: http://www.archiwum.krrit.gov.pl/Data/Files/_public/Portals/0/kontrola/program/tv/kwartalne/rynek-telewizyjny-w-iv-kwartale-2020.pdf, accessed May 12, 2021.
See also: https://wyborcza.pl/7,75968,21170158,dlaczego-dla-kaczynskiego-tak-wazna-jest-telewizja-bo-3-mln.html, accessed May 12, 2021.

[5]Source: https://emitel.pl/en/news/telewizja-polska-is-entering-mux-8/, accessed May 12, 2021.

2.2.1 Viewership of the main news programs

There are three main free-to-air TV networks in Poland with large viewership that devote significant part of their broadcast to news: TVPolska, the state-owned network, TVN, a subsidiary of American Discovery Inc., and Polsat, a network owned by a Warsaw-based businessman.[6] TVPolska and TVN are the two main sources of TV news in Poland, followed by Polsat. We illustrate the popularity of these channels in Online Appendix Figure A3, which presents trends in the aggregate viewership of the main prime-time news programs of these three networks aired between 7 and 8 pm—TVPolska's *Wiadomosci*, TVN's *Fakty*, Polsat's *Wydarzenia*. In the beginning of our observation period, in 2009, 84% of all prime-time TV viewers watched one of these three programs. In particular, 31.7% watched TVN, 31.1% watched TVPolska, and 21% – Polsat. These shares continuously declined over time reaching 52% by 2019 for all three programs, with TVN at 21%, TVPolska at 15.7%, and Polsat at 15.5%. An important reason for this overall decline is the expansion of entertainment TV available over the internet and cable as well as the expansion of entertainment free-to-air TV channels.[7] Furthermore, after PiS took control over TVPolska, we observe a relative decline in state TV viewership. Between 2009 and 2015, TVPolska and TVN had exactly the same rankings, with Polsat significantly lagging behind. After 2015, TVPolska lost disproportionate share viewers compared to both TVN and Polsat, such that by 2018 the ratings of TVPolska fell to the level of Polsat, making TVN's Fakty the most popular news program. This is consistent with findings of Durante and Knight (2012), who use data from Italy under Silvio Berlusconi to show that viewers respond to changes in partisan bias in media news by switching between news outlets. Below, we document it in our context.

2.2.2 Content of the state TV news and of the independent TV news

In this subsection, we first summarize ample anecdotal evidence about the change in TV content that occurred as a result of PiS victory, present systematic analysis of the content similarity between TV networks and over time, and then describe briefly the TV coverage of the Catholic Church.

Anecdotal evidence. Most of the observers within Poland and outside agree that when PiS won the parliamentary election in 2015, the government policy regarding all democratic checks and balances, including the freedom of the press, drastically changed. This is reflected in the ranking of Poland in the World Press Freedom Index, which fell from 18th in 2015 (at the

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[6]Each of these networks is a collection of several TV channels with a different focus, but a common owner. Channels that belong to the same TV network and provide any political content have a similar political slant and, typically, use the same transmitting infrastructure. However, only one eponymous news channel in each of the two non-state TV networks, TVN and Polsat, actually is available for free through terrestrial television. As we study the effect of the free-to-air TV, for our purposes, TVN channel and TVN network as well as Polsat channel and Polsat network are the same thing.

[7]We have no data on the cable TV, but we do show that our results are robust to controlling for the signal strength of the main free-to-air entertainment TV platform, taking into account the timing of the expansion of its content. In the baseline specification, we also control for the internet availability interacted with year fixed effects.

moment when PiS came to power) to 62nd in 2020.[8] A report by the Carnegie Europe think tank states: "*[PiS] started violating the Polish constitution and challenging European Union Law. It marginalized the role of parliament, politicized the Constitutional Tribunal, the National Council of the Judiciary (whose task was to ensure the independence of courts and of judges), and the prosecutor's office. It transformed public media into a propaganda organ of the ruling party.*"[9] An American journalist and historian, Anne Applebaum, describes the transformation of TVPolska in an long article in *The Atlantic* as follows: [PiS] "*took over the state public broadcaster, Telewizja Polska; fired popular presenters; and began running unabashed propaganda, sprinkled with easily disprovable lies, at taxpayers' expense. [...] Under Law and Justice [i.e., PiS party], state television doesn't just produce regime propaganda; it celebrates the fact that it is doing so. It doesn't just twist and contort information; it glories in deceit.*"[10]

A British historian and essayist Timothy Garton Ash described recently the difference between TVPolska and TVN's news coverage, by writing: "*If you watched only Polish state television news over the last fortnight, you would have no idea that Poland is currently among the countries doing the worst during the pandemic. According to Bloomberg's Covid resilience ranking, Poland has fallen to 50th place among the world's 53 largest economies, with only Brazil, the Czech Republic and Mexico performing worse.*[11] *But switch on the official news and [...] there are long items about how the government is speeding up the vaccination campaign [...] and how terrible the opposition's record was on public health when it was in power. In other "news," you learn [...] how Christians are being persecuted all over the world and how a grave was recently uncovered showing more victims of wartime German occupation. The propaganda is more extreme but also more skillful than during the last decade of communist rule. Only when you turn to the independent TVN24 news [i.e., a 24-hour version of TVN news] do you see footage of long queues of ambulances waiting outside hospitals, because there are no more intensive care beds, and hear doctors explaining how terrible the public health situation really is.*"[12]

While it is a commonplace that both the content and the tone of TVPolska changed drastically with PiS's ascent to power, it is harder to assess whether the slant of TVN changed post-PiS as well. TVN started to criticize the government for both their words and their actions after the government's authoritarian turn, which could have contributed to the increase in political polarization. In the words of Garton Ash, TVN "*is not BBC-impartial, but it does serious journalism and gives you the other side of the story*" (source: footnote 12).

Some divergence in the news slant of TVPolska and TVN started already after an unex-

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[8]https://rsf.org/en/ranking, accessed May 5, 2021.

[9]See https://carnegieeurope.eu/strategiceurope/84461, accessed May 5, 2021.

[10]Source: https://www.theatlantic.com/magazine/archive/2018/10/poland-polarization/568324/, accessed May 5, 2021. We provide an additional quote from the same article by Anne Applebaum in Online Appendix Section B.

[11]These figures correspond to the Bloomberg's Covid resilience ranking as of April 25, 2021. See: https://web.archive.org/web/20210425035008/https://www.bloomberg.com/graphics/covid-resilience-ranking/, accessed June 21, 2021.

[12]https://www.theguardian.com/commentisfree/2021/apr/08/covid-poland-democracy-media-europe-coronavirus-tax, accessed May 5, 2021.

pected outcome of May 2015 Presidential election, in which the right-wing pro-PiS and pro-Church candidate, Andrzej Duda, was elected president with 55.34% of the total vote in the second round. During this election, the Church actively participated in the election campaign on Duda's side. Such direct political involvement of the Church was unprecedented (Lesniczak, 2016). TVN was more critical than TVPolska of the political support the Church gave the newly elected president. But, the gap in TVPolska and TVN news content has substantially widened after the PiS's narrow win of the October 2015 Parliamentary elections, which allowed PiS to interfere directly in public media.

PiS party also has put pressure on non-state media, including TVN and Polsat. Garton Ash writes: PiS "*has launched a systematic attack on independent media. The methods are straight out of Viktor Orban's playbook in Hungary. Public sector advertising and subscriptions are withdrawn from independent media. All sorts of regulatory chicanery is used against them*" (source: footnote 12). Despite the pressure on private media, TVN managed to stay independent, in part, because of an open support by the US State Department and by the former US ambassador to Poland, Georgette Mosbacher.[13] In contrast, domestically-owned Polsat could not resist the pressure. It remained independent only for about one year. Then, it started broadcasting pro-government news in exchange for political and financial protection from the ruling party (e.g., Dabrowska, 2018). To change the editorial policy, Polsat's owners asked journalists to be careful in expressing anti-government and anti-Church opinions, including on social media, and laid off those who did not comply. The observers, however, note that even after the Polsat's turn to the right, its pro-government slant remained substantially milder than the outright pro-PiS and pro-Church propaganda of the state media.[14]

Similarly to Orban's policy studied by Szeidl and Szucs (2021), PiS secured generous stream of advertising revenues from state-owned Polish companies to Polsat as a remuneration for its shift to the right and punished TVN for remaining independent by withdrawing state advertising, despite the relative growth in TVN's audience. According to a Supreme Audit Office (2018) report, out of the total advertising expenditure of state owned-companies on TV, TVPolska received 41.5%, TVN – 22.3%, and Polsat – 15.8% in 2015 (all other TV channels got 20.4%); by 2017, TVPolska received 59.7%, Polsat – 33.9%, whereas TVN – only 1.6% (all other TV channels got less than 5%). Figure A4 in the Online Appendix visualizes this drastic change by year between 2015 and 2017. It shows that already in 2016, TVN lost while Polsat substantially increased their respective shares of state advertising.

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[13]See, for instance, https://notesfrompoland.com/2020/04/20/american-ambassador-defends-us-owned-station-attacked-as-fake-news-factory-by-polish-state-tv/, accessed May 5, 2021). PiS has made several (so far unsuccessful) attempts to ban foreign ownership of media which is widely regarded as an attack directly targeting TVN (see, for instance, https://www.nytimes.com/2021/08/11/world/europe/polands-media-law-passes.html and https://www.nytimes.com/2021/12/27/world/europe/poland-media-law.html, both accessed September 20, 2022).

[14]We provide links to ample anecdotal evidence of Polsat's pro-government editorial policy in Online Appendix Section B.

Content similarity. There are no transcripts of Polish TV news that go back in time. To conduct a systematic analysis of news content, we scraped tweets from the official Twitter accounts of each of the three main TV networks and their respective prime-time news programs using Twitter API. As tweets contain headlines with only a short description of the actual news programs, the differences in the content of Twitter accounts does not fully reflect the differences in the content of the actual news. However, if the topics and headlines of TV networks differ, one should expect this to translate into differences in the content of their Twitter accounts. We use the official accounts of the three main TV networks: @tvp_info and @WiadomosciTVP for TVPolska; @tvn24 and @faktytvn for TVN; and @PolsatNews.pl and @WIOwPN for Polsat. We downloaded all 871,475 tweets from these accounts that were published in ten years between 2012 and 2021 and were not deleted by 2022. At least one of the Twitter accounts of TVPolska and TVN was active well before 2012, therefore, we can analyze their content between 2012 and 2021. In contrast, Polsat's accounts started to generate content regularly only in 2016.[15]

Using the tweets, we build indices of content similarity between each pair of TV networks in each year and also measure how the content of each of the TV networks changed over time.[16] Figure 1 presents the results. Consistent with the anecdotal evidence presented in the previous subsection, Panel A shows that, before PiS came to power, the content of the Twitter account of TVPolska had remained relatively constant over time, and it has changed drastically after PiS came to power. In contrast, TVN's twitter account remained relatively similar to its own content in 2014 both before and after PiS victory in 2015. In Panel B, we present the similarity indices calculated for each year between TVPolska account, on the one hand, and the two main private TV channels, on the other hand. Interestingly, the content of Polsat Twitter was also rather different from TVPolska, despite the consensus among observers that Polsat has pro-government news. Online Appendix Figure A5 presents the similarity of Polsat to TVN and to itself in 2016. It shows that accounts of Polsat and TVN were much closer to each other than those of Polsat and TVPolska.

We illustrate the differences in the content of TVN and TVPolska by calculating the relative frequency of mentions of topics sensitive for the Polish government by the Twitter accounts of these TV networks. For example, during the pandemic, COVID-19 was mentioned, on average, 19.4% more often by TVN than by TVPolska. During the pick of the migrant crisis on the Poland-Belarus border, TVN mentioned this topic 31.2% more than TVPolska, as TVN

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[15]@PolsatNews.pl was registered in 2014, but there were no tweets in 2014 on this account. In 2015, there were only 273 tweets, whereas in 2016-2021, the number of tweets from @PolsatNews.pl each year exceeds 6,000.

[16]To calculate content similarity, we first tokenize all tweets using TweetTokenizer from the standard python library *nltk*. Then, we remove urls, usernames, numeric characters, and non-alphanumeric characters. We also remove stop words in Polish language from https://github.com/bieli/stopwords/blob/master/polish.stopwords.txt (accessed September 15, 2022) and singletons, i.e., words that are present only once in the entire corpus. This yields a vocabulary of 176,165 words. Then, we count the occurrence of each word in twitter accounts of each TV network each year to create a vector, in which each dimension represents a single word and the length represents the number of occurrences of this word. Then, we compute the similarity index between any two of these vectors using the standard cosine measure, i.e., the scalar product of these vectors divided by the product of their norm. This measure is commonly used to compute the similarity between two corpora and varies from 0 to 1.

described the work of NGOs trying to help migrants and the brutality of the Polish guard who pushed migrants back. But when this topic was mentioned by both TV networks, TVN was 38% less likely than TVPolska to call the attempted border crossings "illegal," which was the official government position.

Overall, both the anecdotal evidence and the systematic analysis of the official Twitter accounts of the TV networks and their main prime-time news programs show that (i) before PiS came to power, the news coverage was similar in different networks; (ii) after PiS's victory, the content of TVPolska's news drastically changed. It diverged from both pre-PiS TVPolska and from the most popular independent TV network TVN. Anecdotal evidence suggests that Polsat, even though formally independent from the government, chose to avoid talking about issues unfavorable for the government in exchange for regulatory protection and state advertising.

TV coverage of the Catholic Church. Since PiS came to power, TVPolska has covered the Catholic Church very favorably. Later on, there was even an official agreement signed between TVPolska and the Episcopate. In this agreement, TVPolska has committed to cover rites and other events organized by the Church, and to take the position of the Catholic Church in its programs about moral, social, professional, and cultural issues.[17]

TVN, in contrast, has been critical of the Church's close relationship with the ruling party and exposed scandals within the Church. For example, their main evening news program *Fakty* reported on the extensive state financing of the Church media and business projects. They also showed a reportage on how the prime minister as well as government members and PiS parliamentarians thanked the Church for political favors during the election campaign at the celebration of the anniversary of the Catholic Radio Maryja and rewarded this support with generous state financing of the radio.[18]

In addition, TVN exposed pedophilia scandals in the Church when they became prominent starting in 2018. For example, TVN was the only TV channel that showed the two documentaries "Tell no one" (2019) and "Hide and seek" (2020). These films by Sekielski brothers reveal the crimes of sexual abuse of children confirmed both by victims and the perpetrators themselves. Despite a considerable public attention to the first film "Tell no one"—it got 11 million views on YouTube within 3 days of its release and 20 million within 10 days—TVPolska did not mention it for over one year.[19] Instead, to distract the public's attention from the problem, it financed and showed a film about pedophilia among celebrities.[20] Only, in July 2020, five weeks after the release of the second film, "Hide and seek," Sekielskis' names were first mentioned during a political debate on TVPolska, however, the discussion was spun to focus on the Church's help to the victims of this crime.[21]

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[17]See https://wiadomosci.gazeta.pl/wiadomosci/7,114883,26808723,znamy-tresc-umowy-tvp-i-episkopatu-telewizja-publiczna-odmawiala.html, accessed May 21, 2021.

[18]See, https://fakty.tvn24.pl/fakty-po-poludniu,96/premier-i-ministrowie-na-urodzinach-radia-maryja,889139.html, accessed May 21, 2021.

[19]See, for instance, https://www.lemonde.fr/international/article/2019/05/14/la-pologne-secouee-par-un-documentaire-accablant-sur-la-pedophilie-dans-l-eglise_5461938_3210.html, accessed May 15, 2021.

[20]See https://oko.press/moj-pedofil-wiekszy-niz-twoj/, accessed May 15, 2021.

[21]See https://poznan.wyborcza.pl/poznan/7,36001,26088572,zgorszenie-szukanie-hakow-znany-ksiadz-

In November 2020, TVN showed a reportage entitled "Don Stanislao. The second face of cardinal Dziwisz" containing evidence that cardinal Stanislaw Dziwisz, Archbishop of Krakow and the personal secretary to the Pope John Paul II, took part in covering up cases of sexual abuse by Catholic priests both in Poland and in other countries. Different pro-PiS media, including TVPolska, have argued that exposing pedophilia cases in the Catholic Church is equivalent to attacking the ruling party PiS; and the leadership of TVPolska has stated openly that TVPolska news program is used as a weapon of a counterattack.[22]

Polsat's coverage of the Church has been less critical than that of TVN, but also more balanced than TVPolska's propaganda.

3   TV and Religious Participation:
Evidence from the Observational Data

In this section, we focus on the evidence from the observational data about the impact of media on religious participation. We, first, describe the datasets and, then, present the empirical methodology and results.

3.1   Data

Table A1 in the Online Appendix summarizes all variables used in the analysis of the observational data. Below, we describe their sources and provide details on variable construction.

Religious participation.   We use data on the rates of mass attendance (*Dominicantes*) and taking Holy Communion (*Communicantes*) as measures of religious participation. These data are collected by the Institute of Statistics of the Catholic Church (ISKK, 2020) and available on subscription basis at municipality-year level.[23] The Church representatives count everyone who attends the Sunday mass and who receives Communion in each parish throughout Poland on the third Sunday of October each year. These numbers are aggregated to the municipality level and divided by the number of Catholics in each municipality.[24] There are 2,478 municipalities (*Gminy*) in Poland. We use annual data between 2009 and 2019. Online Appendix Figure A6 visualizes the distribution of these religiosity measures across space in 2009 and 2019, i.e., at the beginning and the end of our observation period. The maps visually confirm the findings of Grosfeld and Zhuravskaya (2015) that differences in religiosity levels across Poland are highly persistent and can be traced back to the partitions of Poland at the end of the 18th century, as the partition borders are visible on the maps. The rates of mass attendance and taking

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atakuje-redakcje-katolicka.html, accessed May 5, 2021.

[22]See https://www.polishnews.co.uk/reportage-don-stanislao-the-other-face-of-cardinal-dziwisz-political-comments/, accessed May 21, 2021.

[23]The same data at diocese level are freely available from the same source: http://www.iskk.pl/badania/religijnosc/211-praktyki-niedzielne-polakow-dominicantes, accessed May 21 2021.

[24]The original data are also divided by 0.82 because the ISKK expects 82% of Catholics to attend mass, on average. This number is calculated as the share of people above 7 and below 75 years old among all Catholics. We adjust the Church attendance and the rate of taking Communion to express them as a share of all Catholics.

Communion collected by the Church are the best available measures of religious participation in Poland. They reflect both the trends and the spatial variation in religiosity. For example, in Online Appendix Figure A7, we present the strong and highly significant correlation between the rate of mass attendance from our data and the three self-reported measures of religiosity from the large biennial nationally representative Polish social survey, Social Diagnosis (Diagnoza), namely, the shares of respondents who: (1) claim that they attend mass every week, (2) say that they pray in times of crisis, and (3) chose "God" in the list of possible answers to the question "What is the condition of a successful life."[25] We winsorize these religious participation measures at the top 1% of their respective distributions because there are occasional outliers with mass participation in excess of the number of registered Catholics due to pilgrimage. Panel A of Figure A8 in the Online Appendix shows that the rate of mass attendance exhibits a downward trend consistent with the data from ESS and EVS presented in Online Appendix Figure A2. It is noteworthy that the rate of taking Communion does not decline suggesting that fervent practicing Catholics are not affected by this general secularization trend.

TV signal.   Each terrestrial TV uses a network of transmitters, called MUX. TVN and Polsat share the same broadcasting infrastructure. A different network of transmitters is used by TVPolska. There is also a separate network of transmitters dedicated to entertainment multiplex, which we refer to as entertainment TV.[26] To proxy for the local exposure to these TV networks, we compute the signal strength and a dummy for having a good signal for each network of terrestrial transmitters at the level of municipality. For the two main transmitter networks that broadcast news, i.e., the one that broadcasts TVN and Polsat and the other that broadcasts TVPolska, we measure signal strength at the beginning of 2015, i.e., right before PiS's victory. The entertainment TV multiplex started to be fully operational only in 2016. We measure its signal in 2019 due to data limitations.

In order to build these measures, we, first, collected information on the exact location and physical characteristics, i.e., height, power, and frequency, of each transmitter (that belongs to each network). The source of these data is the telecommunication infrastructure company Emitel.[27] We follow the literature (e.g., Olken, 2009; DellaVigna et al., 2014; Adena et al., 2015; Bursztyn and Cantoni, 2016; Durante et al., 2019; Wang, 2021) and use the Irregular Terrain Model (ITM) to compute the signal loss using the information about topography and in free space, i.e., ignoring topographical features such as hills and mountains, for every transmitter in each grid cell with 2.5-by-2.5-km resolution. Then, to calculate the signal strength of each transmitter we subtract from the power of the transmitter the measures of the signal loss (with

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[25]The Diagnoza survey data are available here: http://www.diagnoza.com/index-en.html (accessed May 18, 2021). Diagnoza is the main and the largest source of data about the attitudes and wellbeing of Poles (see, for instance, Grosfeld and Zhuravskaya, 2015; Becker et al., 2020). The last wave of Diagnoza survey took place in 2015.

[26]The network of transmitters used by TVN and Polsat is called MUX-2. The one used by TVPolska is called MUX-3. Entertainment TV uses MUX-8.

[27]We web-scraped these data from https://emimaps.emitel.pl/ (accessed May 21, 2021) at two points in time: in 2019 and in 2015, using the WayBack Machine https://archive.org/web/ (accessed May 21, 2021).

and without taking features of the terrain into account) computed with the ITM at the receiving grid cell. As the next step, we calculate the signal strength of each transmitter network (MUX) in each grid cell (again, taking terrain into account and in free space) by taking the maximum signal strength among all transmitters that belong to the same network. Then, we aggregate the measures of the signal strength and the signal strength in free space for each MUX to municipality level by taking the average across grid cells within each minucupality. Figure 2 visualizes the locations of all TVN and Polsat's transmitters as well as TVPolska transmitters in 2015 and their respective signal strengths on the map. It is evident from the figure that TVPolska's signal coverage is much higher as there are many more transmitters used by the TVPolska than used by TVN. Both for the sake of brevity and because TVN is the only truly independent network, as we discuss in the previous section, hereafter, we refer to the signal of the network of transmitters used by TVN and Polsat simply as TVN signal, despite the fact that Polsat also uses the same network. Online Appendix Figure A9 shows the corresponding map of antenna locations and signal strength for the network of transmitters used by entertainment TV channels. Online Appendix Figure A10 presents the residual of signal strength after regressing it on the free-space signal strength for each of the three TV networks.

In Online Appendix Figure A11, we show that between 2015 and 2019 there were very few changes in the transmitter networks used by TVPolska and TVN. We use the signal strength measures as of 2015 rather than time-varying measures (even though the time variation is minimal) in order to avoid the potential endogeneity of infrastructure upgrades by different networks after PiS came to power. The data before 2015 are unavailable. The main physical infrastructure for each of the transmitter networks was built before the beginning of our observation period. However, there was one important change, that took place between 2012 and 2013: transmitters were upgraded from analogue to digital. We have collected data on the exact timing of the analog switch-off in each locality and we verify below that our results are robust to using only the data after the digital transition and to controlling for the timing of the analog switch-off.[28]

Dummies for good TV reception. Based on the signal strength measures, we generate a dummy for having a generally good reception of TV programs for each of the three transmitter networks. The exact relationship between the signal strength and the possibility to watch a TV broadcast without an amplifier depends on many factors including the atmospheric conditions, such as humidity, wind, etc. The engineering guidelines prescribe signals in the range between -45 to -30dB for having a good reception and in the range of -55 to -45dB for a normal-quality reception (see https://otadtv.com/reception/minimum_signal/index.html, accessed September 21, 2022). In order to establish the best cut-off for the case of Polish TV, we use the information from the Polish broadcasting regulator, the National Broadcasting Council, KRRIT (for *Krajowa Rada Radiofonii i Telewizji*) which provides an interactive map with information on

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[28]These data come from: https://telewizja-cyfrowa.com/2011/10/harmonogram-wylaczania-telewizji-analogowej/#more-505, accessed May 21, 2021.

whether any particular grid cell has a TV reception good enough to watch TV with a regular home antenna without any amplifiers for each of the transmitter networks.[29] We regress the dummy for having a good reception from KRITT on the signal strength from ITM across grid cells using a local polynomial regression, which—consistent with the literature (Olken, 2009)—yields a monotonic S-shape relationship presented in Panel A of Online Appendix Figure A12 for TVN network of transmitters. The reason for dichotomizing signal strength is illustrated by this relationship: the variation in the signal strength translates into differences in reception quality only when the signal strength is in the middle range and not when it is already high or low. We find that for every value of the ITM signal strength above -40dB, the majority of grid cells with this value of signal strength have good reception according to the regulator KRRIT and for every value of the signal strength below -40dB the majority of grid cells with that signal strength have bad reception. Based on this calculation, we deem a municipality to have a good TV reception for each TV network if its signal strength is above -40dB. Panel B of Online Appendix Figure A12 presents the density distributions of the signal strengths of TVN and TVPolska across municipalities relative to the threshold for having a good signal.

Viewership. To understand how the variation in signal strength translates into actual viewership, we use panel data on viewership of the main prime-time news programs by TVN and TVPolska (*Fakty* and *Wiadomosci*, respectively). These data are available as a panel at the region and year level between 2009 and 2019. There are 16 regions (Voivodships) in Poland. These data are provided by a major media consulting firm Nielsen (https://www.nielsen.com/pl/en/, accessed May 21, 2021) on subscription basis. There are no viewership data at a more disaggregated level. Table A2 in the Online Appendix presents results of the regressions with the share of viewers of TVN prime-time news among all viewers of the prime-time news on TVN and TVPolska as the outcome variable and the dummy for good TVN reception in Panel A and continuous signal strength in Panel B as the main explanatory variables conditional on the free-space signal strength and year fixed effects. Columns 1 to 3 show that TVN reception and signal are significant predictors of TVN prime-time viewership irrespective of whether we control for TVPolska availability. In Column 4 of Panel A, we also show that after PiS came to power the prime-time viewership of TVN significantly increased (and, consequently, the viewership of TVPolska decreased) in places where TVN was available.

Other variables. We also use a number of socio-economic and historical covariates. We construct measures of fixed and mobile internet availability in 2019 at the municipality level: distance to the optic-fiber broadband infrastructure and access to 3G network (Source: State Office for Electronic Communication, https://www.uke.gov.pl/en/, accessed October 20, 2022). We proxy time-varying levels of economic development of municipalities with the night-time light density per capita following Henderson et al. (2011, 2012) (Source: Top-corrected versions of DMSP-OLS until 2011 (Bluhm and Krause, 2020), https://lightinequality.com/top-lights.html, accessed October 20, 2022; VIIRS Day/Night Band Nighttime Lights after 2011,

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[29]The map is available here: https://www.gov.pl/web/krrit/raporty-kwartalne, accessed March 20, 2022.

annual VNL composites v2.1 https://eogdata.mines.edu/products/vnl/, accessed October 20, 2022). We control for the occurrence of natural disasters within the last 3 years at the municipality level (Source: EM-DAT, The international disasters database, https://public.emdat.be/, accessed October 20, 2022). The data for several socio-economic covariates that are listed below comes from Central Statistical Office of Poland (https://stat.gov.pl/, accessed October 20, 2022): total population, age distribution of the population, revenue per capita, EU subsidies per capita at the municipality level in 2007; education distribution of the population at the municipality level (from the 2002 census); share of population who speaks only Polish at the county level (from the 2002 census); wages as percent of country average at the county level in 2007; share of agriculture among employed at the county level in 2005; industrial production per capita at the county level in 2006. Last, the map of the historical partitions of Poland and the data on access to railway network in 2006 come from Grosfeld and Zhuravskaya (2015). Appendix Section C provides the details about the definitions of variables, sources, the level of aggregation, and the time span for all auxiliary variables used in the observational analysis.

3.2 Determinants of TV signal and the location of antennas

In this section, we explore the correlates of the cross sectional variation in the signal strength of different TV networks. Table 1 presents the results of cross-municipality OLS regressions. As dependent variable, Columns 1 to 4 use dummies for having a good signal strength in the municipality for the two main transmitting networks that we study: one used by TVN and Polsat and the other used by TVPolska. To illustrate the residual variation in TV availability that is the basis of our identification strategy, we account for the proximity to transmitters by controlling for the free-space signal strength. Columns 5 to 8 illustrate the correlates of transmitter locations; they use the dummies for the presence of a transmitting antenna in the vicinity of 10 kilometers for TVN and TVPolska as dependent variables. We regress these variables on a long list of socio-economic, geographical, and historical municipal characteristics. Because the list of potential correlates of the signal strength is long and many of them are strongly correlated, we also use the robust LASSO method (Belloni et al., 2013) to select the most relevant correlates of the TVN's and TVPolska's availability.[30] The full list of considered covariates is as follows: population deciles, dummies for historical partitions of Poland, (log) altitude, share of population employed in agriculture, speed of 3G mobile internet, shares of population with different education levels, (log) night-time lights per capita, share of working age population, (log) distance to optic-fiber internet nodes, railways within 10 km, (log) municipality revenue per capita, (log) EU subsidies to municipality per capita, wages relative to country average, (log) industrial production per capita, rural dummy, share of elderly population, share of population that speaks only Polish, religious participation in 2009, and pre-2009 support for PiS. (Online Appendix Section C provides definitions of each of these variables.) Odd columns present the "kitchen-sink" regressions with all covariates included; even columns show the results of regressions with covariates selected by LASSO. Online Appendix Table A3

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[30]We implement robust LASSO method in Stata using the package provided by Ahrens et al. (2020).

presents a similar analysis of the correlates of the availability of the entertainment TV.

One should expect transmitters to be placed in locations that allow reaching larger numbers of people and more developed areas. This is exactly what we find. Column 1 shows that a good reception of TVN network (available in 71% of municipalities) is significantly more likely in municipalities that are in the top population decile, have higher nighttime light density, are closer to optic-fiber nodes, and have lower share of agricultural employment. Column 2 shows that the only robust significant drivers of variation in TVN availability, once we control for free-space signal strength, are the dummy for the top population decile and the dummy for the historical Austro-Hungarian partition of Poland. The historical partitions matter for TV availability due to local topography, which affects how far the TV waves can travel. There is a higher number of TVN transmitters in mountainous areas in the south-East of Poland that coincide with the Austro-Hungarian partition (see Columns 5 and 6); but the reception in these areas is weaker (Columns 1 and 2). Similarly, if anything, there is a lower reception, but more transmitters in municipalities with higher average altitude. Columns 3 and 4 show that for TVPolska, which has good reception in 90% of municipalities, population size does not matter once we control for free-space signal strength. However, we find significantly smaller likelihood of a good TVPolska reception in agricultural areas. It is also the case for the entertainment TV reception (see Online Appendix Table A3).

The fact that many potential covariates of the good TV reception are not picked up by LASSO highlights the overwhelming importance of controlling for free-space signal strength, which accounts for all characteristics that correlate with proximity to transmitting infrastructure, and for partition dummies, which account for topographical differences that happen to correlate with levels of religiosity (Grosfeld and Zhuravskaya, 2015). In particular, the religious participation in 2009—the initial level of our main dependent variables—is not chosen by LASSO as an important correlate of the good TV signal strength for both any of the TV channels. Yet, as we show in Online Appendix Table A4, mass attendance in 2009 is negatively and significantly correlated with the dummy for good TVN signal strength and the rate of taking Communion in 2009 is negatively correlated with good TVPolska signal strength when no additional covariates are included. The table also shows that this correlation disappears once we condition on the historical partitions of Poland, to account for a much higher level of religious participation in the former Austro-Hungarian partition (Grosfeld and Zhuravskaya, 2015), and on the free-space signal strength, to account for other correlates of the proximity to transmitters (Olken, 2009). Our baseline specification, presented below, controls for partitions-by-year fixed effect and free-space signal strength interacted with post-PiS dummy. In the robustness section, we also show that our results are robust to controlling for the initial levels of religious participation and initial political preferences interacted with year fixed effects as well as a large set of other potential confounders.

3.3 Empirical methodology

Our aim is to estimate the effect of TV news on religious participation. In particular, we explore the divergence in the content between TVN and TVPolska that took place after PiS came to power and started actively interfering in the TVPolska's editorial policy. We utilize the over-time change in the content and the cross-municipality variation in the TV availability which comes from plausibly idiosyncratic variation in terrain in a difference-in-differences setting. The baseline specification uses each of the two measures of religious participation ($Religiosity$)—the rates of mass attendance and taking Communion—as the dependent variable and the interaction between a measure of the availability of the private independent news TV network TVN ($TVsignal$) and a dummy indicating the onset of the PiS control of the government ($PostPiS$) as the main explanatory variable:

$$Religiosity_{mt} = \alpha_1 TVsignal_m \times PostPiS_t + \beta_1 FreeSpaceSignal_m \times PostPiS_t +$$
$$+ \alpha_2 TVsignal_m \times 2015_t + \beta_2 FreeSpaceSignal_m \times 2015_t +$$
$$+ \mathbf{X'_{mt}}\delta + \mu_m + \tau_t + \epsilon_{mt},$$

where subscripts m and t index municipalities ($gminas$) and years. The set of controls includes municipality and year fixed effects (μ_m, τ_t), the interactions of the free-space signal strength of TVN ($FreeSpaceSignal$) with $PostPiS$, the interactions between the TVN availability and TVN signal in free space and a dummy for 2015, the year when the two elections that brought PiS to power took place, which we deem a transition year, and a wide set of other controls ($\mathbf{X_{mt}}$), described below. The baseline measure of TVN availability is a dummy for good reception of TVN in the municipality. We show that the results are robust to using the continuous TVN signal strength. First, for simplicity, we consider TVPolska to have good reception everywhere. As in reality TVPolska is available in 90% of municipalities, we show that the results are robust to flexible controls for its availability. The results are also unaffected by controlling for the entertainment TV. We adjust standard errors to account for spatial and overtime correlation in the data. As a baseline, we allow the error terms ϵ_{mt} to be autocorrelated within each municipality and between different municipalities within 100 kilometers of each other.[31] We also report robustness to alternative assumptions about the variance-covariance matrix.

We show that our results are robust to having no covariates in addition to municipality and year fixed effects and to including an extensive set of controls. The main two potential confounding factors are the level of development and the availability of other sources of information independent from the government. To account for the level of economic development, we include the nighttime light density per capita to the list of baseline controls and the interaction between the free-space signal with post-PiS dummy. To account for potential effects of the presence of alternative sources of information and for the rise of social media during the decade that we study, we flexibly control for both the fixed internet and mobile internet availability,

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[31]We follow Collela et al. (2018) and pick the threshold for the radius of spatial correlation that yields the most conservative standard errors.

interacting the measures of fixed and mobile internet infrastructure with year fixed effects. In addition, we control for the presence of a natural disaster in the municipality within the last 3 years, which is an important predictor of religious participation, as people may turn to religion in the face of disasters (e.g., Belloc et al., 2016; Bentzen, 2019). To account for a potential differential effect of historical legacies on contemporary outcomes (Grosfeld and Zhuravskaya, 2015; Ochsner and Rösel, 2019), in the baseline specification, we control for the partitions of Poland among the three Empires interacted with year fixed effects. We also establish robustness to controlling for the interactions of year fixed effects with: dummies for each population-size decile, the pre-2009 political support for the PiS party, and the 2009 religious participation.

There are two main identification assumptions behind our identification strategy. First, the trends in religious participation should be parallel in municipalities with and without good TVN signal before PiS took control of TVPolska once we account for proximity to transmitting infrastructure by controlling for free-space signal strength (signal strength in free space is inversely proportional to the square of the distance from the transmitter). This assumption is testable. Below, together with the main estimates, we report the results of the event-study specification, which shows the absence of pretrends. We also perform the tests developed by Roth (2020) to calculate the magnitude of the pretrends that we can statistically exclude. The second assumption is that, conditional on covariates, there is no omitted variable that correlates with the TVN's availability and could differentially affect religious participation after PiS came to power. This assumption is untestable, but below, we present the results of the tests in the spirit of Altonji et al. (2005) and Oster (2019) to show that our results are highly unlikely to be driven by such omitted-variable bias. Furthermore, we show that our results are robust to using a sub-sample of municipalities matched on the basis of the observable characteristics, other than the TVN signal strength; these municipalities are balanced in terms of observables by selection into the sample.

3.4   The main results

Baseline, the effect of TVN.   Table 2 presents the baseline estimation results. Panel A focuses on the rate of mass attendance and Panel B – on the rate of taking Holy Communion, as dependent variable. The first five columns use a dummy for good TVN reception as the measure of TVN availability. In Column 1, there are no additional covariates apart from municipality and year fixed effects. In Column 2, we control separately for fixed and for mobile internet access, available only as cross section, interacted with year fixed effects, nighttime light density, and four dummies for the occurrence of disasters in the current year and the previous 3 years. In Column 3, we add the interactions of free-space TVN signal strength with post-PiS and 2015 dummies. In Columns 4 and 5, we show that the results are robust to controlling for partition-specific trends and partition-by-year fixed effects, the latter being our baseline specification. In Columns 6 and 7, we re-estimate the same specifications as in Columns 4 and 5, but with a continuous TVN signal strength measure, as the main explanatory variable. Irrespective of the specification, we find a negative and significant coefficient on the interaction between the

TVN availability and a post-PiS dummy for both outcomes measuring religious participation. Henceforth, we consider estimated presented in Column 5 as the baseline.

The left column of Figure 3 presents the results of the event-study specification on the full sample, in which we interact the dummy for the good TVN signal strength with the full set of year fixed effects, keeping 2014—the pre-election year—as the comparison group. (In all other respects, the specification is equivalent to Column 4 of Table 2.) The top row considers the rate of mass attendance as the dependent variable and the bottom row – the rate of taking Communion. In both cases, we find no differential trends in religious participation between municipalities with a good and bad TVN signal before PiS came to power; trends diverge after PiS came to power. The event-study results also show that the effect is increasing over time.

Because the absence of the pretrends is crucial for the validity of our identification assumptions, we use the methodology developed by Roth (2020) to assess the power of the test for pretrends. We find that we can reject a pretrend with a maximum slope of 27% of the estimated treatment effect for the rate of mass attendance and 29% for the rate of taking Communion.[32] Overall, we conclude that pretrends do not constitute a threat to our identification strategy.[33]

Table A5 in the Online Appendix tests for the heterogeneity of these effects with respect to religious participation at the beginning of the period in 2009, rural vs. urban status of municipality, pre-2009 political support for PiS party, age structure of the population, and availability of fixed and mobile internet. We find that the effects are larger in magnitude in places with higher initial religious participation (significant for both outcome variables) and in rural areas (significant only for the rate of taking Communion). There are no other detectable heterogeneities. As these heterogeneities are at the municipality level, it is hard to interpret them in terms of the individual behavior. We will come back to the issue of heterogeneity at the individual level below when we present the results of the experiment.

The effects of TVPolska and entertainment TV. In Table 3, we show that the results do not depend on whether we control for the signal strength of TVPolska and of the entertainment TV multiplex interacted with post-PiS period. As above, Panel A considers the rate of mass attendance and Panel B – the rate of taking Communion. Column 1 adds the interactions of the dummy for good reception of TVPolska with post-PiS and 2015 dummies and the

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[32]Assume that there is a linear pretrend with slope ζ and that the time-varying coefficients on TV signal are jointly normally distributed. The mean of these coefficients is $(S\zeta, 4\zeta, 3\zeta, 2\zeta, \zeta)$, where S is the average difference in the number of years between the period $t-1$ and each of the period before $t-5$. (Taking into account the fact that $S \leq 5$ and that the pretrend is more easily rejected for larger S, for simplicity, we set $S = 5$.) For a given ζ, we take the variance-covariance matrix from the estimation of the 5 pre-event coefficients in the event study and perform 100,000 random draws from the corresponding multivariate normal distribution. We calculate the percentage of draws with at least one of the pretrend coefficients significant at 10% significance level. Then, we find those ζ for which in 90% of draws at least one of the pretrend coefficients is significant. It is equal to 0.162 for the rate of mass attendance and 0.105 for the rate of taking Communion. Finally, we compare these numbers to the absolute values of the corresponding treatment effects from Column 5 of Table 2, 0.581 and 0.361.

[33]As our treatment is not staggered, a threat of negative weights in the presence of heterogenous treatments does not apply to our set up (e.g., see Borusyak and Jaravel, 2018; Goodman-Bacon, 2018; Sun and Abraham, 2020; De Chaisemartin and D'Haultfœuille, 2020).

interaction of the dummy for good reception of the entertainment TV with post-PiS dummy. (The entertainment multiplex started broadcasting only in 2016, therefore, this interaction is non-zero only starting in 2016.) We also control for the free-space signal of these networks. We find that the effect of having a good TVN signal remains negative and statistically significant and the magnitude of the effect is similar to the one without these additional controls. At the same time, neither the TVPolska nor the entertainment TV has a significant effect. Columns 2 and 3 show that the coefficients on the interactions of post-PiS dummy with TVPolska and with the entertainment TV remain insignificant irrespective of whether we control for free-space signal of these stations also when we exclude the interactions with TVN reception from the list of covariates. The point estimates of these coefficients are negative, however, which could be explained by the positive correlation of TVPolska and entertainment TV signals with TVN signal.[34] This correlation is explained by the fact that all TV networks aim at reaching the more densely populated areas. In Columns 4 and 5, we estimate the same regression on the subsample of municipalities with bad TVN reception in order not to confound the effects of TVPolska and entertainment TV with TVN. Out of 715 municipalities with no good TVN reception, TVPolska has good signal in 468 and entertainment TV in 299 municipalities. We find that, in this subsample, the point estimates of the effects of TVPolska and the entertainment TV are almost everywhere positive, but they are still not significant. This, again, does not depend on whether we control for free-space signal of these networks.

The fact that the estimated effect of TVPolska post-PiS is insignificant does not mean that the state pro-Church propaganda does not have an effect, because much of the effect of state propaganda is absorbed by year fixed effects. First, there may be not enough variation to estimate the effect of TVPolska precisely as there are too few places where it is not available. Second, in those few places where TVPolska has poor reception —and there are no independent sources of information—state propaganda reaches the population through other means. In contrast, there is a meaningful variation in the availability of the entertainment TV multiplex. Thus, the fact that its interaction with post-PiS dummy has no predictive power suggests that our main effect is driven by the consumption of independent news after the content of news produced by state media became dominated by pro-Church and pro-government propaganda.

In Columns 6 and 7, we estimate the effect of TVN on the subsamples of municipalities with good TVPolska reception (Column 6) and with good entertainment TV reception (Column 7). Out of 2,224 municipalities where TVPolska has a good signal strength, 478 municipalities do not have TVN reception; and out of 1,793 municipalities with good reception of entertainment TV, 299 have no TVN reception. Relying on this variation, Columns 6 and 7 show that TVN post-PiS also has a negative and significant effect. Overall, this analysis shows that the effect of TVN is not confounded by the effect of TVPolska or entertainment TV. However, as we described above, TVN uses the same broadcasting infrastructure as the other major private

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[34]The pairwise correlation coefficient between dummies indicating a good reception for TVN and TVPolska is 0.44; and for TVN and the entertainment TV, it is 0.48. Figure A13 in the Online Appendix presents the scatter plots of signal strength measures for different TV networks against each other.

TV channel, Polsat. We cannot empirically disentangle the effects of TVN and Polsat. Yet, as Polsat receives state advertising and observers point to its pro-government slant, it is reasonable to believe that the effects that we estimate are most likely to come from exposure to TVN rather than to Polsat.

3.5 Interpretation and magnitudes

The first differences. This difference-in-differences estimation identifies the relative differences between religious participation in places with and without access to TVN post-PiS. Yet, to understand the mechanism, it is useful to know whether TVN speeded up the decline in religiosity relative to the pre-existing trend in places where it was available or whether TVPolska slowed down or even reversed the decline in religious participation in areas where TVN was not available. In Panel B of Online Appendix Figure A8, we illustrate the raw (unconditional) trends in the two measures of religious participation by showing the aggregate dynamics of the rates of mass attendance and of taking Communion separately in municipalities with good and bad TVN reception. The graphs do show that the trends in religious participation diverged after PiS came to power. In particular, the figure shows that the trends in the rates of attending mass and taking Communion did not change in places with good TVN signal, whereas the they shifted to a different trajectory with higher rates of religious participation in places with bad TVN signal. However, as these graphs are unconditional, it could be the case that some of the dynamics in the outcome variables is due to the effect of control variables. In Online Appendix Figure A14, we present a companion to this figure, but for the residuals of religious participation measures after regressing them on all controls, except for municipality fixed effects. We also report the confidence intervals. The figure shows that, after PiS came to power, both the exposure to the unchecked state propaganda in areas without access to TVN led to an increase in religious participation and the exposure to TVN led to a decline in religious participation. The effect of post-PiS TVN reception is smaller in magnitude than the effect of not having access to TVN post-PiS, especially for the rates of taking Communion, but both effects are statistically significant. This suggests that the independent media plays an important role in countervailing the state propaganda.

Magnitudes. According to the event-study estimates, after 5 years of exposure to state propaganda, i.e., in 2019, the average difference between municipalities with and without access to independent TV—caused by the difference in media environment—was 0.69 percentage points in the rate of mass attendance, equivalent to 2% of its overall mean, and 0.55 percentage points in the rate of taking Holy Communion, i.e., 3.8% of its mean. These magnitudes are substantial, given how persistent religious participation is in Poland. According to the long-term secularization trends in Poland (presented in Panel A of Online Appendix Figure A8), every 5 years, the rate of mass attendance decreased on average by 2.46 percentage points and the rate of taking Communion by 0.29 percentage points. Thus, the pro-Church state propaganda slowed down the decline in the rate of mass attendance by 28% and fully reversed the decline

in the rate of taking Communion, so that it grew by 0.25 percentage points instead of falling, in places where this propaganda was unchecked by the presence of independent TV. This is in contrast to places, where independent TV was available, in which the secularization trends were not affected (see Panel B of Online Appendix Figure A8).

To calculate the persuasion rates implied by our analysis, we use the information on how TV availability translates into viewership. Online Appendix Section D explains the calculation.[35] The persuasion rate of TVN is 11.8% for the decision not to attend the mass and 17.5% for the decision not to take the Holy Communion. It is important to note that the independent TV does not want to persuade viewers to stop going to the Church, but the facts about the Church that it reports do have such an effect. The persuasion rate of state propaganda, when independent TV is not available, is considerably smaller. State media convinces 4.7% of its viewers who did not attend mass before to start doing it and 2.4% of its viewers to start taking Holy Communion. One of the reasons why state-media propaganda is less persuasive than independent media is that it has been losing credibility due to a very aggressive nature of its propaganda.[36]

3.6 Robustness, identification checks, and matching estimation

Additional covariates and clusters. In Table A6 in the Online Appendix, we establish robustness of our results to adding a large number of potential confounders in addition to baseline covariates. As above, the two panels focus on the two main measures of the religious participation. In Column 1, we replicate the results of Column 5 of Table 2 on the sample of municipalities where all additional covariates are non-missing (to use the same sample in the whole table). In Column 2, we add controls for population deciles interacted with year fixed effects. In Column 3, we control for the initial level of religious participation interacted with year fixed effects. In Column 4, instead, we control for pre-2009 PiS political support interacted with year fixed effects. In Column 5, we control for both initial religious participation and PiS support interacted with year fixed effects together. Column 6 includes all of these additional covariates at the same time. The results are robust. Overall, our estimates are very stable across different specifications.

At the bottom of each Panel for the most elaborate specification (Column 6 of Table A6), we calculate Oster's δ, making an assumption that, net of municipality and year fixed effects, the R^2_{max}—the R^2 from a hypothetical regression of the outcome on the treatment and all covariates, including the unobserved ones—equal to $1.3R^2$, where R^2 is from the actual estimation (Altonji et al., 2005; Oster, 2019).[37] The Oster's δ statistics indicate how important

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[35]We combine the estimates reported in Column 5 of Table 2 and in Column 3 of Online Appendix Table A2.

[36]According to a major polling firm, CBOS, news on TVPolska network were considered as trustworthy by 89% of Poles in 2012, 68% in 2017, 62% in 2019, and only 51% in 2021 (see https://wiadomosci.onet.pl/kraj/badanie-cbos-runela-wiarygodnosc-tvp-w-oczach-widzow-wystarczy-spojrzec-na-te-liczby/jtv9z12, accessed September 20, 2022).

[37]Formally, let R^2_{fe} denote the R^2 from a regression with only year and municipality fixed effects (from Column 1 of Table 2) and R^2_{obs} denote the R^2 from a regression with all observables included (from Column 6 of Table A6). Then, we define $R^2_{max} = 1.3(R^2_{obs} - R^2_{fe}) + R^2_{fe}$.

the selection on unobservables needs to be, compared to the selection on observables, to fully explain our results with omitted variable bias. Their magnitude—5.04 for the rate of attending mass and taking 3.07 for the rate of taking Communion—suggests that it is highly unlikely that our results are spuriously driven by unobserved variation, given how much we already control for.

Table A7 in the Online Appendix replicates the main results restricting the subsample to 2013–2019, i.e., after all transmitters switched from analogue to digital TV signal. The results are practically unchanged, as one should expect given the absence of pretrends (illustrated in Figure 3). In the Online Appendix Figure A15 presents the residual scatter plots for the baseline estimations presented in Columns 5 and 7 of Table 2. It is evident from the figures that the results are not driven by outliers.

Finally, in Online Appendix Figure A16, we also present the robustness of the baseline estimates to changing the assumptions about spatial correlation in the data. In particular, we show that the results are robust to allowing for spatial correlation in a radius of any size from zero to at least up to 250 kilometers in addition to the autocorrelation for the full length of the observation period (Conley, 1999; Collela et al., 2018).

Matching. As an alternative identification strategy, we repeat the difference-in-differences analysis in the sample of matched municipalities that do not differ in terms of observable characteristics other than their treatment status, which is the good TVN reception. Panel A of Online Appendix Figure A17 presents the spatial distribution of the dummy for good TVN reception. To build the matched sample, we start with the full sample of all municipalities and compute the propensity score of being treated, i.e., having good TVN reception dummy equal to one, from a probit regression with this dummy as an outcome variable and the following covariates: fixed and mobile internet availability, nighttime light density per capita, 2009 level of religiosity, pre-2009 level of support for PiS, dummy variables for Austro-Hungarian and Prussian partitions, log total population, and the share of working-age population. We use the propensity score to match treated and untreated municipalities. We construct a sample of municipality pairs that are within 50-kilometer distance of each other, such that each treated municipality (with good TVN signal) is matched to the untreated municipality (with the dummy for good TVN signal equal to zero) with the closest propensity score to the treated municipality, subject to the following restriction. For each pair, we impose a minimum distance of one standard deviation in the continuous measure of the TVN signal strength between the treated and untreated municipality. From the matched sample, we exclude all municipalities with a TVN transmitter and all treated-untreated pairs that are not balanced in terms of the presence of a TVPolska transmitter. Panel B of the Online Appendix Figure A17 maps the municipalities in the resulting matched sample with their treatment status. In Table A8 of the Online Appendix, we verify that the matched sample is balanced between treated and untreated municipalities for all covariates used in the propensity score calculation and, in addition, for all covariates that were selected by LASSO as determinants of the good TVN or TVPolska signal

or their transmitter locations presented in Table 1.

As the next step, we use the matched sample to estimate the average treatment effect with difference-in-differences regressions. As some untreated municipalities serve as control for several treated municipalities, we account for this using the appropriate weights in the calculation of the treatment effect.[38] Table 4 presents the average treatment effect in the matched sample and the right Column of Figure 3 presents the corresponding results of the event-study specification. The estimated effects are statistically significant; and the point estimates are remarkably similar in magnitude to the baseline. Furthermore, in the matched sample, we also find that the trends in religious participation between treated and untreated municipalities started to diverge only after PiS came to power.

The effect on voting outcomes. State media's propaganda after PiS ascend to power was both pro-Church and pro-PiS. Could the effects of the exposure to TVN on religious participation be a mere consequence of the shift of voter political support for PiS as a result of the change in media environment, which in turn, had an effect on attitudes toward the church? We cannot rule this out completely. However, it is unlikely. In the Online Appendix we present the results using voting for PiS and turnout as outcome variables using the baseline specification. Table A9 shows the average treatment effects and Figure A18 – the event study specification. We find the negative point estimates of the effect of TVN post-PiS, but it is insignificant and much smaller relative to the mean compared to the magnitude of the results on religious participation. Interestingly, we do see a strong positive effect of TVN Post-PiS on turnout in the parliamentary elections, which is consistent with the mobilization of both supporters and opponents of PiS. If political preferences were a proximate cause of the effects on religious participation, we would have expected to observe larger effects on the voting outcomes.

Overall, the results are robust and are very unlikely to be driven by omitted unobserved confounders. Overall, the analysis of the observational data yields a strong and robust causal countervailing effect of the independent TV in an environment where state TV is engaged in propaganda, such that in places where independent TV is available religious participation is smaller than in places where it is not available.

4   Experimental Evidence

To supplement the results from the observational analysis, we conducted a large online survey-experiment.[39] The aim of the experiment is twofold. First, we want to analyze how different types of information about the Catholic Church that is only available in Poland though

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[38]In particular, the matching estimator of the average treatment effect is calculated using the formula: $\beta^m = \frac{1}{K_{T=1}} \sum_{T_i=1} R_i - \frac{1}{K_{T=1}} \sum_{T_j=0} \left(\sum_{T_i=1} \omega(i,j) \right) R_j$, where i indexes the treated observations and j indexes the control observations in the matched sample, R stands for a measure of religious participation, T is the treatment status, and $K_{T=1}$ is the number of treated observations. The regression weight of each control observation j is given by $\sum_{T_i=1} \omega(i,j)$, where $\omega(i,j) = 1$ if the municipalities i and j are matched as treatment and control, and zero, otherwise.

[39]We obtained the IRB approval at the Paris School of Economics (PSE 2020-007) and pre-registered the experiment at the AEA RCT Registry (AEARCTR-0005767).

independent media affects religious behavior and attitudes. Second, we want to assess the individual-level heterogeneity in these effects. Both of these goals are unattainable using the observational non-experimental data. As we mentioned in the introduction, the benefits of using the experiment come at a cost of the inability to replicate fully the setting of exposure to independent media. Even though we provide the participants with links to all the sources of the information treatments, which do come from the Polish independent media, the fact that the participants receive this information through the experiment instead of the media directly may affect the results. Thus, the results of the experiment should be interpreted in light of these limitations.

As discussed in the background section, TVN has exposed two types of information related to the Church that was not available from state media. Starting in 2018, when the news about pedophilia cases that involved Catholic priests broke in Poland, TVN covered both these cases and the lack of action on the part of the Church's leadership to prosecute perpetrators of these crimes. In addition, TVN shed light on the political and financial favors exchanged between the ruling party PiS and the Church. In the experiment, we exposed random subsets of Polish voters to alternative information treatments and then measured their attitudes toward the Church and Church-related behavior, such as trust in religious institutions and donations to Catholic vs. non-Catholic NGOs.

The survey-experiment was conducted online in Poland by a consortium of two professional survey companies: CBOS and Opinie.pl. 9,416 voting-age Poles were randomly drawn from a pool of over 100,000 subscribers to the Opinie.pl online platform, i.e., individuals who participate in online surveys for pay. After giving an informed consent, participants were allocated to three roughly-equal-size groups: a control and two treatment groups. Randomization was stratified by age × gender × education. In particular, we had 24 strata at the intersection of 4 age groups, 2 gender groups, and 3 education-level groups. In the analysis below, we control for strata fixed effects. Because our sample frame consists of the subscribers to Opinie.pl, by definition, the sample was not designed to be representative of the Polish population at large. The resulting sample has good representation with respect to rural vs. urban status, locality sizes, and regional coverage.

The survey-experiment was conducted in two rounds. The first round took place between April 29 and May 11, 2020. It consisted of a 45-minute survey with an information treatment in the middle that took additional 15 minutes. The survey had three parts. First, all participants answered an extensive set of questions about their socio-economic status, religiosity, and media environment. We use these characteristics to check the balance and to examine treatment-effect heterogeneity. Second, two out of three groups of participants were exposed to information treatments, described below. The third group of participants is the control group which did not get any treatment. Then, we collected the short-term outcomes. For the two treatment groups, it was right after the treatments; and for the control group, right after the pre-treatment questions. Namely, all participants answered a set of questions about attitude toward the Church and behavior. For example, we asked about respondents' trust in different Church

leaders and institutions as well as the intention to attend mass every week. We also gave them an option to choose a charitable foundation to which we subsequently donated money on their behalf. In particular, we provided the list of four foundations, all of which support education of children and adolescents, among which two were affiliated with the Church and the other two were not related to the Church.

The follow-up round took place two to four weeks later. Its aim was to collect a longer-term outcomes on the attitudes and self-reported behavior. In this round, all participants answered a short 20-minute survey about their attitude toward the Church, intended religious participation, and whether in the last two weeks they searched for the information in the media and on the internet about the sexual abuse of children in the Church.[40]

Online Appendix Section E presents the full transcript of the treatments (in Sections E.1 and E.2) and the questionnaires used in both rounds of the survey-experiment (in Sections E.3 and E.4). In Table A10 in the Online Appendix, we summarize all pre-treatment characteristics. Table A11 in the Online Appendix summarizes the outcome variables.

4.1 Experimental Treatments

In this section, we briefly describe the content of the information treatments, all of which comes from the Polish media. To indicate this clearly, at the end of each treatment, we provided participants with references to all sources. Most of this information appeared only in the media that remained independent from the government after PiS came to power.

Treatment 1. One of the three randomly-assigned groups of participants, i.e., Treatment 1 group, was provided with the information about the cases of sexual abuse of children within the Church and the lack of reaction of Church representatives to these cases. In particular, Treatment 1 contained a map of Poland with the localization of the pedophilia cases involving priests-perpetrators. This map was prepared by a Polish NGO and submitted in a report to Pope Francis. The information represented on the map was covered by the Polish independent media. The treatment also included a video interview with a co-creator of this map Agata Diduszko-Zyglewska, in which she talks about cover-ups on the part of the Catholic bishops of the pedophilia crimes perpetrated by priests. Then, the participants read two stories about child-abuser priests who, instead of being prosecuted, were moved between parishes despite the fact that their superiors were aware of the crimes. Finally, Treatment 1 also included a video of an attempted interview by an independent-media journalist with bishop Dziuba of Lowicz diocese asking about whereabouts of one of these two priest-abusers. In the video, the bishop ignores the journalist and does not answer any questions.

Treatment 2. The second group of participants—Treatment 2 group—were asked to read information about the relationship between the political party PiS and the Church. The text of the treatment first quotes from the PiS party manifesto, which assigns the Catholic Church

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[40]Our initial plan was to conduct the first round before and the follow-up after the presidential elections that were originally scheduled for May 10, 2020, but the elections got postponed due to the Covid-19 pandemic.

a role of moral authority in Poland. Then, it describes the example of how Catholic priests express their support for PiS during Sunday homilies, appeal for voting for PiS candidates, and help organizing rallies for PiS on Church's premises. It also provides information about how the PiS party supports Catholic media financially. Finally, the participants were asked to watch a video of a PiS leader expressing gratitude for Church's support during elections.[41]

4.2 Balance

In the Online Appendix Table A12, we report the results of an omnibus test of randomization quality. We regress the treatment status on all pre-treatment characteristics, separately in the two samples: (1) the subsample that includes only the participants of the Control group and Treatment 1 group and (2) the subsample that includes only the participants of the Control and Treatment 2 groups. We test for joint significance of pre-treatment characteristics in explaining the treatment status and find that randomization worked well, even though there are few small imbalances across treatment groups. The prediction of treatment status between the Control and Treatment 1 group yields the p-value of the test of joint significance of all covariates of 0.99; and between the Control and Treatment 2 group, the corresponding p-value is 0.54. The fact that the treatment status cannot be predicted using pre-treatment characteristics is reflected in the extremely low R^2 in these regressions: 0.006 and 0.010. In the Online Appendix Table A13, we also present a series of conventional balance tests, in which we regress each pre-treatment characteristic on two dummies, one for each treatment, and strata fixed effects. These tests confirm the relatively good balance across treatments, despite few significant differences. In the analysis of the treatment effects, we control for the variables that show any misbalance when considered individually, as suggested by Gerber and Green (2012, p. 109). These variables are the household size, consumption of social media, turnout in the European 2019 elections, exposure to the Polish films "Clergy (2018)" and "Tell no one (2019)." As we show below, we find the most robust and sizable effects of the exposure to Treatment 1, whereas all of the misbalances are between the Control group and Treatment 2 group, with the exception of a slight misbalance in the household size between the Control group and Treatment 1 group. Importantly, the household size is uncorrelated with our outcomes of interest.

4.3 Experiment's Average Treatment Effects

Due to the balance of the randomized treatments, the results of the experiment can be measured from a simple comparison of means between post-treatment outcomes. However, as the randomization was stratified, to get correct inference, one needs to control for strata fixed effects.

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[41]To keep the participants engaged and to make the treatments and the experimenter's own attitudes towards the topic inconspicuous, we asked the participants few questions between different pieces of information within each treatment about their attitude towards the facts described in the treatment. With these questions included, the treatment part was not so different from the rest of the questionnaire. In addition, the formulation of these questions provided the participants with a framework to think that one could have different attitudes towards the topic of the treatment. We do not use the answers to these questions in the analysis, as they are treatment-specific and there is no experimental identification. Yet, these questions were useful for hiding the experimenter demands. We discuss the role of Experimenter Demand Effects in Subsection 4.6 below.

Furthermore, the most important determinant of the outcomes of interest is the respondent's religiosity. Even though it is perfectly balanced across treatments (see Online Appendix Table A13), controlling for religiosity substantially increases the precision of the estimated treatment effects. Thus, our baseline estimation of the average treatment effects comes from OLS regressions, in which we regress outcome variables on the treatment status dummies, controlling for strata fixed effects, dummies for each of the five possible answers to the pre-treatment question "Independently of participating in religious practices, do you consider yourself as a religious person?" and, as mentioned above, for few variables that are not balanced across treatments when considered individually.

First round's outcomes. Figure 4 summarizes the results for the two main outcomes of the first round of the experiment, measured right after the treatments: trust in religious institutions and the donations to Catholic foundations. Trust in religious institutions is the first principal component of the questions that measure trust in different religious leaders or institutions; it aggregates trust in the Church, trust in parish priests, in the Episcopate, and in the Pope. The donations to the Catholic foundations is the only outcome of the experiment that reflects the actual choice, rather than a self-reported attitude. We pledged to the participants to donate on their behalf 2500 Polish Złoty—equivalent to $625 in May 2020 or about one half of per-capita monthly nominal GDP—to four Polish charitable foundations that give education scholarships to children and young people. Two of these foundations were affiliated with the Church, the other two were secular. The share of money that each foundation got is proportional to the number of participants who chose that particular foundation. In the follow-up round, we reported to the participants the actual sums that each foundation got and provided the proof of bank transfers. As shown on Figure 4, trust in religious institutions is significantly lower in both treatment groups compared to the control group. However, the effect of Treatment 1, which is about the sexual abuse of children by priests, is substantially and significantly stronger. The donations to the Catholic foundations are also lower in both treatment groups compared to the control group, but the difference is statistically significant only for Treatment 1, despite the fact that we cannot reject the equality of the two treatment effects.

In addition to graphic representation of the experiment's results, we also present the average treatment effects (ATEs) in tables, which allow us to report a number of key statistics on the validity of the estimation with regard to distributional assumptions, multiple hypotheses testing, and attrition.[42] Column 1 of Table 5 focuses on the trust in religious institutions

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[42]All of the ATE tables have the same format. In addition to the coefficients on the treatment dummies and p-values calculated under the assumption of a heteroskedastic error term (presented in parentheses), for each coefficient, we report a set of alternative p-values that correct for the randomization inference and for the multiple hypotheses testing within each broad group of outcomes. First, we report the randomization-t p-value (in curly brackets), which tests the "sharp null hypothesis" according to which all individual treatment effects are zero without making any additional assumptions about the distribution of outcomes (Young, 2018). The other p-values (in square brackets) correct for the multiple hypotheses testing within each broad group of outcomes. The sharpened False Discovery Rate (FDR) q-value (Anderson, 2008) seeks to minimize the number of false rejections, whereas the Familywise Error Rate (FWER) p-value (List et al., 2019) and the Holm-Bonferroni p-value (Holm, 1979) seek to maintain the probability of any false rejections low. To address

as outcome variable. It shows that even with the corrections for the multiple hypotheses testing, attrition, and randomization inference, Treatment 1—which is about sexual abuse of children within the Church—significantly reduced trust in religious institutions in the first round. As far as the effect of Treatment 2 is concerned—which is about the exchange of favors between the Church and PiS party—the significance of its effect survives corrections for randomization inference, attrition, and one out of three corrections for the multiple hypotheses testing, sharpened-q-value, which is reasonable, but less conservative than other methods; it is our preferred correction method. In Column 2, we present the specification tests for the donations to religious vs. nonreligious foundations as outcome variable. The significance of the ATE of Treatment 1 for this outcome survives correcting for attrition, using randomization-t p-value, and using our preferred method of correcting for the multiple hypotheses testing. The effect of Treatment 2 on this outcome is less precisely estimated: the baseline specification is just below conventional level of significance; and the effect is marginally significant with sharpened-q-value correction.[43]

Follow-up round's outcomes. The effect of the treatments in the first round could be explained by a temporary increase in the salience of the issues they describe. In order to test whether there is a longer-term effect that cannot be explained by salience, we conducted the follow-up round. The median number of days between the two rounds is 23 days, the minimum is 14 days, and the maximum is 29 days. Online Appendix Figure A19 presents the distribution of this variable across 7,369 respondents who participated in the follow-up round. Because our experiment was conducted online, the attrition was inevitable. As presented in the Online Appendix Figure A20, 77.4% of respondents from the Control group participated in the follow-up. The respective figures for Treatment groups 1 and 2 are 79.8% and 77.6%.[44]

a potential concern related to the fact that some respondents chose not to answer certain questions, which could introduce an attrition bias in ATE estimates, at the bottom of each table, we report Lee bounds for the treatment effects (Lee, 2009). The bottom row reports p-values from the test of equality of treatment effects of the two treatments.

[43]In the Online Appendix, we present the results for additional first-round outcomes. Table A14 presents the results for each of the components of the trust in religious institutions separately. It shows that Treatment 1 affected all components, whereas Treatment 2 affected only trust in the Episcopate, which is not surprising because Episcopate is featured in this treatment. Table A15 focuses on how the respondents assess the importance of pedophilia problem in the Church. We asked whether the respondents agree that: (1) "the reaction of the Church to these cases is insufficient," (2) "the problem of pedophilia in the Church is exaggerated," and (3) "the news about pedophilia in the Church is a deliberate attack aimed at reducing the authority of the Church." Treatment 1 makes respondents more aware of and concerned about this problem. There is also some, albeit less robust, effect of Treatment 2 on these outcomes. Table A16 focuses on the attitude of respondents to religious education and whether it should be conducted at school or on the parish premises. Treatment 1 raises the share of respondents who think that religious education should be done at school because of a better control of what priests do with the children. Tables A17 and A18 show that Treatment 2 has a significant negative effect on support for PiS, whereas trust in political institutions generally is not affected by either treatment. These results on the political outcomes are in line with the hypotheses outlined in the pre-analysis plan. We consider them auxiliary, as we focus on religiosity outcomes in this paper.

[44]The survey companies expected the participation rate in the follow-up of about 50% based on their experience of marketing research studies. They told us that the respondents were very interested in the study, which was reflected both in the relatively high rate of participation in the follow-up and in the feedback they received after the survey-experiment.

The rate of attrition was significantly smaller in Treatment 1 group than in Control group or Treatment 2 group. In Table A19 in the Online Appendix, we formally test whether this attrition was selective, which could bias the follow-up-round results. We follow Ghanem et al. (2021) and regress the outcomes of the first round, in the absence of outcomes measured before the treatment, on whether the respondents participated in the second round separately for each treatment. Then, we test whether there is a difference in the outcomes for those respondents who did and who did not participate in the follow up for each treatment and find no significant differences. This suggests that the attrition rates were not driven by the effect of the treatments on the respondents' attitudes. In Online Appendix Table A20, we repeat this analysis substituting the first round outcomes by the pretreatment characteristics. Again, we find no difference between those who attrited between the two rounds and those who did not in terms of their pre-treatment characteristics. These analyses strongly suggest that one could be reasonably sure that the treatment effects in the follow-up round are not a result of a selection bias from attrition.

Figure 5 summarizes the results for the main outcomes in the follow-up round. First, it shows that the effect of Treatment 1 on trust in religious institutions persisted until the second round. Second, we see a significant negative effect of both treatments on the intention to attend the mass in the future. Thus, we conclude that the results of the experiment are not solely driven by the temporary rise in the salience of the treatments' topics. In Figure 6, we consider outcomes that help explain why the effects are persistent. The participants of Treatment 1 were significantly more likely to actively search for the information about pedophilia cases among priests in the media and on the internet between the two rounds of the survey. This is presumably because they wanted to verify the information that was provided to them in the treatment. In addition, among the respondents who did not watch the film "Tell no one" before the first round experiment, the participants of both treatment groups were more likely to watch it between the two rounds than the participants of the control group.

Columns 3 to 6 of Table 5 present the formal analysis for the main follow-up-round outcomes. All results significant in the baseline survive all specification tests, with the exception of the two most conservative corrections for multiple hypotheses testing.[45] The fact that we find consistent results in the two rounds suggests there is a real long-term effect of treatments, and in particular of Treatment 1, on the attitude toward the Church. The heterogeneity analysis presented below in Section 4.5 helps understanding the sources of this persistence further.

4.4 Magnitudes and the persuasion rates of the experiment

The point estimates of the coefficients on the dummies for each treatment reported in the table have a straightforward direct interpretation: the ATEs in percentage points. For example, exposure to Treatment 1, on average, leads to a 4.6 percentage-point decline in trust in religious institutions in the first round and a 2.2 percentage-point decline in trust in religious institutions

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[45]In addition, in the second round, respondents were also asked to describe their faith and how many times they went to mass in the last two weeks. We find no significant effects of the treatments on these outcomes.

in the follow-up round, both relative to trust in religious institutions in the control group. It also leads to a 1.7 percentage-point decline in the probability to chose a religious foundation over a non-religious foundation for a chartable donation (in the first round) and to a 2.4 percentage-point decline in the intention to attend mass weekly in the future (in the follow-up round). Treatment 2, on average, leads to a 1.9 percentage-point decline in trust in religious institutions (in the first round) and a 2.2 percentage-point decline in the intent to attend mass weekly (in the follow-up round).

To understand these magnitudes in terms of how this treatment changes respondents' attitudes, we calculate the persuasion rates. The persuasion rate of exposure to information about Church's reaction to the child abuse within the Church is 12.2% for the decision not to trust religious institutions in the first round and 5.8% in the follow-up round. This treatment also results in the persuasion rates of 7.7% for choosing to donate to a non-religious rather than a religious foundation and of 7.7% for the intention not to attend mass weekly in the future. Information about mutual favors between the PiS party and the Church results in persuasion rates of 5.1% for the decision not to trust religious institutions (in the first round) and of 7.2% for the decision not to attend the mass in the future regularly (in the follow-up round). Details of these calculations are presented in Section D.2 of the Online Appendix.

4.5 Heterogeneity

We examine heterogeneity of the experiment's results along the following three dimensions, measured before treatments: (1) whether the respondent considers oneself a religious person (26% of respondents are not religious); (2) whether the respondent lives in rural areas or small towns vs. in large cities (44.8% of respondents live in large cities, i.e., with population greater than 50,000), and (3) whether the respondent is, a priori, more or less likely to be exposed to independent media. For the third dimension of heterogeneity, we combine two pre-treatment characteristics: whether respondent voted for PiS in the past and whether respondent watches TVPolska.[46] We deem those who never voted for PiS and those who do not watch news on TVPolska more likely to have been exposed to independent media prior to our experiment than the rest of the sample (those people constitute 59% of respondents). Figure 7 summarizes the results of heterogeneity in a graphical form for the outcome of trust in religious institutions in each round. In all three dimensions of heterogeneity, we find statistically significant differences in the size of the effect of Treatment 1 on trust in religious institutions in the first round.

Exposure to the information about Church's cover-ups of pedophilia scandals among clergy leads to a significantly larger declines in trust in religious institutions among religious people compared to non-religious people, among residents of small towns or rural areas compared to residents of large cities, and among those who voted for PiS in the past or watch news on TVPolska compared to those who did not vote for PiS and does not watch news on

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[46]If we do not combine voting for PiS and TVPolska news consumption and, instead, treat them separately, the results for each of these two potential dimensions of heterogeneity go in the same direction, but are not statistically significant.

TVPolska. Online Appendix Tables A21 to A23 report the corresponding results. The heterogeneities for trust in religious institutions in the follow-up round tend to go in the same direction, but they are less pronounced. Only one result is significant: the decline in trust in religious institutions as a result of exposure to Treatment 1 is significantly higher for residents of rural areas and small cities as compared to residents of large cities. The only significant heterogeneity of the effect of Treatment 2 is with respect to religiosity level: religious people were significantly more affected by the information provided in this treatment as well.[47]

A plausible explanation is that participants who react more to Treatment 1 are those for whom the information provided in the treatment was new, i.e., they were unaware of the true scope of problem of pedophilia cases within the Church before the experiment, consistent with the fact that Treatment 1 induced some participants to search for information about this problem and to watch the documentary "Tell no-one" after the first round (as shown in Section 4.3). Thus, one can hypothesize that more religious people, those from rural areas or smaller towns, and those who vote for PiS or watch state TV, are less aware of the content available only on independent TV.

These individual-level heterogeneities are consistent with heterogeneities found in the observational data: the effect of availability of independent TV is also stronger in more religious and rural areas. The experiment's heterogeneities shed light on the mechanism behind observational results. The results suggest that, when state media is engaged in pro-Church propaganda, the messages of the independent media about child sexual abuse within the Church might not reach an important part of the population in places where independent free-to-air TV is unavailable. This is because people whose prior beliefs are more in line with state propaganda do not search for alternative information if it is not readily available on TV. In particular, religious people and rural residents continue using free-to-air state TV as their primary source of information despite the fact that this TV is dominated by state propaganda and there are ample possibilities to switch to consuming news on other media, such as, for instance, internet media. As our experiment was administered online, all experiment participants by design had access to the internet; yet, it is evident that some of them were unaware of the child abuse within the Church. The experiment results suggest that when these people are exposed to such information, their reaction is stronger, because this information is novel them.

4.6 Addressing the Experimenter Demand Effects

A potentially valid concern is whether the results of our experiment are driven by Experimenter Demand Effects (EDEs), such as, for instance, the Hawthorne effect (Zizzo, 2010). It is impossible to rule EDEs out completely, as the main ATEs go in the direction of the treatments. Yet, in this subsection, we present evidence suggesting that EDEs are not likely to drive our results.

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[47]Online Appendix Figure A21 visualizes heterogeneity results for other outcomes. Most of them are not statistically significant, but they do go in the same direction as for first-round trust in religious institutions. The heterogeneity is significant only with respect to the type of resident's locality for the follow-up-round outcome of the intent to attend mass weekly in the future.

First, it is important to reiterate that the treatments were formulated in the most neutral way possible.[48] Second, we explicitly test for the importance of EDEs in our experiment by following the methodology suggested by Dhar et al. (2018) (see also Henry et al., 2022). There is one question among those asked before the treatments that can be considered as a measure of "social desirability": "Did you devote last year your time, services, money, cloth or books for charity?" The answers to this question are likely to correlate with the strength of the intrinsic desire of respondents to look good in the eyes of other people, including the experimenters. The share of respondents who positively answered this question is 67%. To test for the EDEs, we examine the heterogeneity of the treatment effects with respect to the answers to this question. If EDEs drove our results, one should expect larger average treatment effects for the respondents who answered this question affirmatively. This is not what we find for any of our four main outcomes. The results are reported in Figure 8, with the full regression output relegated to the Online Appendix Table A24. For trust in religious institutions both in the first and the follow-up rounds, as well as for the choice between religious and non-religious charitable foundations, we find insignificantly smaller treatment effects among participants who positively answered the question about whether they donated time or money to charity in the last year. For the intention to attend mass weekly in the future, the treatment effects are the same irrespective of the answer to the question on self-reported donations. These results are inconsistent with EDEs if self-reported donations are a good measure of social desirability.[49]

To sum up, this evidence suggests that it is very unlikely that there are significant EDEs in our experiment. This is in line with Mummolo and Peterson (2018), who show that EDEs are not common in experiments similar to ours. This is also consistent with the findings of de Quidt et al. (2018), who examine the magnitude of the EDEs and show that they typically are economically small and statistically insignificant even when experimenters explicitly express their demands in the experiment.

Overall, the results of the experiment confirm that both types of information provided by our treatments, which people typically receive through independent media, reduce trust in religious institutions. This effect is larger for more religious people, people from smaller localities, and for viewers of state-TV news or PiS supporters. The effect of providing information about the sexual abuse of children within the Church is persistent, which at least in part is explained by the fact that after being exposed to such information people verify it by reading more about this issue. The results of the experiment corroborate the results on the effect of media on religious participation.

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[48]As mentioned earlier, we asked participants questions within each treatment, which potentially opened up a possibility of different assessment of the content of the treatments. These questions were designed to make the participants engaged with the survey and not feel manipulated during the treatments.

[49]In the Online Appendix Figure A22, we report heterogeneity of results when we further split the sample of respondents who donated to charity last year into those who donated to a religious charity (19%) and to a non-religious charity (81%). As those who donated to a religious charity are predominantly religious, we find a result that is consistent with other results on heterogeneity with respect to religiosity: the treatment effects are the strongest among those who donated to religious charity. Yet, as they are a small minority, the treatment effects for the group that combines those who donated to a religious charity and to a non-religious charity are smaller than for those who did not donate to charity.

5   Conclusion

The main lesson from our analysis is that nonreligious media can significantly affect trust in religious institutions and religious participation, suggesting that it also can have an effect on religiosity, a deeply-rooted cultural trait. State-led propaganda, when unchecked, may result in a boost in religiosity among subgroups of the population. Access to independent media, in contrast, can contribute to a secularization trend playing a significant countervailing role to state propaganda.

We show that the rates of church attendance and taking Holy Communion diverged in Poland between municipalities with and without access to independent TV, after the radical-right populist party PiS came to power in 2015 and transformed state media into an instrument serving government and Church interests. In places with no reception of independent TV, the secularization trend that preceded PiS victory was halted and even partially reversed as the rate of mass participation stabilized while the rate of taking Communion grew after 2015. In contrast, in places where independent TV was available, the fall in the rates of religious participation intensified and viewership of the independent TV increased. The impact of the TV environment is stronger in more religious and rural municipalities.

A large-scale online experiment helps to understand how different individuals react to critical information about Catholic Church that is available in Poland only through independent media. Exposing experiment's participants to information about the exchange of mutual favors between the ruling party PiS and the Church as well as the cover-ups by the Church of cases of child sexual abuse by priests lead to a persistent decrease in trust in religious institutions and a change in religious behavior. Consistent with observational data, the effects of the experimental information treatments are larger among more religious people and those from rural areas and small towns. They are also larger among participants who were less likely to be exposed to independent news media.

The experiment results suggest the mechanism behind the aggregate effects of media environment that we find in the observational data. In those places where independent media are not readily available, some people simply do not have access to information that repudiates state propaganda, including critical information about the Church. More religious people and people in rural areas do not use alternative sources of information such as the internet and social media and instead rely on state television, despite its propagandistic nature.

Thus, the availability of independent free-to-air TV channels still remains important in the age of social media and the internet and even for such deeply-rooted traits as religious participation.

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Figure 1: The similarity of tweets from official Twitter accounts of the main TV networks

(a) Content similarity of TVPolska and TVN accounts
with their own content in 2014
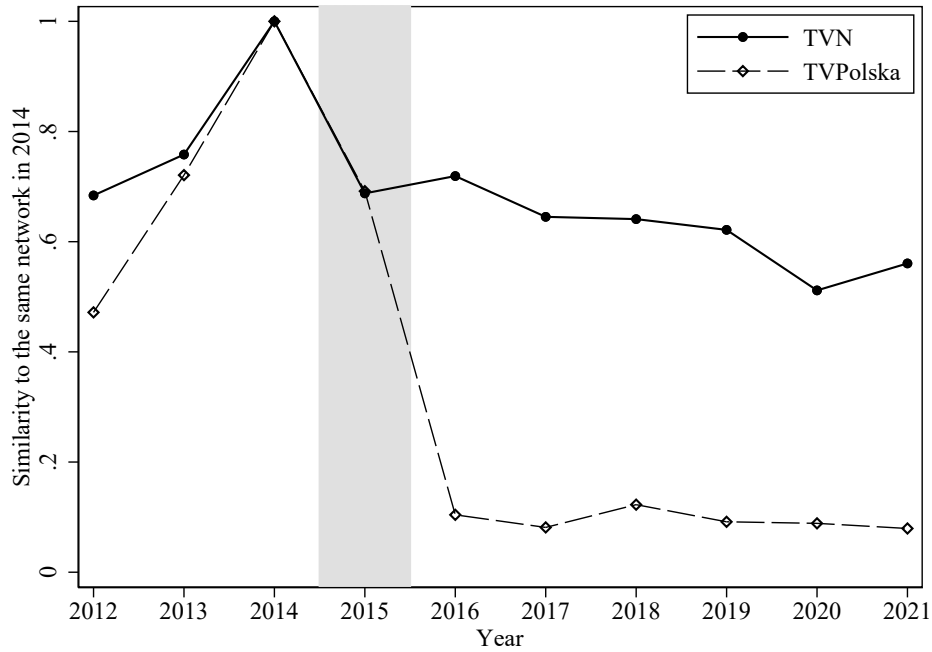
(b) Content similarity of TVPolska account with the accounts
of the two private networks, TVN and Polsat
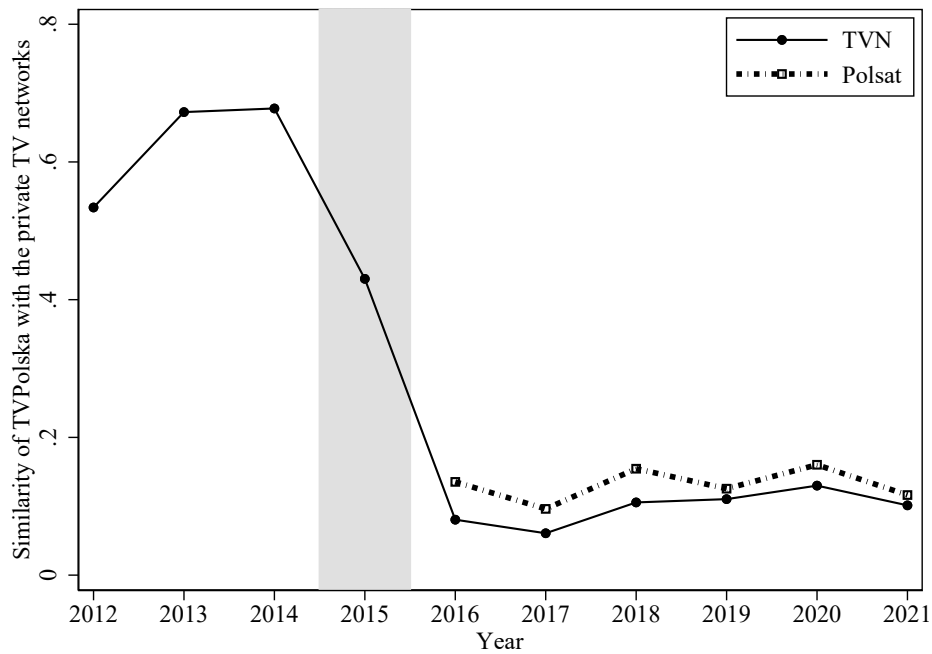
Notes. Data come from the official Twitter accounts of the TV networks. Polsat's account was registered in March 2014, but it became regularly active only in 2016.

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Figure 2: Transmitter location and signal strength of TVN and TVPolska

(a) TVN Signal Strength

(b) TVPolska Signal Strength
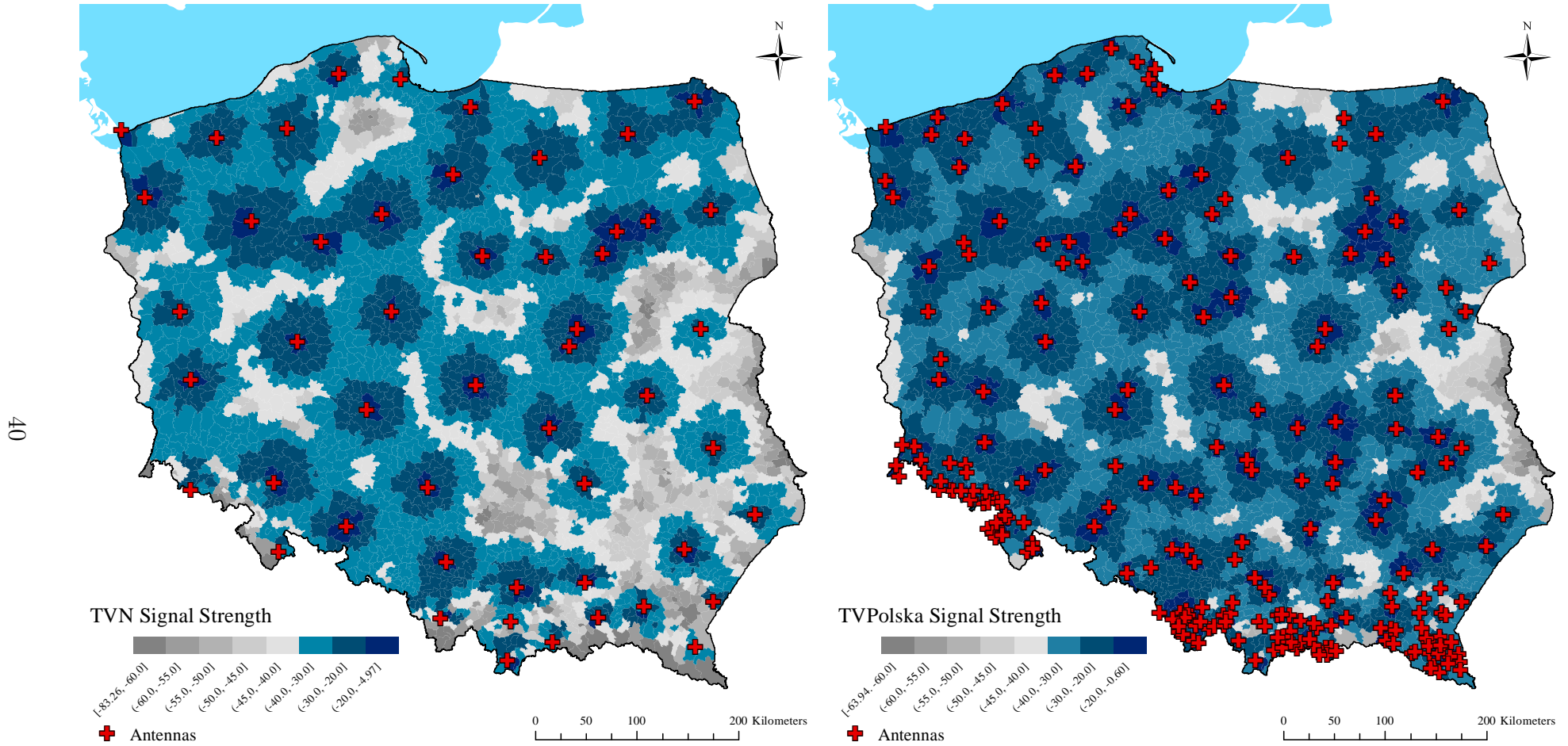
Notes. The maps visualize the signal strength (in Db) of TVN and TVPolska at the municipality level. Different blue shades indicate municipalities with good reception, with darker blue indicating stronger signal. Gray color indicates bad reception, with darker gray indicating weaker signal. Polsat uses the same transmitters and has the same signal strength as TVN. Authors' own calculation.

Figure 3: Event-study specification, full sample and matched sample

Attending mass

(a) Full sample

(b) Matched sample

Taking Communion

(c) Full sample
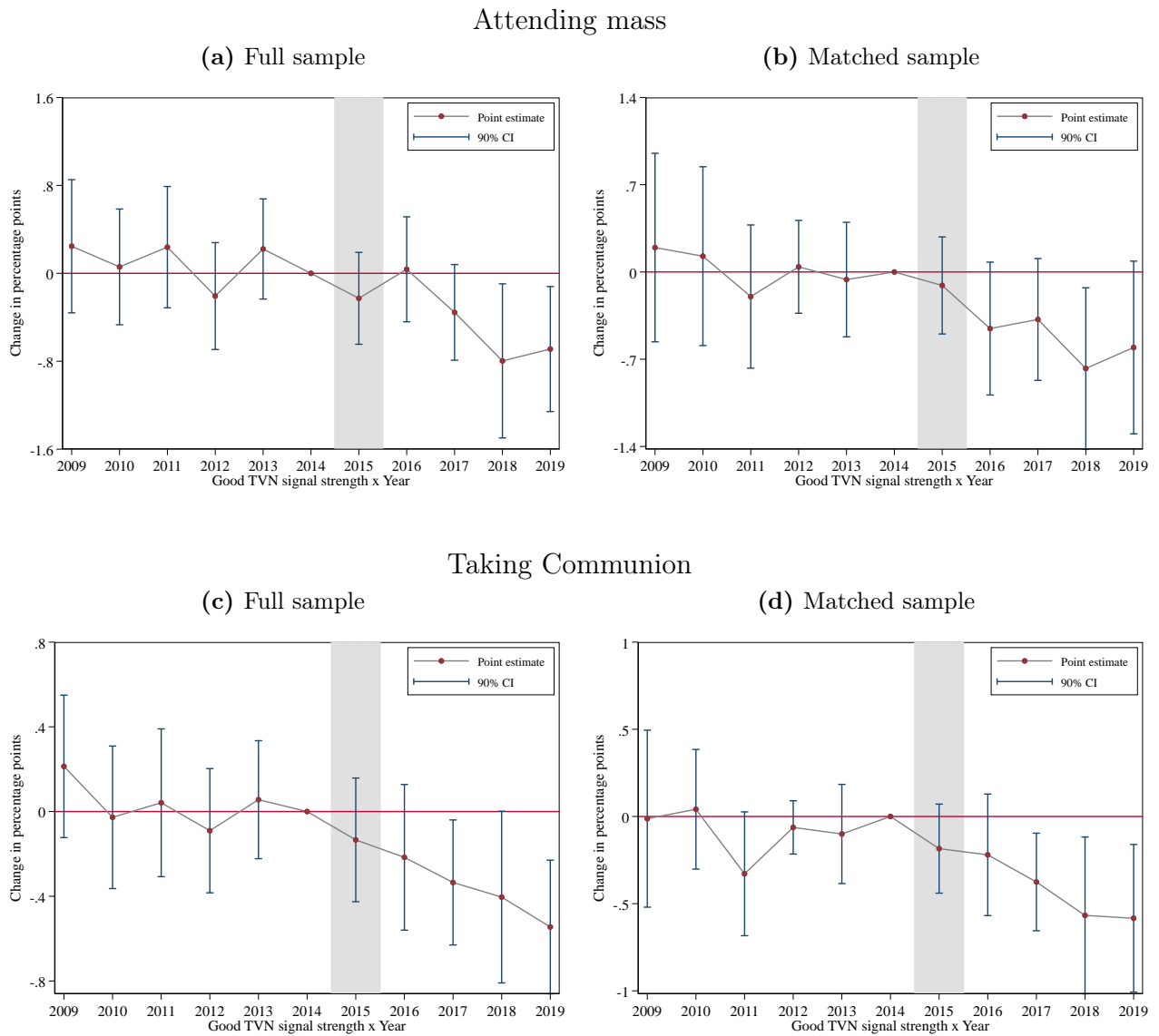
(d) Matched sample

Notes. The figure presents the results of the event study in the full sample (left) and matched sample (right). The unit of analysis is municipality × year. Point estimates and 90% confidence intervals are presented. Year 2014 is the excluded time period. Standard errors are corrected for spatial autocorrelation within 100 km and temporal autocorrelation for the whole time period.

Figure 4: Experimental ATE on the main religiosity outcomes:
First round, right after the treatment
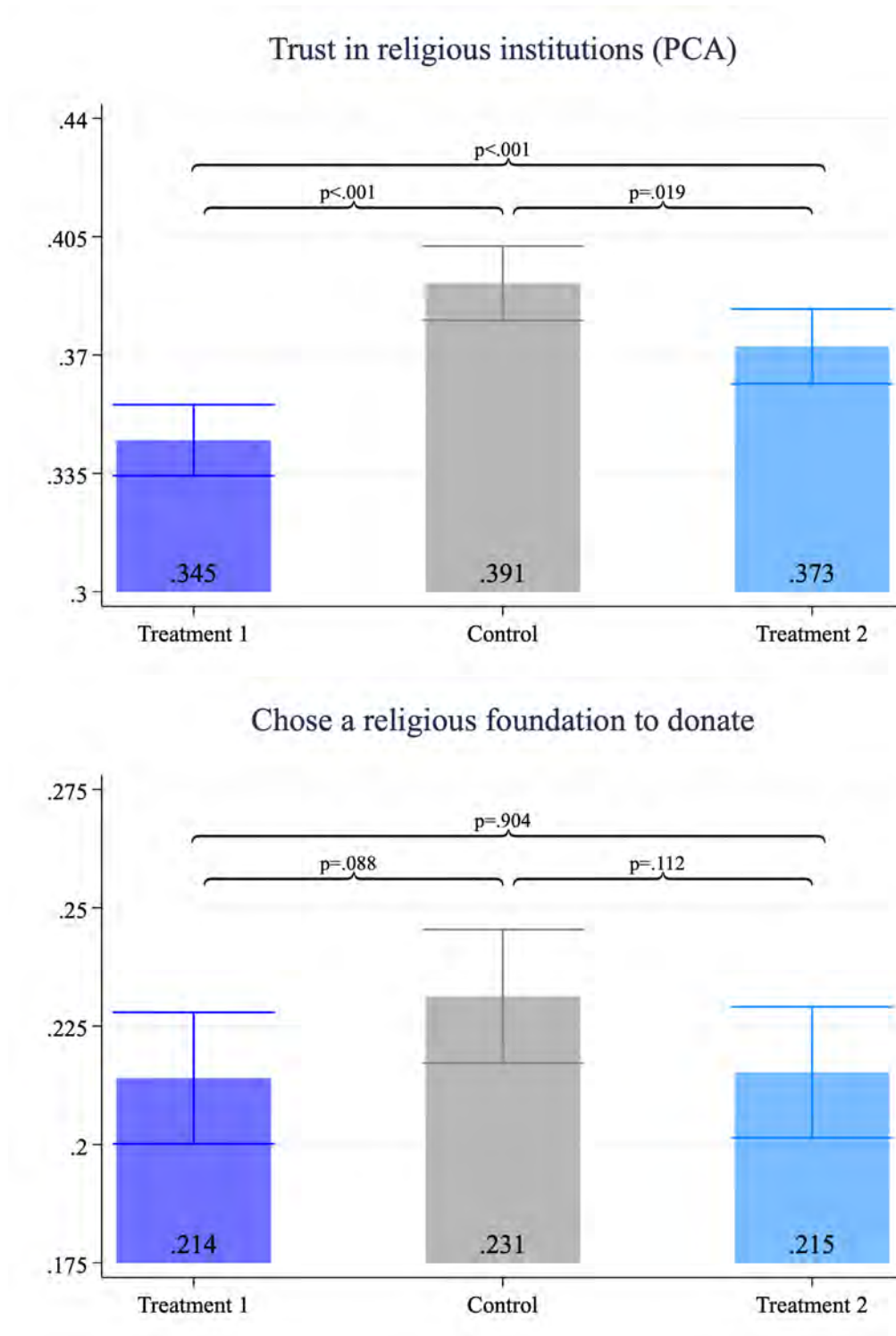
Notes. The figure presents the ATE of the experimental treatments on the main religiosity outcomes in the first round of the survey-experiment. OLS estimates. Each of the two graphs presents results from a separate regression. The unit of analysis is individual. All regressions control for randomization strata fixed effects, unbalanced controls reported in Online Appendix Table A13, and initial level of religiosity self-reported in pre-treatment survey. P-values from heteroskedasticity-robust standard errors are reported.

Figure 5: Experimental ATE on the main religiosity outcomes:
Follow-up round, 2 to 4 weeks after the treatment
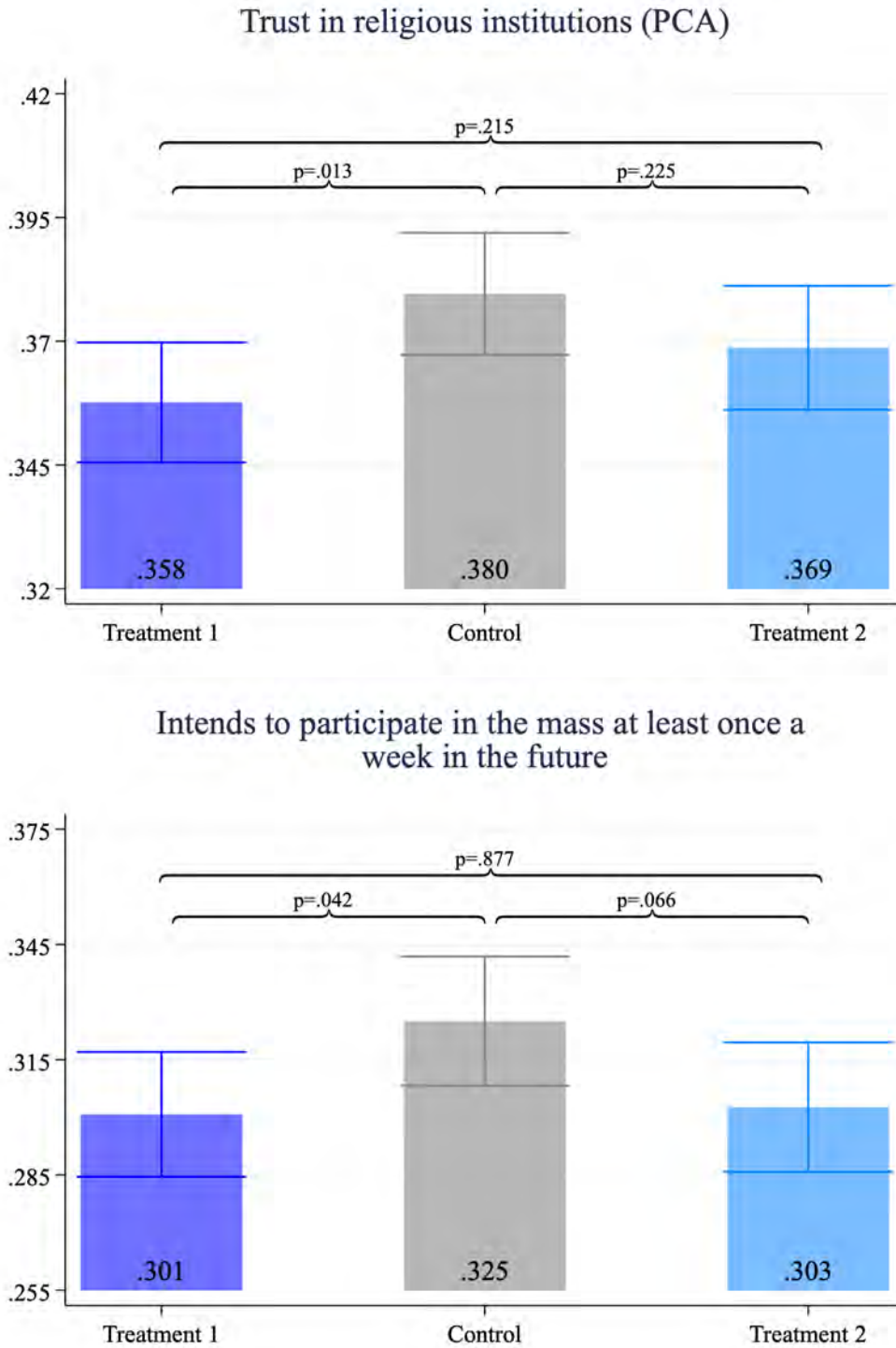
Trust in religious institutions (PCA)

Intends to participate in the mass at least once a week in the future

Notes. The figure presents the ATE of the experimental treatments on the main religiosity outcomes in the follow-up round of the survey-experiment. OLS estimates. Each of the two graphs presents results from a separate regression. The unit of analysis is individual. All regressions control for randomization strata fixed effects, unbalanced controls reported in Online Appendix Table A13, and initial level of religiosity self-reported in pre-treatment survey. P-values from heteroskedasticity-robust standard errors are reported.

Figure 6: Experimental ATE on a mechanism behind the long-term effect:
Follow-up round, 2 to 4 weeks after the treatment

Actively searched information on pedophilia in the
Church in the media or on the internet during the last two weeks

Watched "Tell no one" since the first round
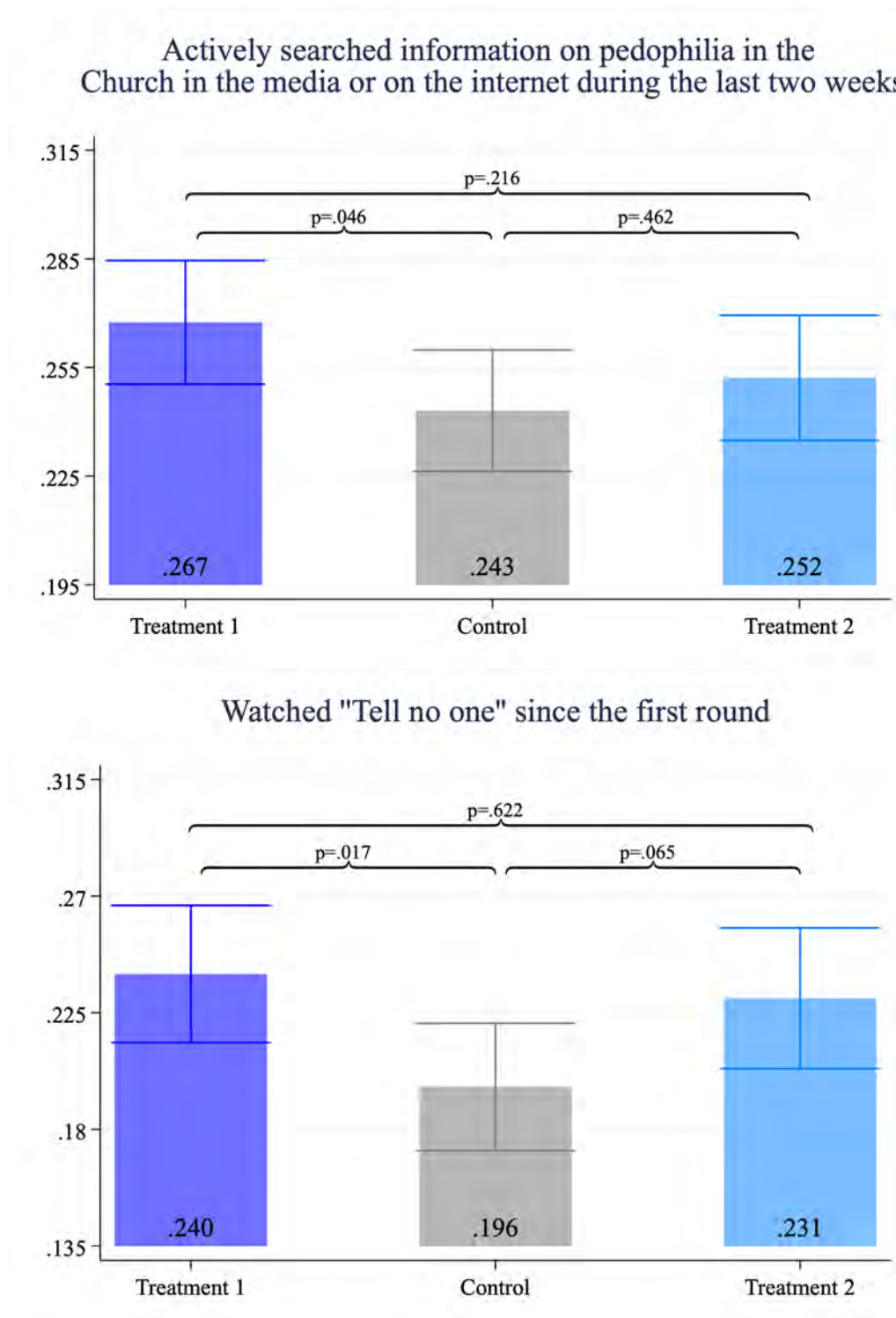
Notes. The figure presents the ATE of the experimental treatments on the outcomes related to the mechanism of persistence. OLS estimates. Each of the two graphs presents results from a separate regression. The unit of analysis is individual. All regressions control for randomization strata fixed effects, unbalanced controls reported in Online Appendix Table A13, and initial level of religiosity self-reported in pre-treatment survey. P-values from heteroskedasticity-robust standard errors are reported.

Figure 7: Heterogenous experimental effects on the main religiosity outcome: trust in religious institutions

(a) First round

Trust in religious institutions (PCA)

(b) Follow-up round

Trust in religious institutions (PCA)

Notes. The figure presents the heterogeneous effects of the experimental treatments on trust in religious institutions in the first and the follow-up rounds of the survey-experiment, in Panels A and B, respectively. OLS estimates. Each graph on the figure presents results from three different regressions for three dimensions of heterogeneity, indicated by a subtitle on the left in bold. The unit of analysis is individual. All regressions control for randomization strata fixed effects, unbalanced controls reported in Online Appendix Table A13, and initial level of religiosity self-reported in pre-treatment survey. P-values from heteroskedasticity-robust standard errors are reported.

Figure 8: Test for Experimenter Demand Effects
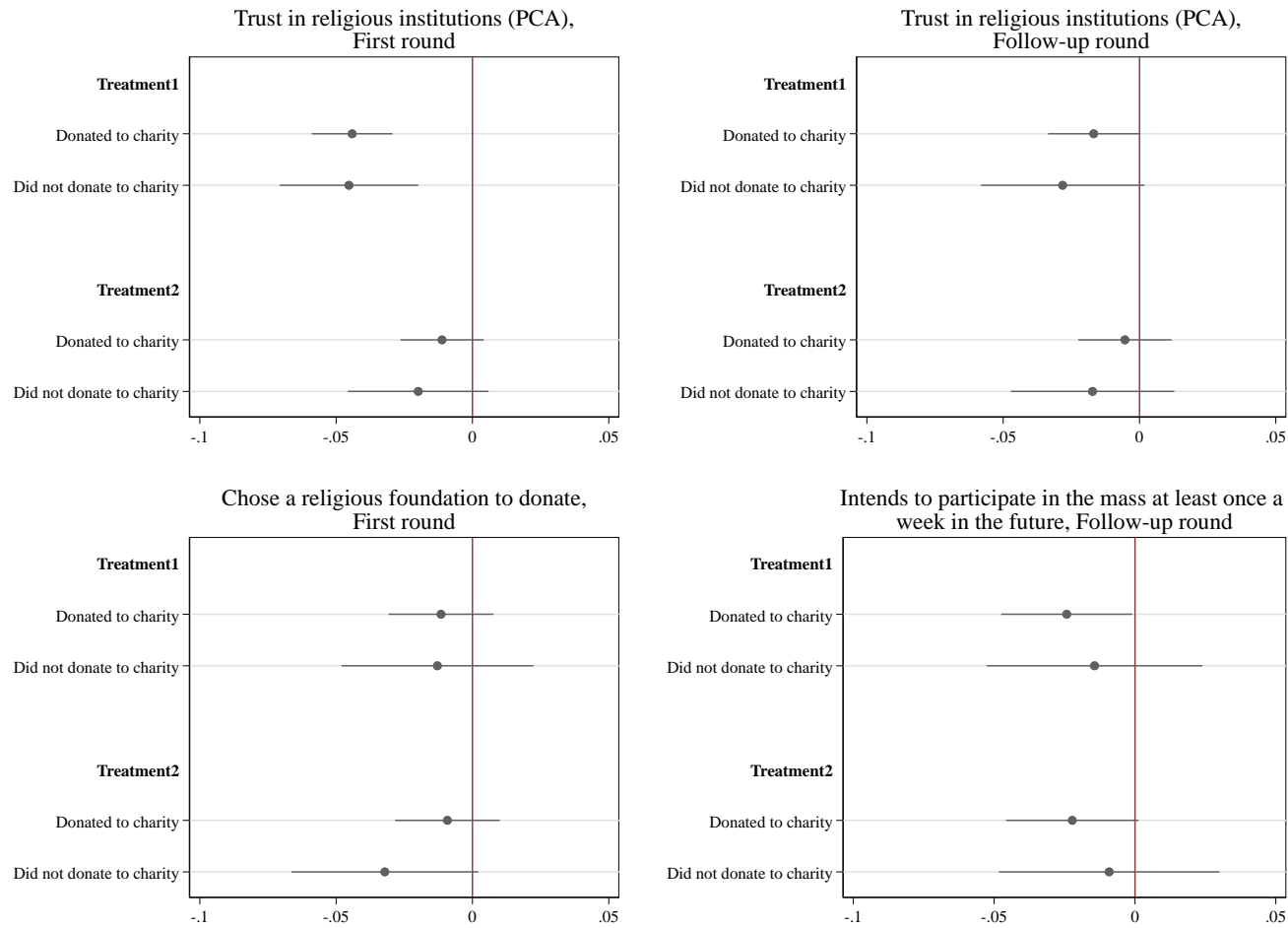
Notes. The figure presents the heterogeneous effects of the experimental treatments on the main religiosity outcomes with respect to having donated time or money to a charity in the last year, in each round of the survey-experiment. OLS estimates. Each graph on the figure presents results from a different regression. The unit of analysis is individual. All regressions control for randomization strata fixed effects, unbalanced controls reported in Online Appendix Table A13, and initial level of religiosity self-reported in pre-treatment survey. P-values from heteroskedasticity-robust standard errors are reported.

Table 1: Determinants of TVN and TVPolska reception and antenna location

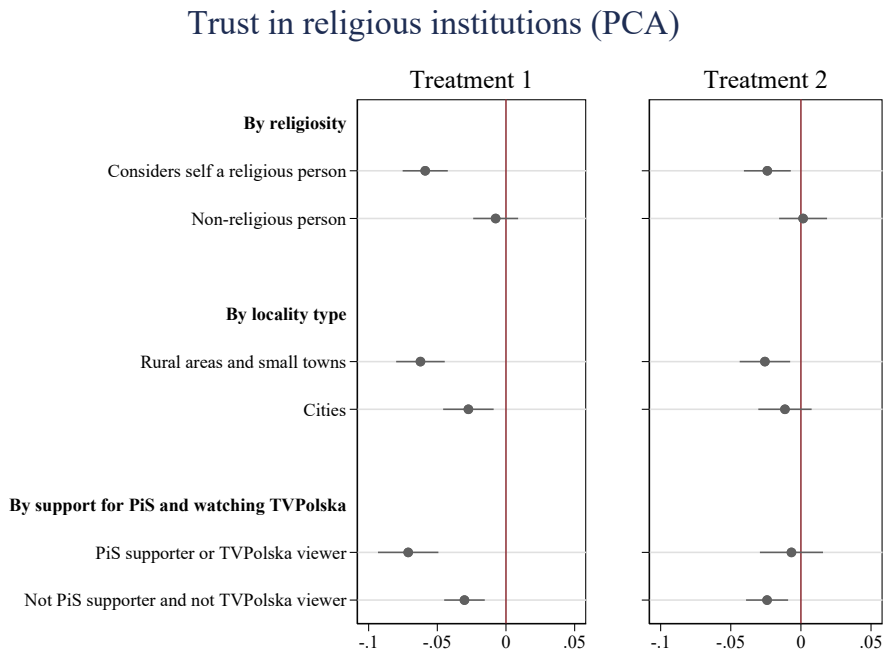|	Good TV signal				Transmitter presence			
Dependent variable:	Good TVN signal strength		Good TVPolska signal strength		TVN antenna present		TVPolska antenna present	
Covariates:	All	LASSO	All	LASSO	All	LASSO	All	LASSO
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Free-space TVN signal strength in 2015	0.042*** (0.005)	0.043*** (0.005)						
Free-space TVPolska signal strength in 2015			0.020*** (0.004)	0.019*** (0.005)				
Top population decile	0.098*** (0.031)	0.049*** (0.019)	0.023 (0.020)	-0.039* (0.021)	-0.021 (0.019)	-0.019 (0.015)	-0.037 (0.048)	-0.045 (0.048)
Austro-Hungarian partition	-0.250*** (0.056)	-0.255*** (0.054)	-0.047 (0.031)	-0.074*** (0.028)	0.056** (0.023)	0.059*** (0.019)	0.168** (0.066)	0.137** (0.061)
Prussian partition	-0.034 (0.033)	0.029 (0.044)	-0.009 (0.030)		0.001 (0.018)		0.067* (0.038)	
(log) Altitude	-0.039* (0.023)	-0.032 (0.021)	-0.035** (0.016)	-0.033** (0.015)	0.015* (0.008)	0.011* (0.006)	0.100** (0.047)	0.079** (0.037)
Share of population employed in agriculture	-0.002** (0.001)		-0.001 (0.001)	-0.002** (0.001)	-0.000 (0.000)		-0.001 (0.001)	-0.002*** (0.001)
Speed of 3G mobile internet	-0.004*** (0.001)		-0.002** (0.001)		0.000 (0.001)	0.001 (0.001)	0.006*** (0.002)	0.006*** (0.002)
Share of population with higher education	-0.008 (0.007)		0.002 (0.005)		0.009* (0.005)		0.016*** (0.006)	0.012*** (0.004)
Share of population with secondary education	0.003 (0.003)		-0.009 (0.005)		0.002 (0.002)	0.005*** (0.002)	0.003 (0.005)	
Pre-2009 support for PiS (PCA)	-0.013 (0.014)	-0.017 (0.013)	0.012 (0.009)		0.003 (0.005)		-0.003 (0.011)	
(log) Night-time lights per capita	0.040** (0.019)		0.041* (0.025)		0.018** (0.007)		0.000 (0.020)	
Share of working age population	0.023 (0.015)		0.019** (0.008)		-0.003 (0.003)		-0.009 (0.015)	
(log) Municipality revenue per capita	-0.230*** (0.050)		-0.078*** (0.027)		0.037 (0.034)		0.203*** (0.073)	
Share of elderly population	0.003 (0.011)		0.006 (0.007)		-0.002 (0.002)		-0.001 (0.011)	
(log) Industrial production per capita	-0.009 (0.008)		0.005 (0.004)		-0.003 (0.003)		-0.000 (0.005)	
Rural areas	0.030 (0.030)		-0.038 (0.048)		-0.005 (0.015)		0.037** (0.018)	
(log) EU subsidies to municipality per capita	0.003 (0.005)		-0.003 (0.003)		-0.005** (0.002)		-0.008 (0.005)	
Wages relative to country average	0.000 (0.001)		0.001 (0.001)		0.000 (0.000)		-0.002** (0.001)	
(log) Distance to optic-fiber internet nodes (km)	-0.026*** (0.010)		0.002 (0.004)		-0.010 (0.010)		-0.022 (0.022)	
Railways within 10 km	0.010 (0.031)		-0.037 (0.030)		-0.018 (0.026)		-0.016 (0.030)	
Share of population that speaks only Polish	0.002 (0.003)		-0.003** (0.001)		0.000 (0.000)		0.000 (0.002)	
Religious participation (PCA), 2009	0.005 (0.009)		-0.005* (0.003)		-0.001 (0.004)		-0.013*** (0.005)	
Observations	2478	2478	2478	2478	2478	2478	2478	2478
R-squared	0.304	0.275	0.192	0.163	0.043	0.028	0.176	0.151
Mean of dependent variable	0.71	0.71	0.90	0.90	0.05	0.05	0.18	0.18

Notes. The table presents the correlates of the good signal strength quality of TVN and TVPolska and of the location of transmitters used by them. OLS estimates. Columns 1, 2, 5, and 6 report the estimates for TVN, Columns 3, 4, 7, and 8 for TVPolska. Transmitter presence is a dummy variable that takes the value of 1 if there is a TV transmitter for the network within 10 km distance to municipality centroid, and 0 otherwise, multiplied by 100. Free-space signal strength (in Db) computed with ITM model is included in the set of regressors in Columns 1 to 4. Columns 1, 3, 5, 7 control for all listed covariates. Columns 2, 4, 6, 8 control for the top population decile and the covariates selected by robust LASSO method (Belloni et al., 2013). Standard errors corrected for spatial autocorrelation within 100 km are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 2: Difference-in-differences results: Religious participation and TVN

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Dependent Variable	**Share of Catholic population attending mass**						
𝟙{Good TVN signal strength} × Post PiS	-0.791***	-0.727***	-0.877***	-0.538**	-0.571**		
	(0.227)	(0.218)	(0.258)	(0.246)	(0.246)		
𝟙{Good TVN signal strength} × 2015	-0.401**	-0.372*	-0.490**	-0.316	-0.348*		
	(0.194)	(0.194)	(0.204)	(0.199)	(0.207)		
TVN signal strength × Post PiS						-0.035**	-0.039**
						(0.015)	(0.015)
TVN signal strength × 2015						-0.011	-0.014
						(0.012)	(0.012)
Free-space TVN signal strength × Post PiS			0.029	0.022	0.025	0.051*	0.058*
			(0.023)	(0.022)	(0.022)	(0.029)	(0.030)
Free-space TVN signal strength × 2015			0.023	0.018	0.028	0.022	0.033
			(0.023)	(0.021)	(0.023)	(0.027)	(0.030)
R-squared	0.864	0.865	0.865	0.866	0.866	0.866	0.866
Mean of dependent variable	34.99	34.99	34.99	34.99	34.99	34.99	34.99
Panel B: Dependent Variable	**Share of Catholic population taking Communion**						
𝟙{Good TVN signal strength} × Post PiS	-0.557***	-0.520***	-0.610***	-0.404***	-0.359***		
	(0.124)	(0.123)	(0.142)	(0.140)	(0.139)		
𝟙{Good TVN signal strength} × 2015	-0.273**	-0.259*	-0.271*	-0.164	-0.246*		
	(0.138)	(0.134)	(0.149)	(0.146)	(0.143)		
TVN signal strength × Post PiS						-0.035***	-0.032***
						(0.008)	(0.008)
TVN signal strength × 2015						-0.016	-0.024**
						(0.015)	(0.012)
Free-space TVN signal strength × Post PiS			0.017	0.007	0.003	0.041**	0.034**
			(0.014)	(0.013)	(0.013)	(0.016)	(0.016)
Free-space TVN signal strength × 2015			0.002	-0.004	0.005	0.013	0.031
			(0.014)	(0.014)	(0.014)	(0.024)	(0.022)
R-squared	0.769	0.770	0.770	0.771	0.772	0.771	0.772
Mean of dependent variable	14.61	14.61	14.61	14.61	14.61	14.61	14.61
Year and Municipality FEs	✓	✓	✓	✓	✓	✓	✓
Fixed and Mobile Internet × Year FEs		✓	✓	✓	✓	✓	✓
Nighttime light density per capita		✓	✓	✓	✓	✓	✓
Disaster dummy		✓	✓	✓	✓	✓	✓
Partitions of Poland × Year trend				✓		✓	
Partitions of Poland × Year FEs					✓		✓
Observations	26,617	26,617	26,617	26,617	26,617	26,617	26,617
SD of the TVN signal measure	0.45	0.45	0.45	0.45	0.45	10.13	10.13

Notes. The table presents the difference-in-differences estimation of the effect of TVN on religious participation after PiS came to power. OLS estimates. The unit of analysis is municipality × year. The dependent variables are the shares of Catholics attending mass and taking Communion in Panels A and B, respectively. The main explanatory variable is the interaction between a measure of TVN reception and post-PiS dummy. In Columns 1 to 5, we measure TVN reception as the dichotomized signal strength, i.e., a dummy for "Good TVN signal strength" that takes the value of 1 in 71% of municipalities. Columns 6 and 7 consider the continuous TVN signal strength, aggregated to municipality level. Column 1 controls only for year and municipality fixed effects. Column 2, in addition, controls for the interactions of fixed and mobile internet with year dummies, time-varying nighttime light density per capita, and dummy variables for a natural disaster in the last three years. Columns 3 to 7 add controls for the free-space TVN signal strength at municipality level interacted with Post-PiS dummy and with 2015 year dummy. Columns 4 and 6 include the interactions of the dummies for Austro-Hungarian and Prussian partitions with year trends in addition to controls used in Column 3. (The Russian Empire partition is the omitted category.) Columns 5 and 7 include the interactions of the dummies for Austro-Hungarian and Prussian partitions with year dummies in addition to controls used in Column 3. Standard errors corrected for spatial autocorrelation within 100 km and temporal autocorrelation for the whole time period are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Difference-in-differences results: Religious participation and other TVs

Sample:	All municip.	All municip.	All municip.	Bad TVN reception	Bad TVN reception	Good TVPolska	Good Entert. TV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Dependent Variable:			Share of Catholic population attending mass				
$\mathbb{1}$\{Good TVN signal strength\} × Post PiS	-0.716**					-0.629**	-0.663**
	(0.311)					(0.275)	(0.315)
$\mathbb{1}$\{Good TVN signal strength\} × 2015	-0.381					-0.435**	-0.426
	(0.259)					(0.212)	(0.271)
$\mathbb{1}$\{Good TVPolska signal strength\} × Post PiS	0.109	-0.232	-0.282	0.097	0.056		
	(0.340)	(0.283)	(0.302)	(0.323)	(0.437)		
$\mathbb{1}$\{Good TVPolska signal strength\} × 2015	0.078	-0.067	-0.151	0.126	0.343		
	(0.453)	(0.402)	(0.406)	(0.400)	(0.462)		
$\mathbb{1}$\{Good entertainment TV signal strength\} × Post PiS	0.110	-0.101	-0.056	0.086	0.192		
	(0.253)	(0.199)	(0.242)	(0.297)	(0.450)		
R-squared	0.866	0.866	0.866	0.872	0.873	0.867	0.872
Mean of dependent variable	34.99	34.99	34.99	37.88	37.88	34.78	34.57
Panel B: Dependent Variable:			Share of Catholic population taking Communion				
$\mathbb{1}$\{Good TVN signal strength\} × Post PiS	-0.467***					-0.365**	-0.306*
	(0.164)					(0.150)	(0.173)
$\mathbb{1}$\{Good TVN signal strength\} × 2015	-0.355**					-0.350**	-0.074
	(0.146)					(0.164)	(0.199)
$\mathbb{1}$\{Good TVPolska signal strength\} × Post PiS	0.014	-0.262	-0.277	0.038	-0.014		
	(0.205)	(0.178)	(0.190)	(0.204)	(0.257)		
$\mathbb{1}$\{Good TVPolska signal strength\} × 2015	0.338*	0.097	0.072	0.287	0.260		
	(0.187)	(0.170)	(0.183)	(0.186)	(0.249)		
$\mathbb{1}$\{Good entertainment TV signal strength\} × Post PiS	0.197	0.035	0.086	0.049	0.112		
	(0.139)	(0.113)	(0.134)	(0.169)	(0.236)		
R-squared	0.772	0.772	0.772	0.767	0.767	0.774	0.776
Mean of dependent variable	14.61	14.61	14.61	15.53	15.53	14.48	14.34
Year and Municipality FEs	✓	✓	✓	✓	✓	✓	✓
Fixed and Mobile Internet × Year FE	✓	✓	✓	✓	✓	✓	✓
Night-time light density per capita	✓	✓	✓	✓	✓	✓	✓
Disaster dummy	✓	✓	✓	✓	✓	✓	✓
Partitions of Poland × Year FEs	✓	✓	✓	✓	✓	✓	✓
Free-space TVN signal strength	✓					✓	✓
Free-space TVPolska and entert. TV signal strength	✓		✓		✓		
Observations	26,617	26,617	26,617	7,672	7,672	23,913	19,287
SD of the TVN signal measure	0.45	0.45	0.45	0.00	0.00	0.41	0.38

Notes. The table presents robustness of the difference-in-differences estimation of the effect of TVN to controlling for the signal strength of TVPolska and of the entertainment TV. It also examines the effects of TVPolska and the entertainment TV. OLS estimates. The unit of analysis is municipality × year. The dependent variables are the shares of Catholics attending mass and taking Communion in Panels A and B, respectively. The dummies for "Good TVN signal strength", "Good TVPolska signal strength", and "Good entertainment TV signal strength" are calculated using the same continuous signal strength threshold, -40 Db. All regressions control for year and municipality fixed effects and the interactions of fixed and mobile internet with year dummies, time-varying nighttime light density per capita, and dummy variables for a natural disaster in the last three years. Columns 1, 6 and 7, in addition, controls for free-space TVN signal strength interacted with post-PiS dummy and with 2015 dummy, whereas Columns 1, 3 and 5, control for free-space TVPolska signal strength and free-space entertainment TV signal strength also interacted with the same time periods. Standard errors corrected for spatial autocorrelation within 100 km and temporal autocorrelation for the whole time period are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Difference-in-differences: Results in the matched sample

| | Share of Catholic population | | | |
| | attending mass | | taking Communion | |
	(1)	(2)	(3)	(4)
𝟙{Good TVN signal strength} × Post PiS	-0.594**	-0.573**	-0.358**	-0.361**
	(0.255)	(0.248)	(0.158)	(0.154)
𝟙{Good TVN signal strength} × 2015	-0.154	-0.125	-0.106	-0.109
	(0.169)	(0.186)	(0.149)	(0.147)
Year and Municipality FEs	✓	✓	✓	✓
Fixed and Mobile Internet × Year FE		✓		✓
Night-time light density per capita		✓		✓
Disaster dummy		✓		✓
Partitions of Poland × Year FEs		✓		✓
Observations	20,488	20,488	20,488	20,488
R-squared	0.852	0.854	0.757	0.761
Mean of dependent variable	34.75	34.75	14.47	14.47
SD of the TVN signal measure	0.42	0.42	0.42	0.42

Notes. The table presents the difference-in-differences estimation in the matched sample of municipalities. OLS estimates. The unit of analysis is municipality × year. The dependent variables are the share of Catholics attending mass in Columns 1 and 2 and taking Communion in Columns 3 and 4. We match each treated municipality (with "Good TVN signal") to a untreated municipality (without "Good TVN signal") within 50 km distance, based on a propensity score imposing a minimum distance of one standard deviation in TVN signal strength between pairs. We exclude from the sample all municipalities with a TVN transmitter antenna and pairs that are not balanced in terms of TVPolska transmitter antenna. Untreated municipalities are weighted using the weights representing the number of treated municipalities for which they serve as counterfactual. Standard errors corrected for spatial autocorrelation within 100 km and temporal autocorrelation for the whole time period are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Experimental ATE: Religiosity outcomes, Both rounds

	First-round outcomes		Follow-up round outcomes			
					Between rounds	
	Trust in religious institutions	Donated to religious foundations	Trust in religious institutions	Attend mass weekly in future	Searched for information about peadophilia	Watched the documentary "Tell no one" on internet
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment 1	-0.046***	-0.017*	-0.022**	-0.024**	0.024**	0.045**
p-value	(0.000)	(0.088)	(0.013)	(0.042)	(0.046)	(0.017)
Randomization-t p-value	{0.000}	{0.086}	{0.012}	{0.044}	{0.050}	{0.016}
Sharpened q-value	[0.001]	[0.083]	[0.063]	[0.073]	[0.073]	[0.063]
FWER p-value	[0.000]	[0.306]	[0.127]	[0.271]	[0.280]	[0.136]
Holm-Bonferroni p-value	[0.001]	[0.366]	[0.148]	[0.334]	[0.342]	[0.158]
Treatment 2	-0.019**	-0.016	-0.011	-0.022*	0.009	0.035*
p-value	(0.019)	(0.112)	(0.225)	(0.066)	(0.462)	(0.065)
Randomization-t p-value	{0.022}	{0.107}	{0.234}	{0.070}	{0.462}	{0.064}
Sharpened q-value	[0.065]	[0.094]	[0.118]	[0.076]	[0.131]	[0.076]
FWER p-value	[0.160]	[0.296]	[0.391]	[0.270]	[0.464]	[0.317]
Holm-Bonferroni p-value	[0.190]	[0.337]	[0.442]	[0.325]	[0.464]	[0.389]
Observations	9066	9416	7194	7277	7157	2832
R-squared	0.198	0.076	0.199	0.183	0.051	0.038
Mean of dependent variable	0.370	0.220	0.369	0.309	0.254	0.222
Lee bounds, Treatment 1	[-.049, -.045]	[-.017, -.017]	[-.022, -.022]	[-.027, -.023]	[.024, .025]	[.043, .049]
Lee bounds, Treatment 2	[-.025, -.011]	[-.016, -.016]	[-.011, -.011]	[-.026, -.018]	[.003, .022]	[.034, .038]
p-value for equality of treatment effects	0.000	0.904	0.215	0.877	0.216	0.622

Notes. The table presents the estimated ATE of the experimental treatments on religious outcomes in both rounds of the survey-experiment. OLS estimates. The unit of analysis is individuals. In Columns 3 to 6, the sample is restricted to individuals who participated in the follow-up round of the survey-experiment; in Column 6, the sample is further restricted to individuals who did not watch the documentary "Tell no one" before the survey-experiment. All regressions control for strata fixed effects. All regressions also include controls for unbalanced pre-treatment characteristics reported in Online Appendix Table A13, namely, household size, dummies for using social media as a main source of information, for having voted in the EU elections in 2019, and for having watched the movies "Clergy" and "Tell no one," separately. All regressions also control for the level of religiosity self-reported in pre-treatment survey. P-values obtained from heteroskedasticity-robust standard errors are in parentheses. Randomization-t p-values for sharp null hypothesis obtained with 10,000 repetitions using Young (2018) are reported in curly brackets. P-values corrected for multiple hypothesis testing using the methods developed by Anderson (2008) (sharpened q-value), List et al. (2019) and Steinmayr (2020) (FWER p-value), Holm (1979) (Holm-Bonferroni p-value) are reported in square brackets. Lee bounds for the treatment effects (Lee, 2009) are reported at the bottom of the table along with p-values from the test of equality of treatment effects of the two treatments. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Online Appendix

A   Additional Results

Figure A1: Self-reported religiosity in Poland compared to other European countries

(a) Weekly mass attendance, 2018   **(b)** Belief in God, 2017
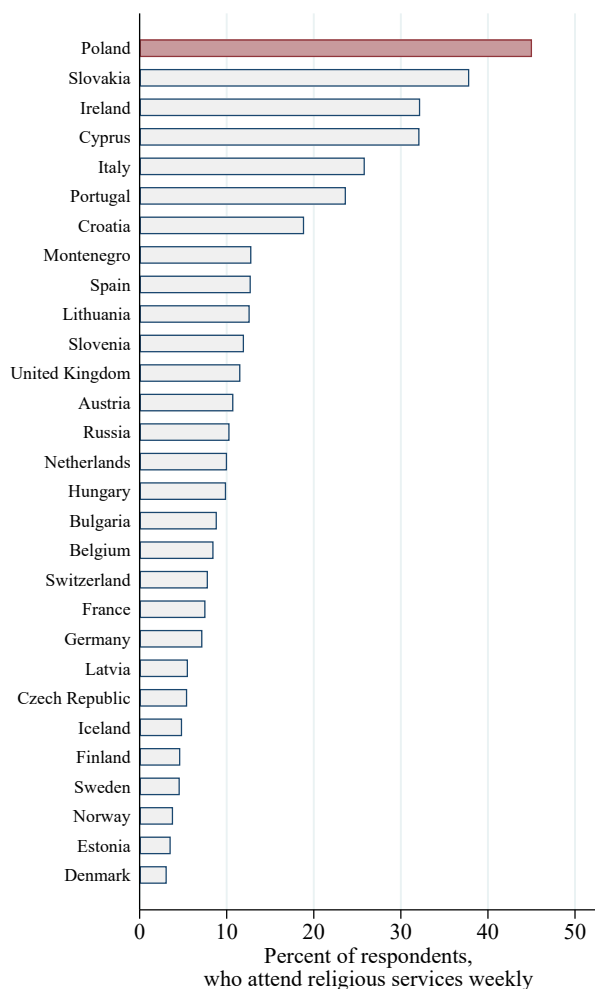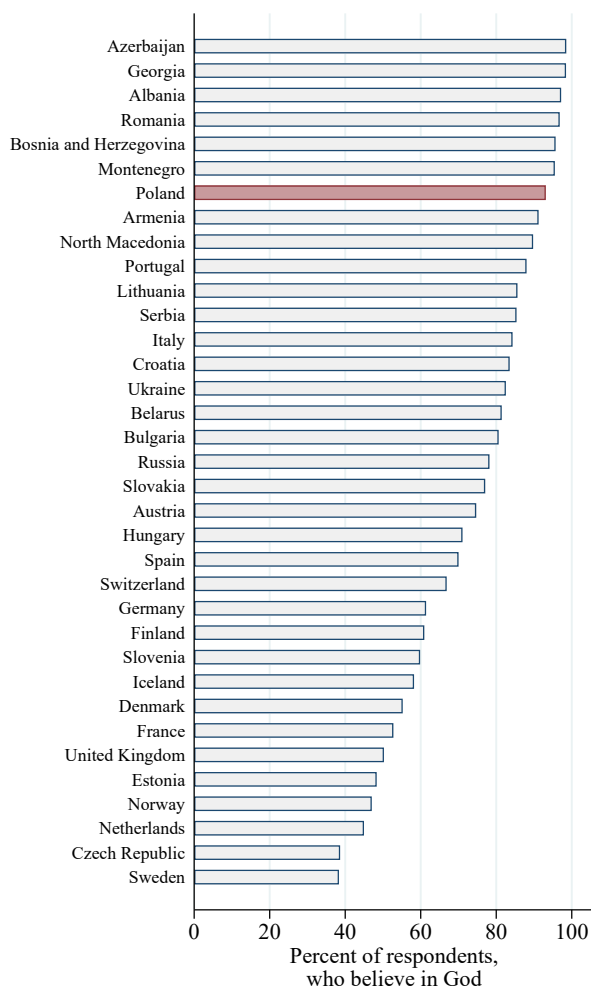
Source. Weekly mass attendance: The European Social Survey (ESS, 2018); Belief in God: The European Values Study (EVS, 2017).

Figure A2: Self-reported religiosity in Poland over time,
compared to other Catholic European countries

(a) Weekly mass attendance over time
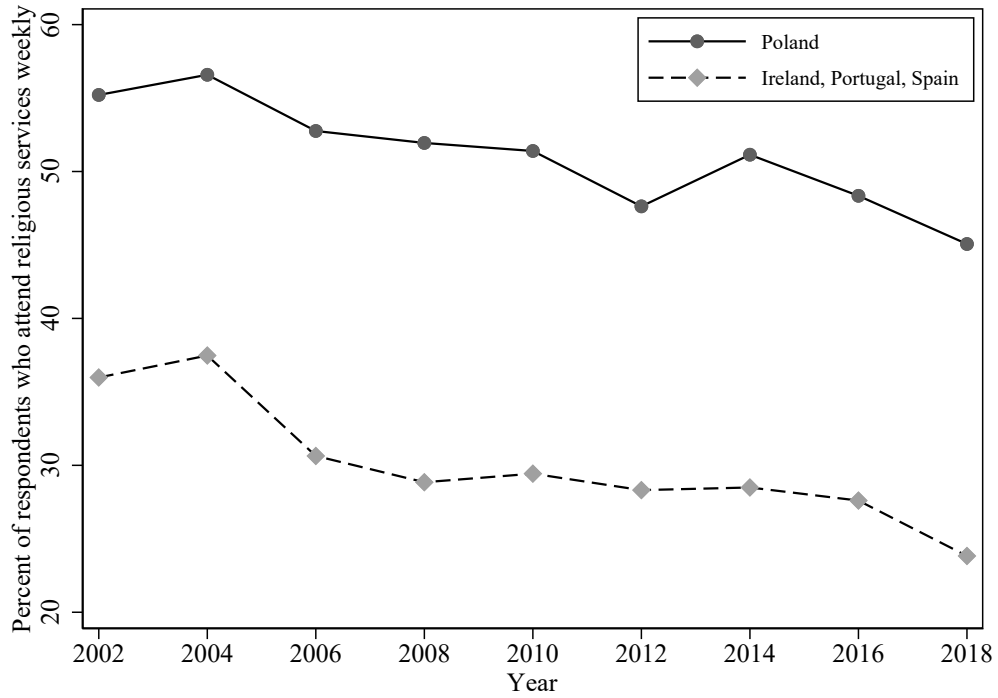
(b) Belief in God over time
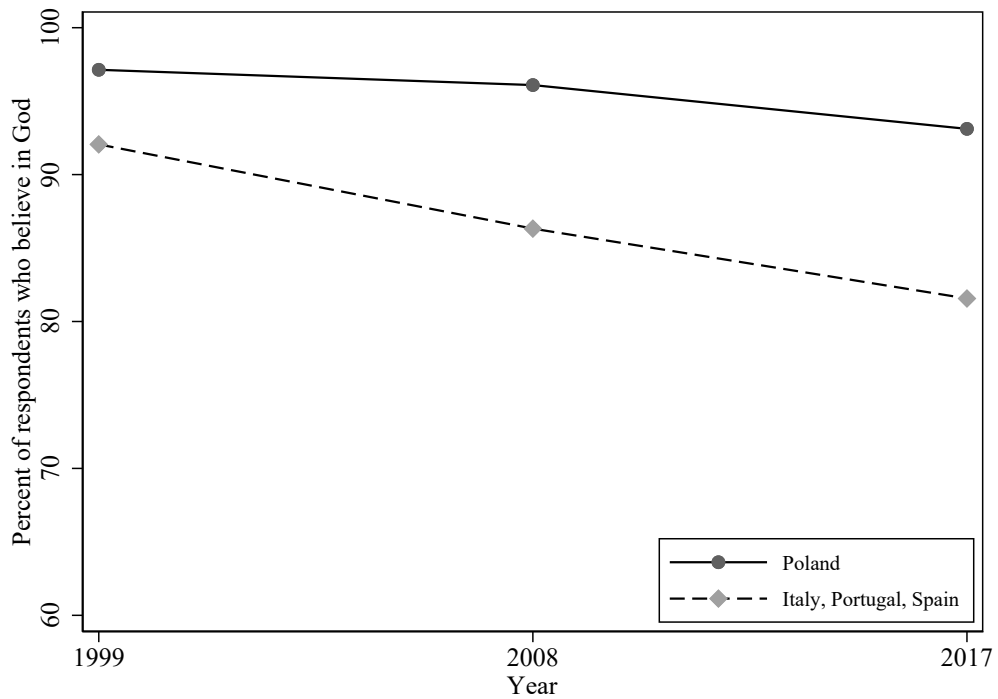
Source. Weekly mass attendance: The European Social Survey (ESS, 2018), nine waves;
Belief in God: The European Values Study (EVS, 2017), three waves.

Figure A3: Viewership of the main news programs by TVN, TVPolska, and Polsat over time

The share of viewers of the three main prime-time TV news programs among all who watch TV at prime time
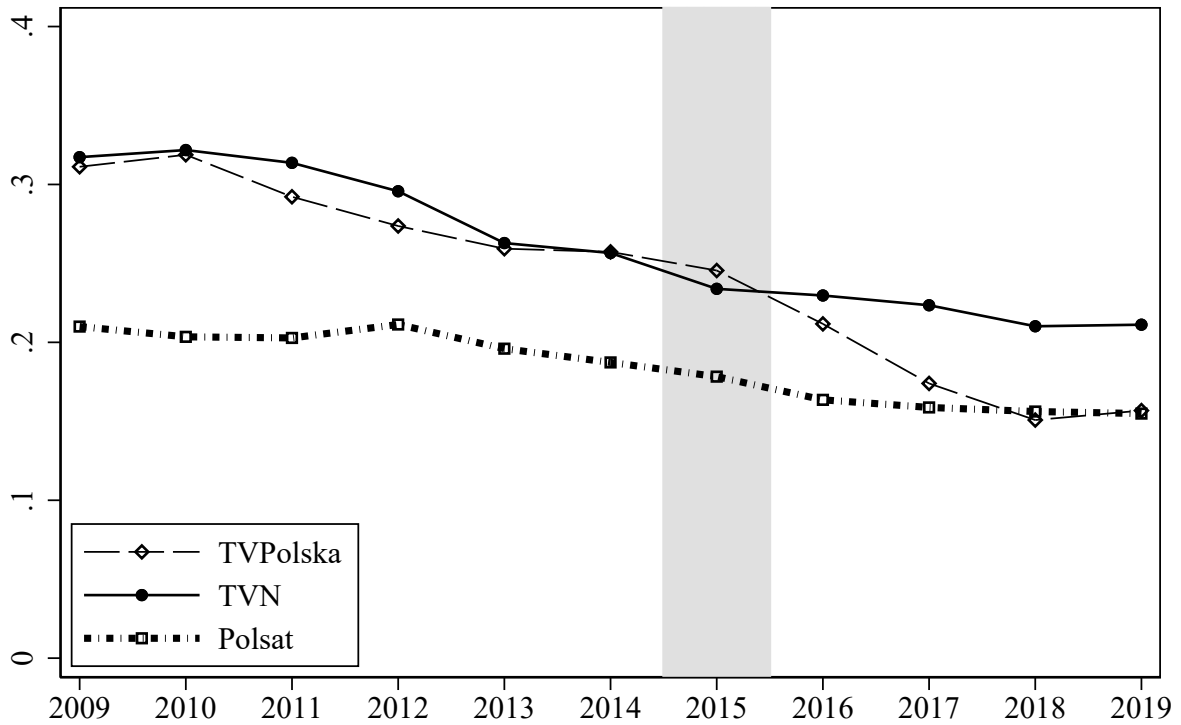
Notes. The figure presents the dynamics of the shares of viewers of *Wiadomosci* (the evening news program by TVPolska), *Fakty* (the evening news program by TVN), and *Wydarzenia* (the evening news program by Polsat) among all watchers of TV at prime time. Source: Nielsen.

Figure A4: Advertising of state companies placed on TV, by TV network
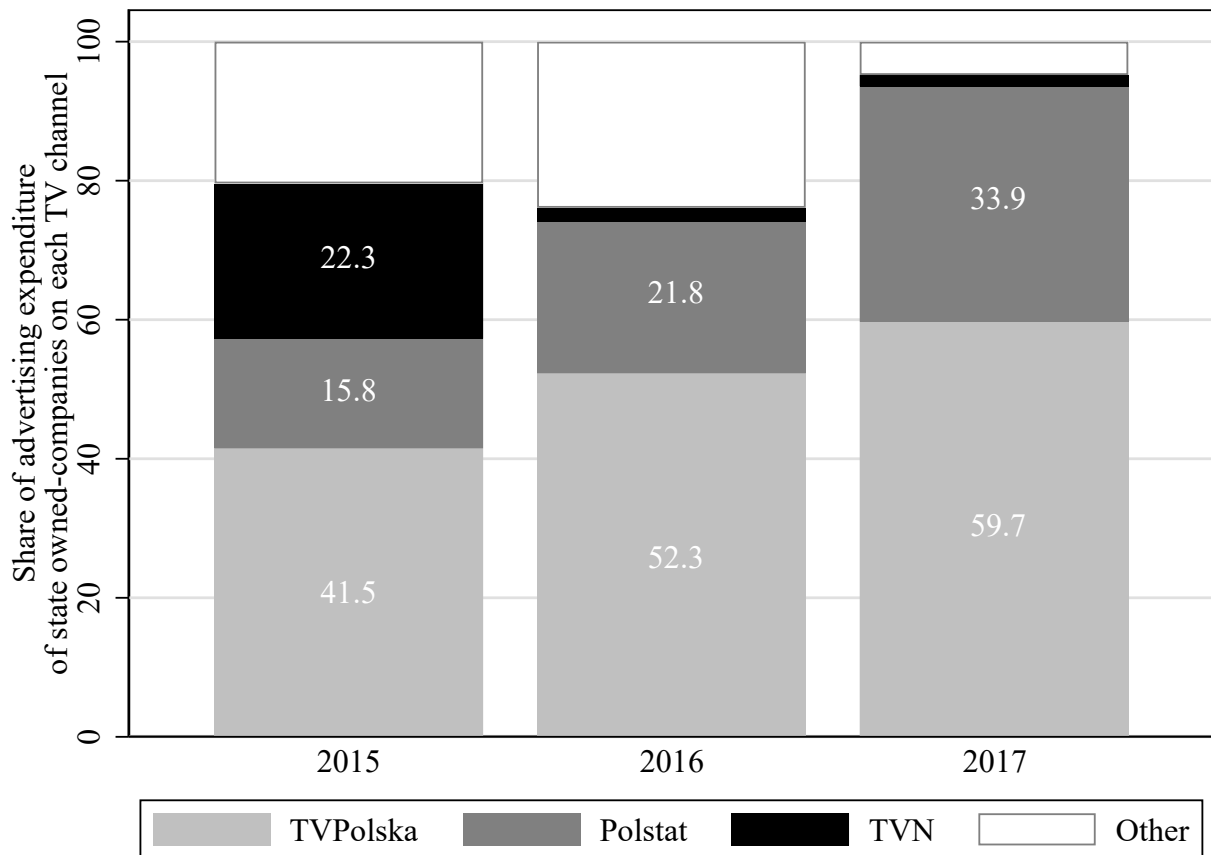
Notes. Source: Report of the Supreme Audit Office (2018). The figure presents the shares of the total advertising expenditure of state-owned companies placed on TV across different TV networks by year.

Figure A5: The similarity of Polsat's Twitter accounts to itself in 2016 and to TVN
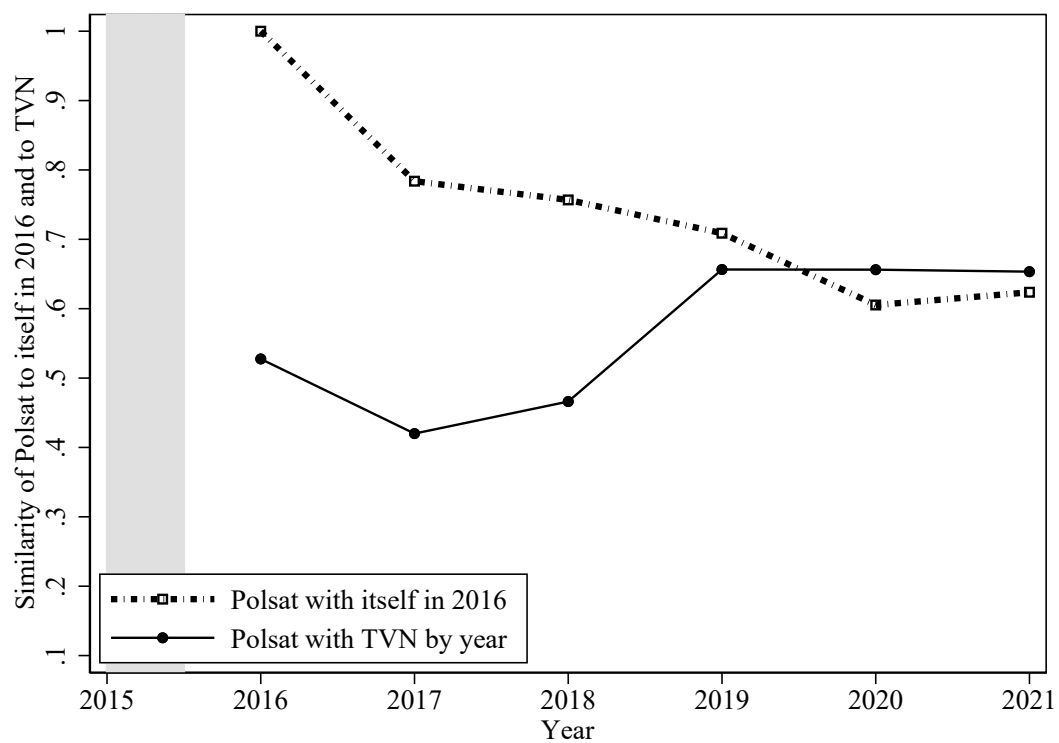
Notes. Data come from the official Twitter accounts of the TV networks. Polsat's account was registered in March 2014, but it became regularly active only in 2016.

Figure A6: Mass Attendance and Taking Communion (2009 and 2019)

(a) Mass attendance, 2009

(b) Mass attendance, 2019

Attending Mass in 2009

[0, 10] (10, 15] (15, 20] (20, 25] (25, 30] (30, 45] (45, 60] (60, 100]

No data

0 50 100 200 Kilometers

Attending Mass in 2019

[0, 10] (10, 15] (15, 20] (20, 25] (25, 30] (30, 45] (45, 60] (60, 98.8]

No data

0 50 100 200 Kilometers
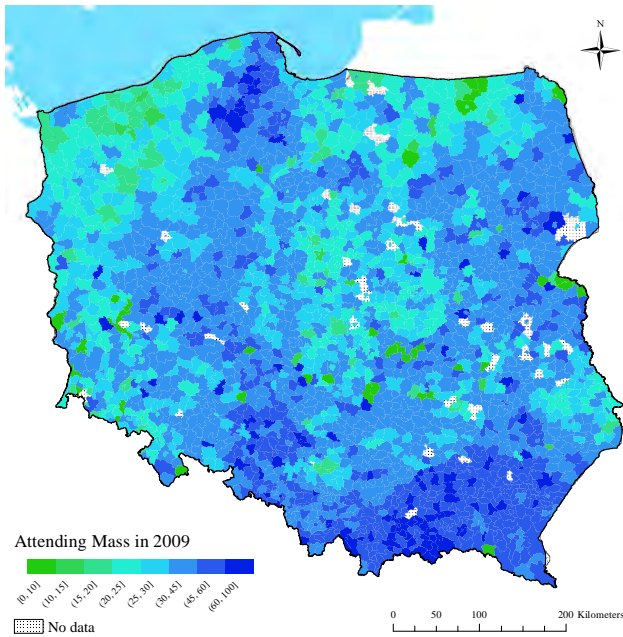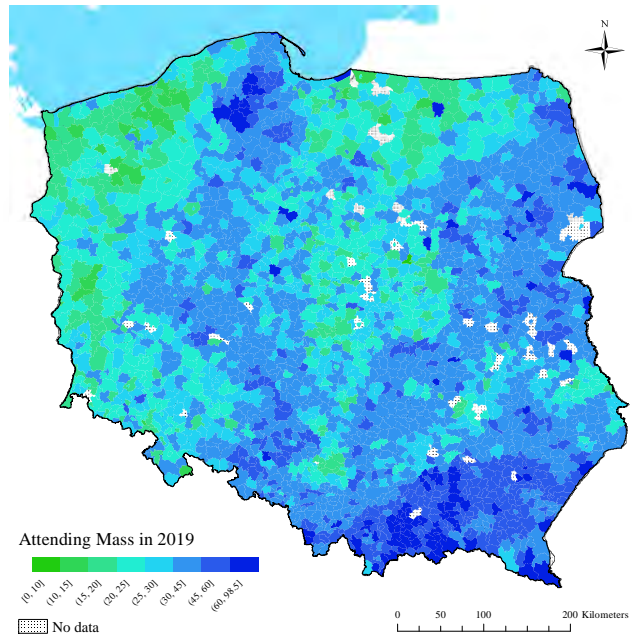
(c) Taking Communion, 2009

(d) Taking Communion, 2019

Taking Communion in 2009

[0, 3] (3, 6] (6, 9] (9, 12] (12, 15] (15, 20] (20, 30] (30, 100]

No data

0 50 100 200 Kilometers

Taking Communion in 2019

[0, 3] (3, 6] (6, 9] (9, 12] (12, 15] (15, 20] (20, 30] (30, 48.6]

No data

0 50 100 200 Kilometers
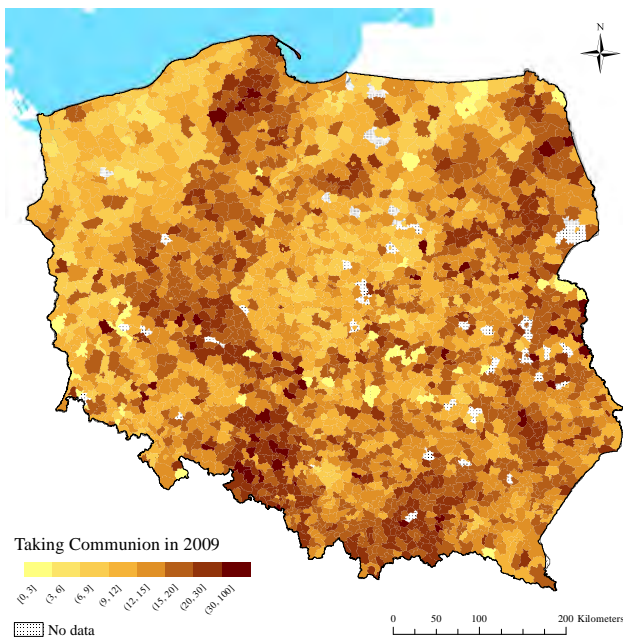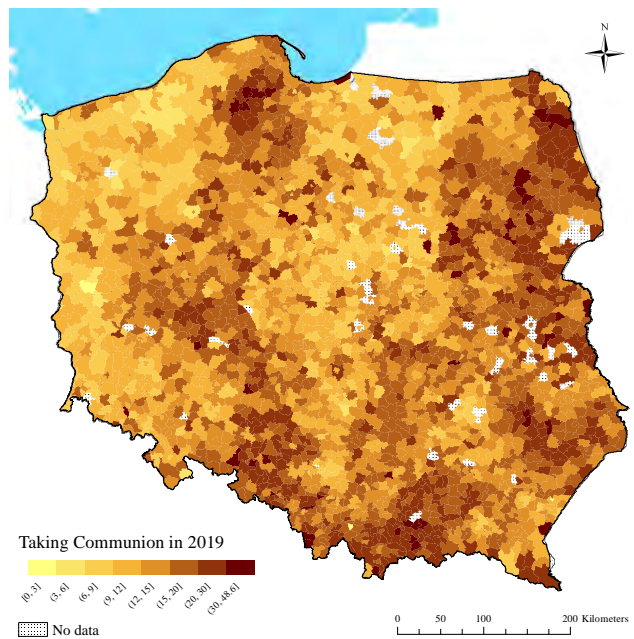
Notes. The map visualizes the distribution of religious participation at the municipality level at the beginning and the end of the analysis period, namely, in 2009 and in 2019. Panels A and B present the distribution of mass attendance in 2009 and in 2019, respectively. Panels C and D present the distribution of taking Communion in 2009 and in 2019, respectively. Source: the Institute of Statistics of the Catholic Church (ISKK).

Figure A7: Church census vs. survey data on religiosity

coef = .135, (robust) se = .005, t = 28.7, N = 5643, R-squared = .14

coef = .09, (robust) se = .007, t = 12.9, N = 4426, R-squared = .03

coef = .082, (robust) se = .008, t = 10.6, N = 5590, R-squared = .02
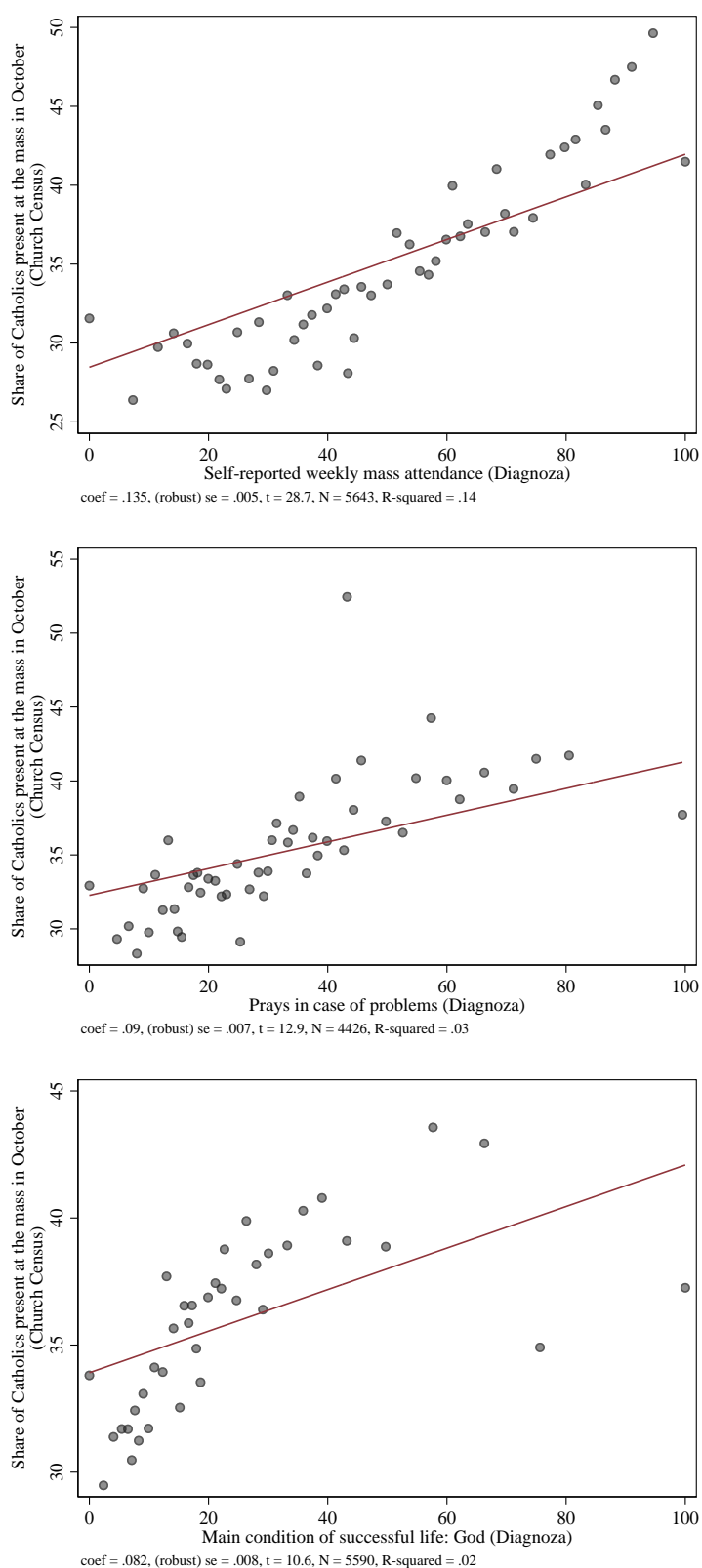
Notes: The figures present binned scatter plots of the relationship between the rate of mass attendance from the Church Census (on the vertical axes) and the average by year and municipality self-reported religiosity measures from the Diagnoza survey in 2009, 2011, 2013, and 2015. The three measures are the shares of respondents who: (1) claim that they attend mass every weak, (2) say that they pray in times of crisis, and (3) chose "God" in the list of several possible alternative answers to the question: "What is the condition of a successful life."

Figure A8: Trends in religious participation overall
and in municipalities with good and bad TVN signal strength

(a) Overall long-term trends, 2000-2019
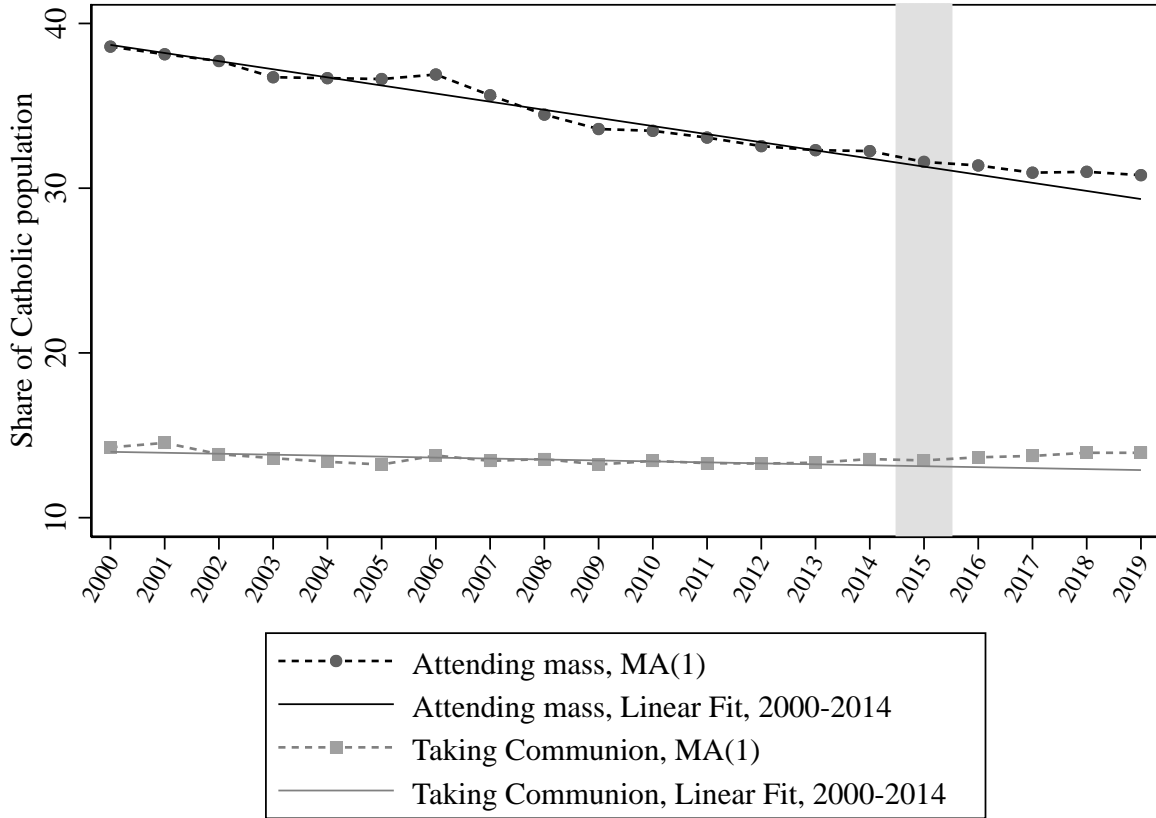
(b) Trends by good and bad TVN signal strength, 2009-2019
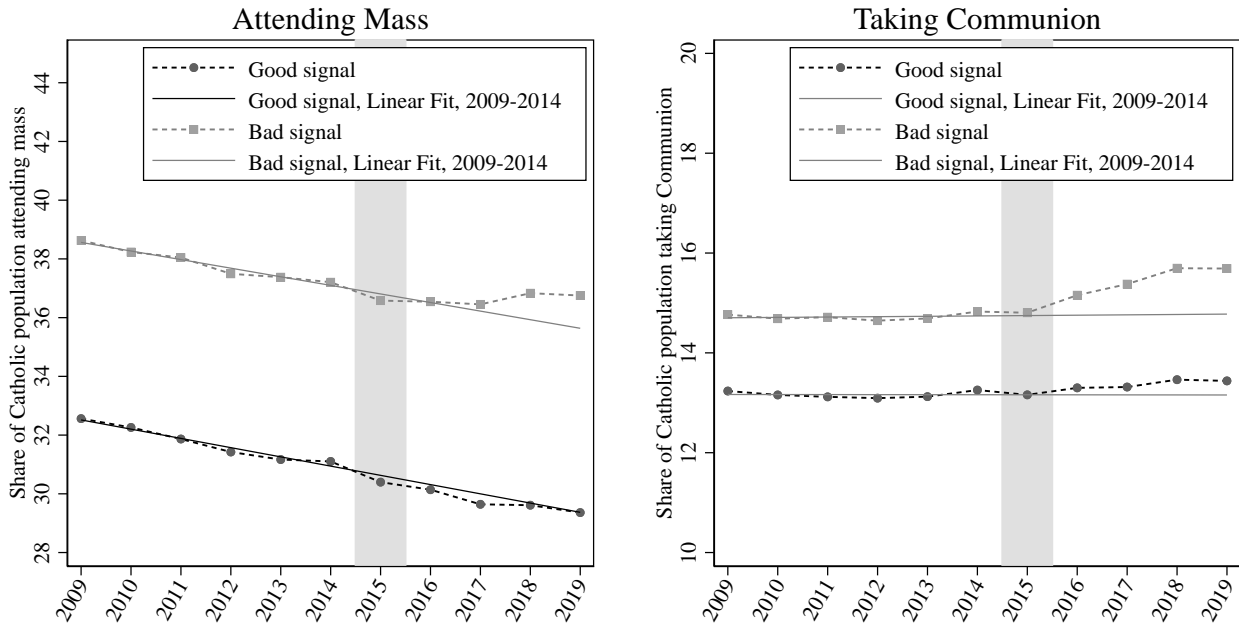
Notes: The figure presents the smoothed MA(1) time series of the rates of attending mass and taking Communion. Panel A presents the overall long-term trend for Poland, and Panel B presents the average trends separately for municipalities with good and bad TVN signal for our period of observation. Solid lines in each plot represent best linear fit for years before 2015. A8

Figure A9: Transmitters and signal strength of the multiplex of entertainment TV channels
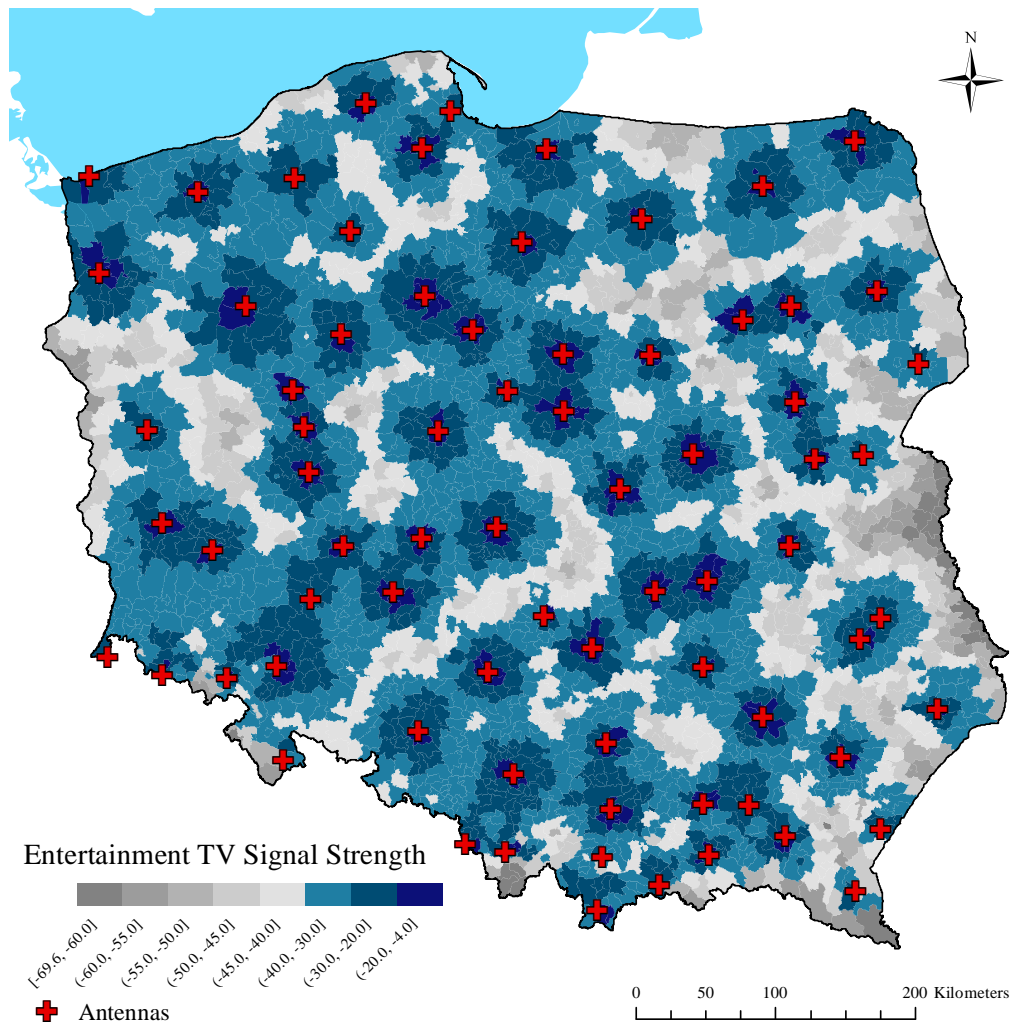
Notes. The map visualizes the signal strength of entertainment TV at the municipality level in 2019. Authors' own calculation.

Figure A10: Quartiles of residualized signal strength of the multiplexes used by TVN, TVPolska, and entertainment TV after controlling for their signal strength in free space

(a) TVN signal strength residual

(b) TVPolska signal strength residual

(c) Entertainment TV signal strength residual
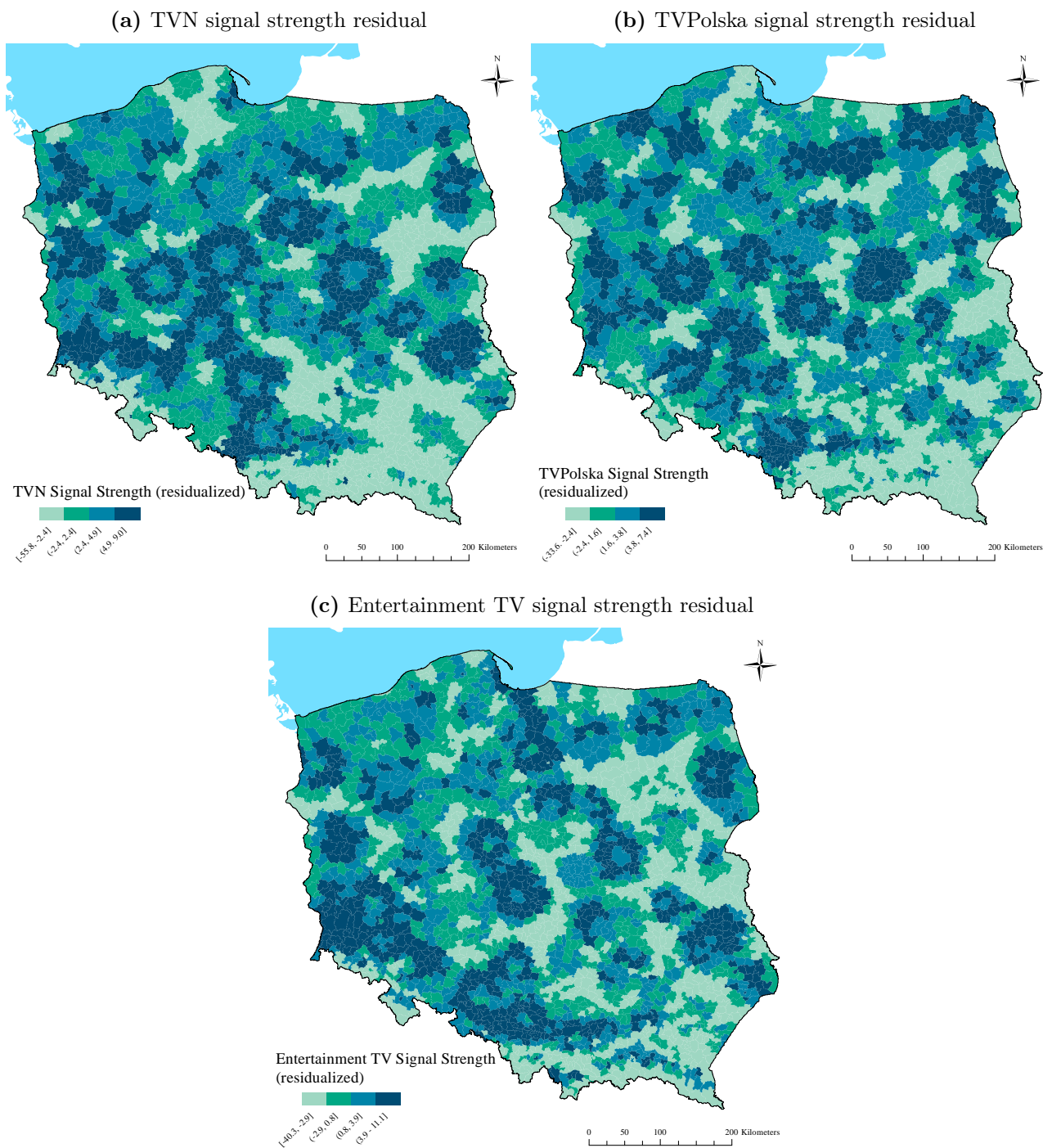
Notes. The maps visualize the residual signal strength of different TV networks at the municipality level after controlling for signal in free space. Authors' own calculation.

Figure A11: Correlation between signal strength in 2015 and 2019

(a) TVN

coef = .982, (robust) se = .006, t = 171., N = 2478, R-squared = .98

(b) TVPolska

coef = .995, (robust) se = .003, t = 344., N = 2478, R-squared = .98
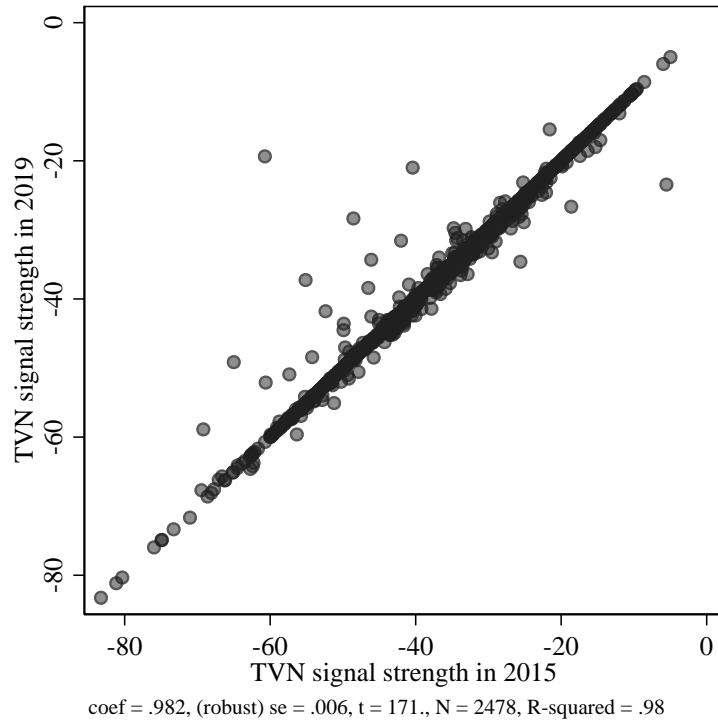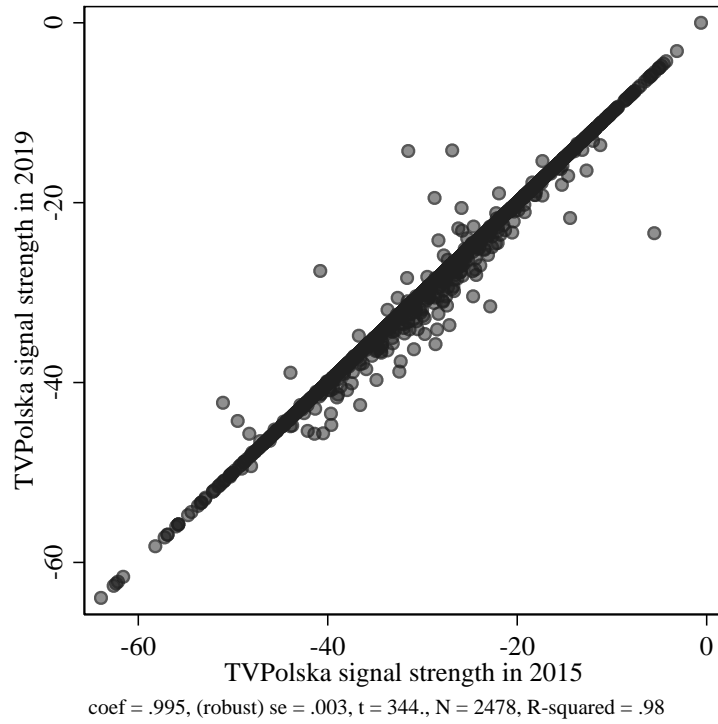
Notes: The figure shows that signal strength in both MUX-2 (TVN) and MUX-3 (TVPolska) has not changed substantially between 2015 and 2019.

Figure A12: Choice of the threshold for a good TVN signal

(a) TVN's signal strength and TVN's good reception across grid cells

bandwidth = .8
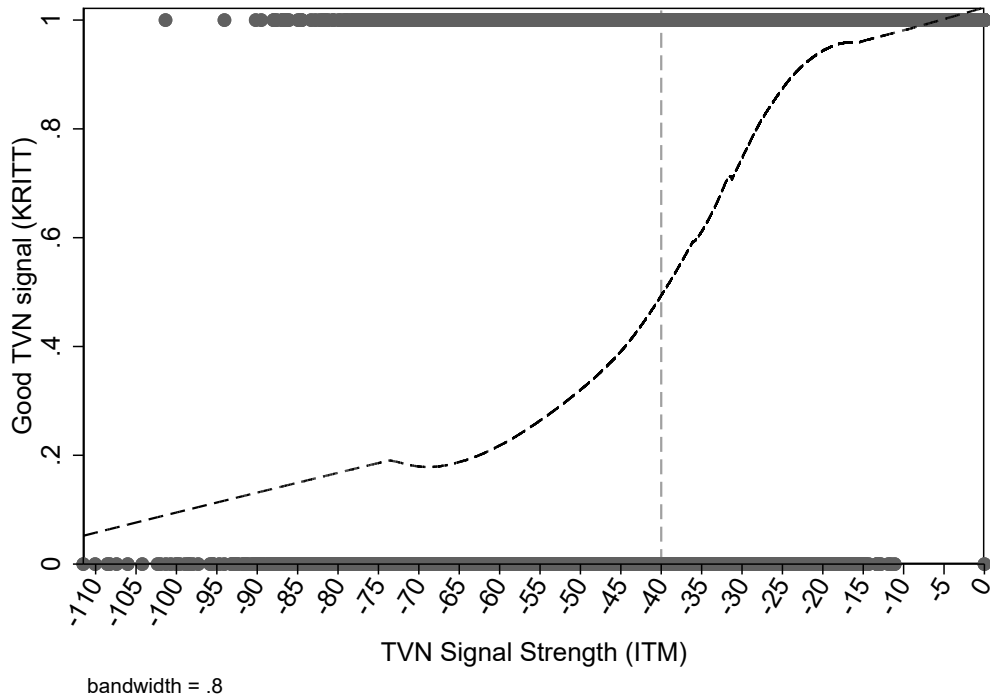
(b) Kernel density of TVN's and TVPolska's signal strength across municipalities

kernel = epanechnikov, bandwidth = 1.7643
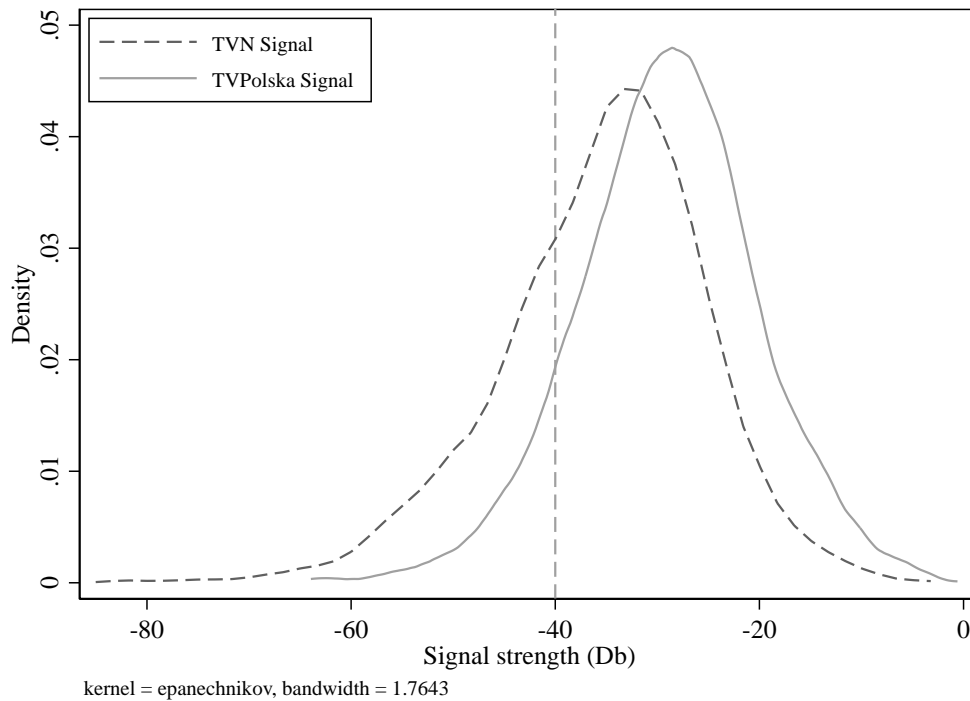
Notes: The figure in Panel A presents the non parametric fit obtained from a local polynomial regression, where we regress dummy for having a good reception coming from the Polish broadcasting regulator, the National Broadcasting Council, KRRIT (for *Krajowa Rada Radiofonii i Telewizji*) on the signal strength we compute using the ITM model across grid cells. The figure in Panel B presents the density density of TVN and TVPolska signal strengths across municipalities. The vertical dashed gray line represents the cutoff point of -40Db we used to dichotomize the signal strength from ITM to have a measure of "Good TVN signal strength."

A12

Figure A13: Scatter plots of the signal strength of different TV networks across municipalities

(a) TVN vs. TVPolska

(b) TVN vs. Entertainment TV
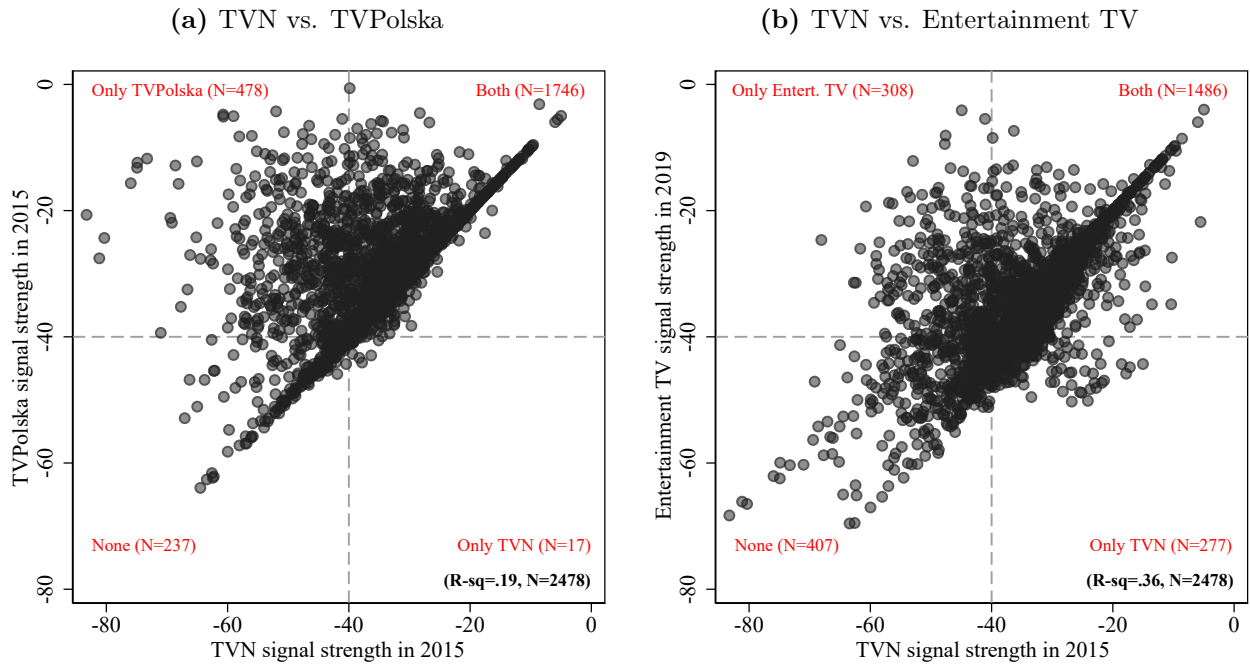
Notes: The figure in Panel A presents the scatter plot of signal strength of TVPolska in 2015 agains that of TVN in 2015, while the figure in Panel B the scatter plot of signal strength of entertainment TV in 2019 against that of TVN in 2015. The vertical and horizontal dashed gray lines represent the cutoff point of -40Db we use to dichotomize signal strength from ITM to have dummy variables indicating good TV signal for each TV channel. These dashed gray lines split each figure into four quadrants, where diagonal elements indicate the municipalities where only one of the two TV channel has a good signal strength, the lower off-diagonal element indicates where both TV channels do not have a good signal strength, and the upper off-diagonal element indicates where both TV channels have a good signal strength. We report the number of municipalities in each quadrant.

Figure A14: Religiosity over time in municipalities with good and bad TVN signal, net of all controls

(a) Attending mass
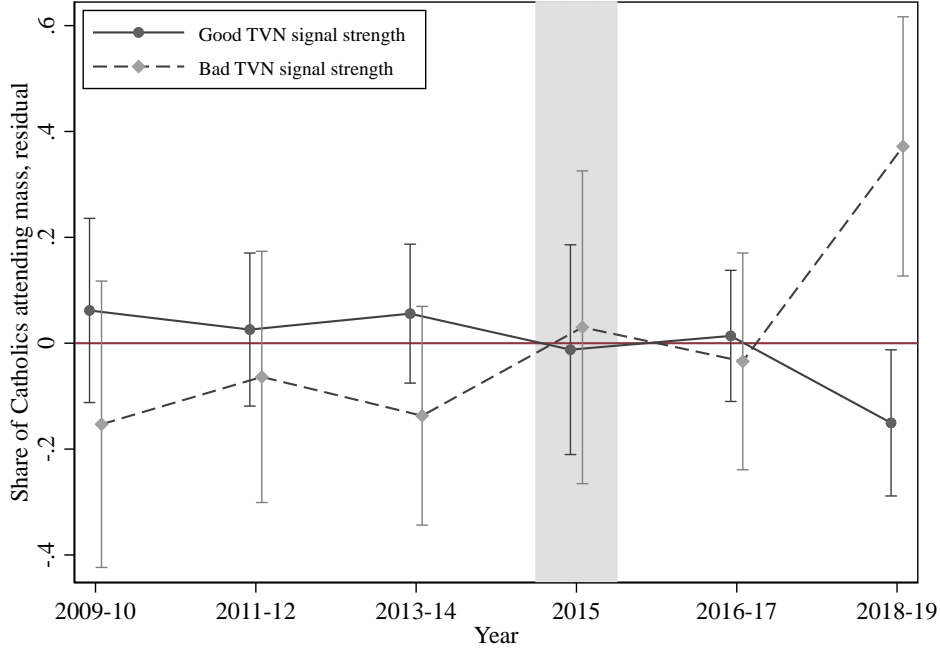
(b) Taking Communion
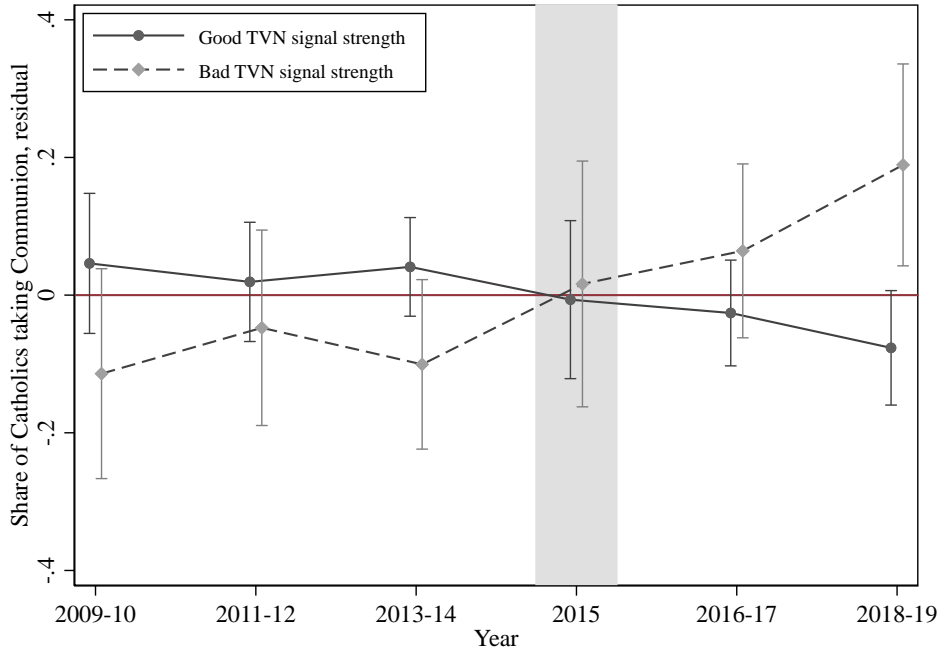
Notes: The figure represents the residual variation in the measures of religious participation over time; obtained from regressing them on year fixed effects, interactions of fixed and mobile internet with year dummies, time-varying nighttime light density per capita, and dummy variables for a natural disaster in the last three years, along with the interactions of the dummies for Austro-Hungarian and Prussian partitions with year trends and the interaction of the free-space TVN signal strength with year trends. We present this figure aggregating by two-year periods to smooth the overtime shocks.

Figure A15: Bin scatter plots: Religious participation and TVN

(a) Dep. Var.: Attending mass,
Expl. Var.: Dummy for good TVN signal
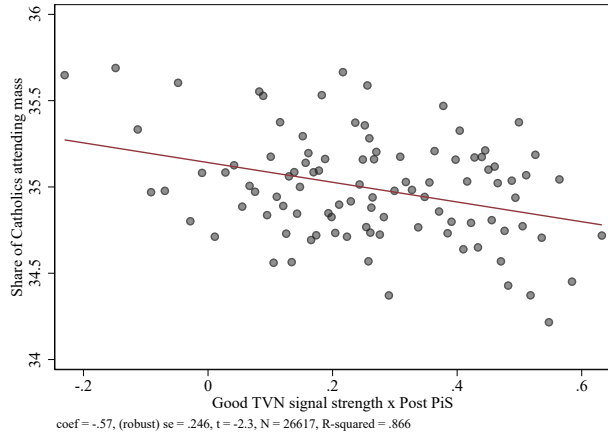
(b) Dep. Var.: Taking Communion,
Expl. Var.: Dummy for good TVN signal

coef = -.57, (robust) se = .246, t = -2.3, N = 26617, R-squared = .866

coef = -.35, (robust) se = .139, t = -2.6, N = 26617, R-squared = .772
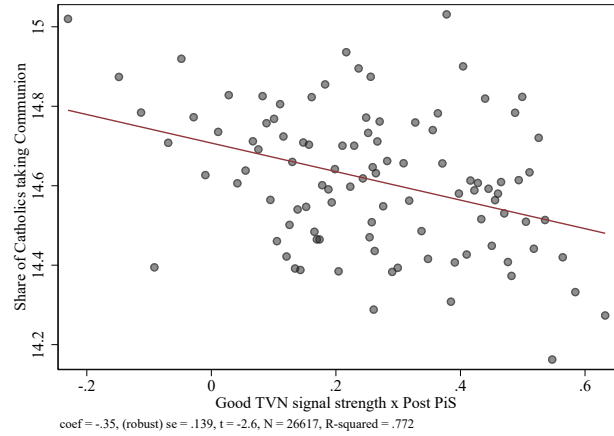
(c) Dep. Var.: Attending mass,
Expl. Var.: Continuous TVN signal
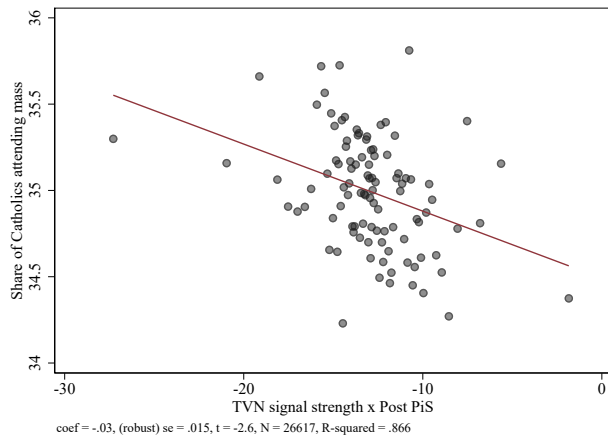
(d) Dep. Var.: Taking Communion,
Expl. Var.: Continuous TVN signal

coef = -.03, (robust) se = .015, t = -2.6, N = 26617, R-squared = .866

coef = -.03, (robust) se = .008, t = -3.9, N = 26617, R-squared = .772
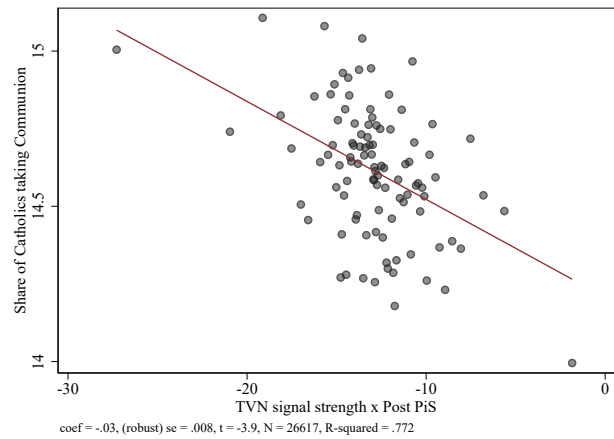
Notes: The figures represent the bin scatter plots visualizing the effect of TVN signal strength on religious participation after PiS came to power. OLS estimates. The unit of analysis is municipality × year. All results are based on regression specifications presented in Table 2: Panel A is based on Panel A Column 5 of Table 2; Panel B on Panel B Column 5 of Table 2; Panel C is based on Panel A Column 7 of Table 2; Panel D on Panel B Column 7 of Table 2. Standard errors are corrected for spatial autocorrelation within 100 km and temporal autocorrelation for the whole time period.

Figure A16: Robustness of the difference-in-differences estimates to different Conley correction thresholds

(a) Dependent Variable: Attending mass
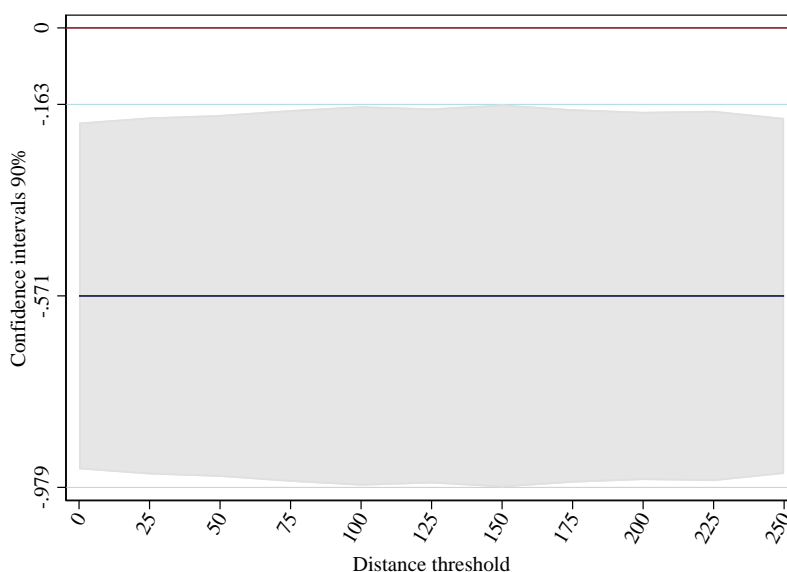
(b) Dependent Variable: Taking Communion
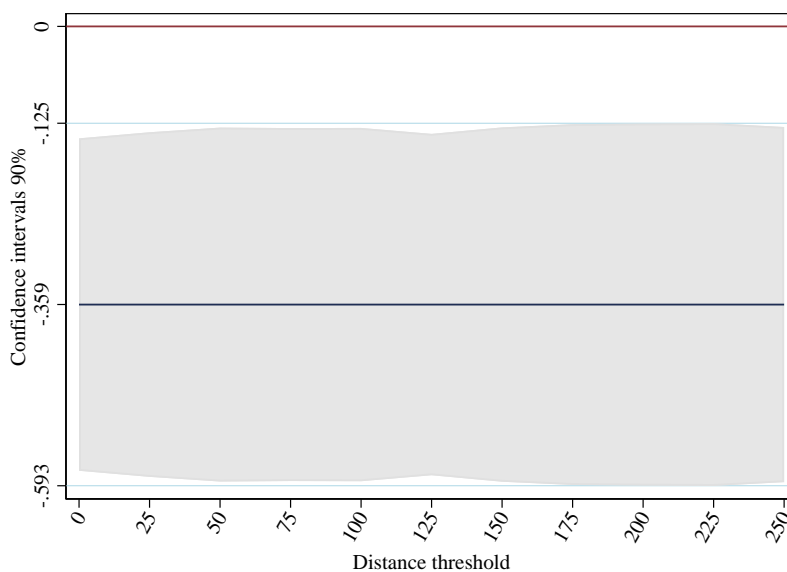
Notes: The figure presents the robustness of inference to different Conley correction thresholds. OLS estimates conditional on controls listed in Columns 5 of Table 2. The unit of analysis is municipality × year. Panel A of the figure corresponds to Panel A Column 5 of Table 2; Panel B of the figure corresponds to Panel B Column 5 of Table 2. The horizontal blue lines represent the point estimates; the shaded areas represent the confidence intervals at 90% for different spatial Conley correction thresholds (indicated on the x-axis). Each threshold in each panel represents the confidence interval obtained from a different regression where standard errors are corrected for spatial autocorrelation within that distance threshold and temporal autocorrelation for the whole time period. The results presented for distance threshold "0" are equivalent to the standard errors clustered at the municipality level. The horizontal red lines represent the null effect.

Figure A17: Municipalities with good and bad TVN reception and the matched sample

(a) Good TVN Signal

(b) Matched sample

TVN Signal Strength
- Bad signal
- Good signal
- ✚ Antennas

0   50   100   200 Kilometers

Matching Sample
- Untreated
- Treated
- Not in the matched sample

0   50   100   200 Kilometers
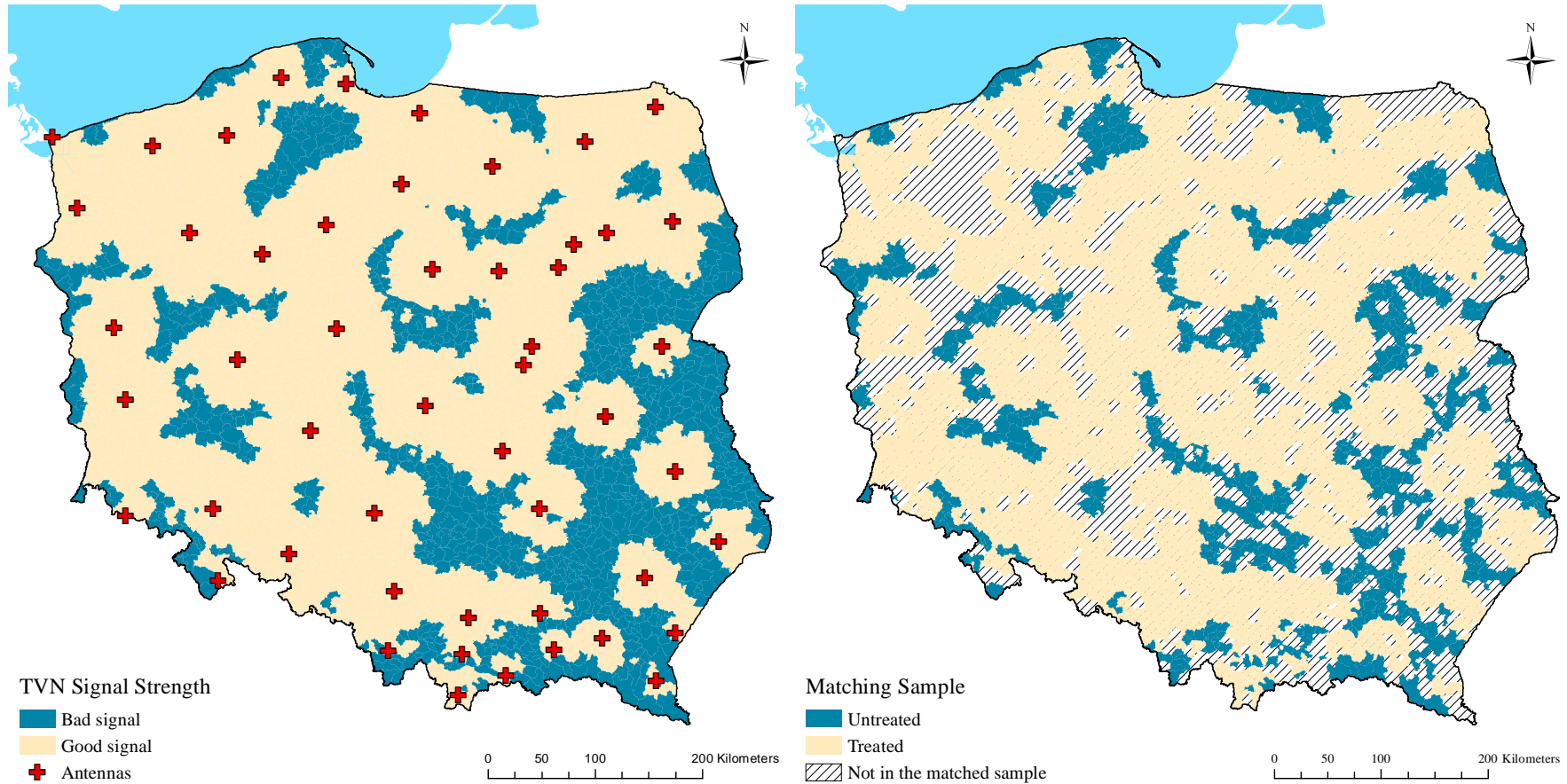
Notes. The maps visualize the "Good TVN signal strength" at the municipality level and the matched sample. We match each treated municipality (with "Good TVN signal") to an untreated municipality (without "Good TVN signal") within 50 km distance, based on a propensity score imposing a minimum distance of one standard deviation in TVN signal strength between municipalities in each pair. We exclude from the sample all municipalities with a TVN transmitter and all pairs that are not balanced in terms of the presence of a TVPolska transmitter. Propensity score is calculated by regressing a dummy variable, indicating whether a municipality is treated, on the following covariates: fixed and mobile internet availability, nighttime light density per capita in 2009, 2009 level of religiosity, pre-2009 level of support for PiS, dummy variables for Austro-Hungarian and Prussian partitions, log total population, and share of working-age population.

Figure A18: Event-study specification, political outcomes

(a) Dependent Variable:
Support for PiS in parliamentary elections

(b) Dependent Variable:
Turnout in parliamentary elections

(c) Dependent Variable:
Support for PiS in European Parliament elections

(d) Dependent Variable:
Turnout in European Parliament elections
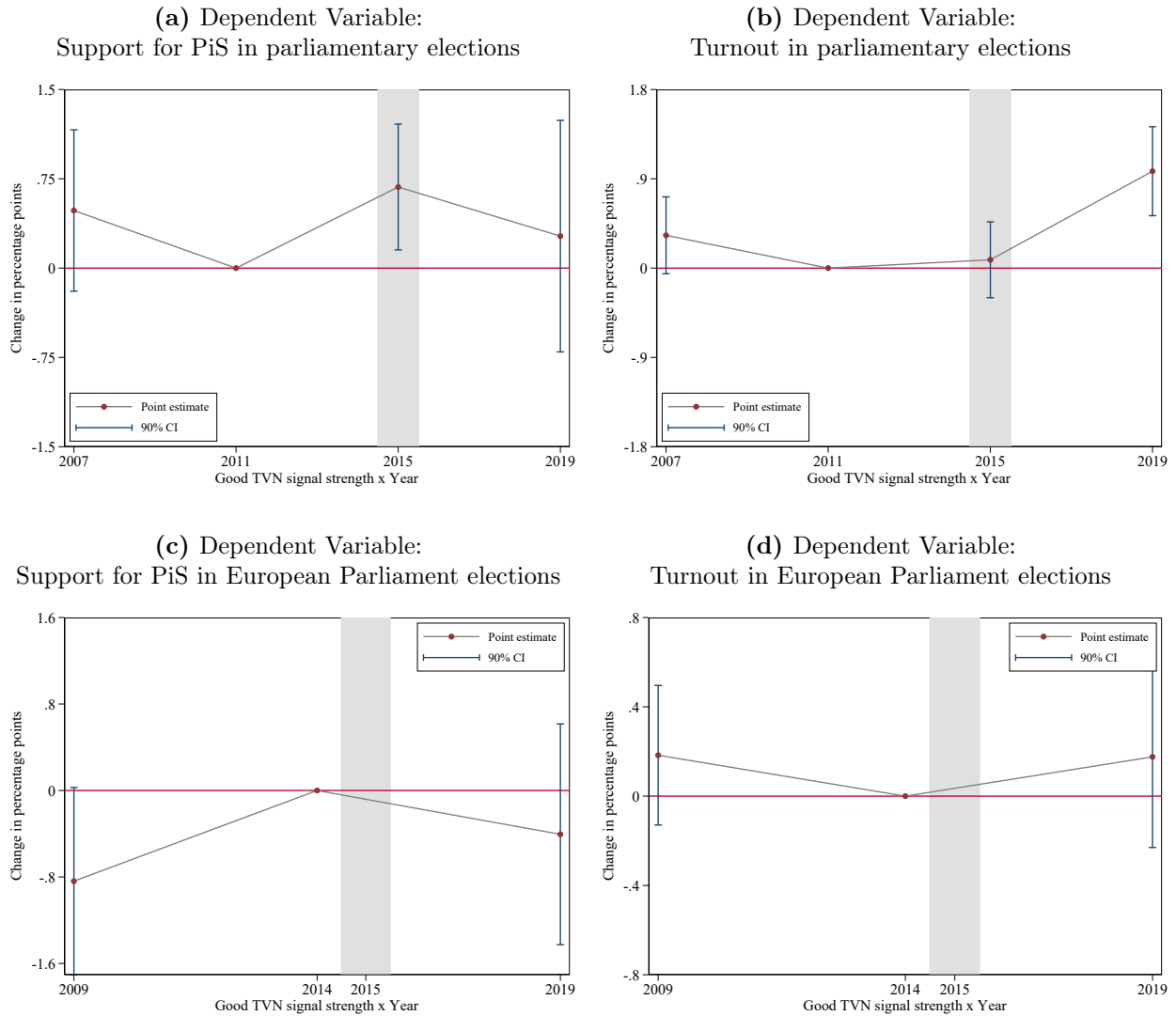
Notes. The figure presents the event-study estimates of the exposure to good TVN signal strength on political outcomes. The unit of analysis is municipality × year. Point estimates and 90% confidence intervals are from OLS regressions of the respective outcome variables on year and municipality fixed effects, conditional on covariates listed in Columns 1 and 3 of Table A9. Years 2011 and 2014 are the excluded time periods for parliamentary and European parliament elections, respectively. Standard errors are corrected for spatial autocorrelation within 100 km and temporal autocorrelation for the whole time period.

Figure A19: Distribution of difference in days between two rounds

N=7,369, Median days = 23
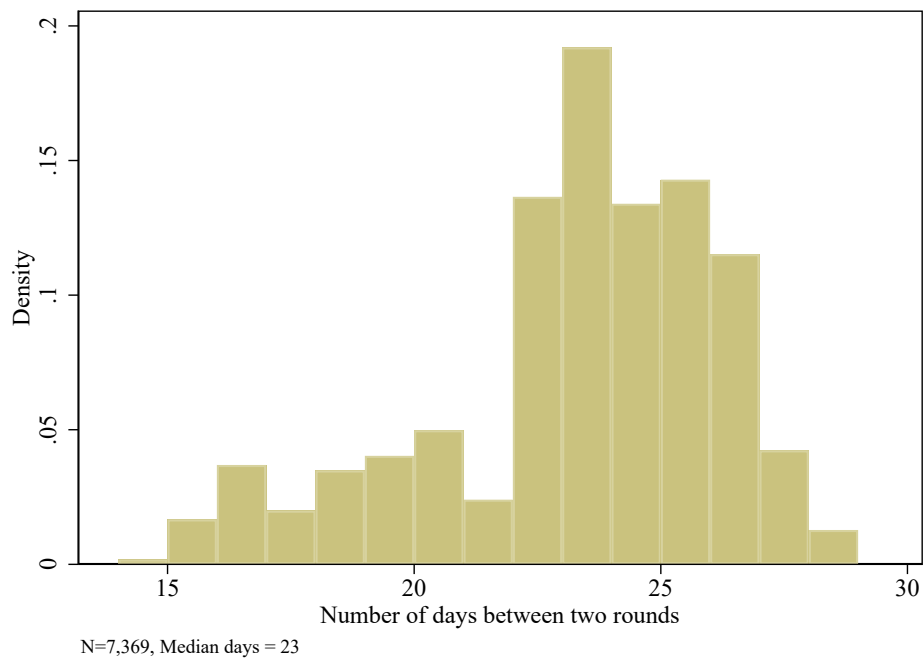
Notes: The figure presents the histogram of the number of days between the day when the respondent took the first-round survey and the day when the respondent took the follow-up survey.

Figure A20: Retention rate between two survey rounds by treatment status

Participated in the follow up
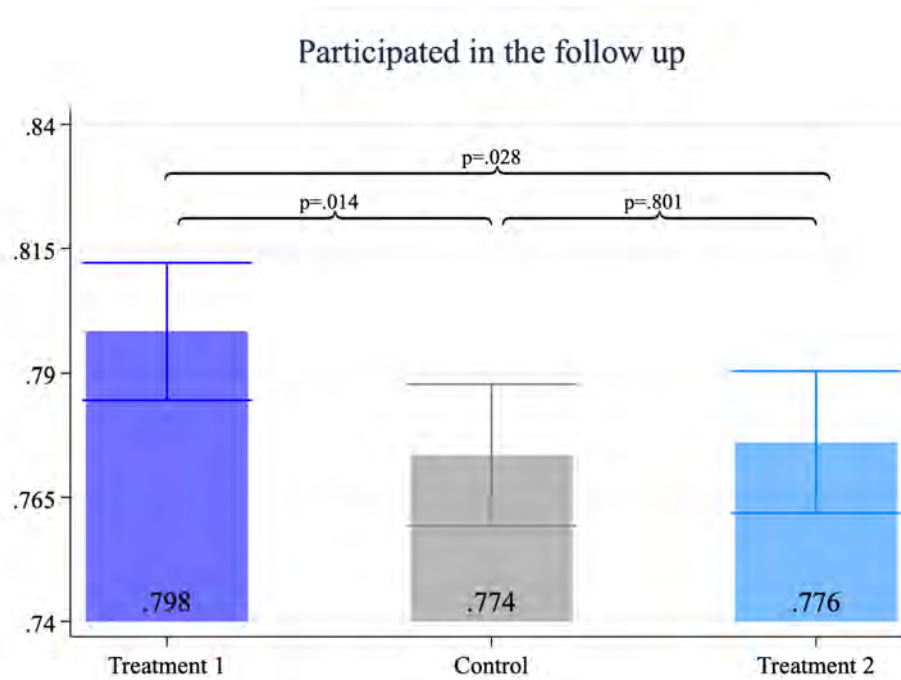
Notes. The figure presents the ATE of the experimental treatments on the participation status in the follow-up round of the survey-experiment. OLS estimates. The figure presents results from a single regression. The unit of analysis is individual. The regression controls for randomization strata fixed effects, unbalanced controls reported in Table A13, and initial level of religiosity self-reported in pre-treatment survey. P-values from heteroskedasticity-robust standard errors are reported.

Figure A21: Heterogenous experimental effects: additional outcomes

(a) First round
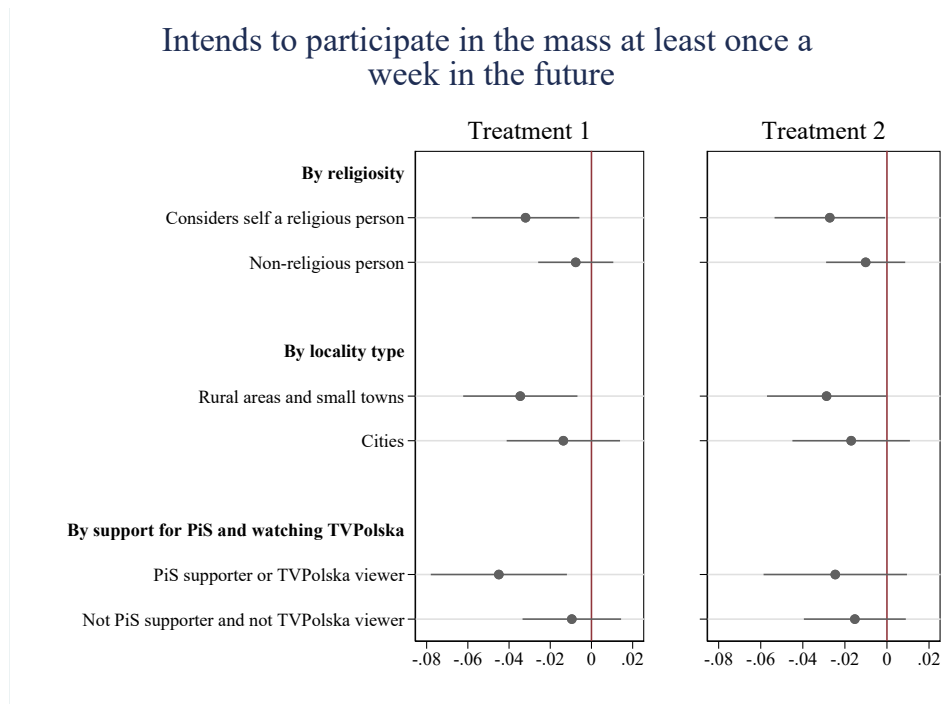
Chose a religious foundation to donate

(b) Follow-up round

Intends to participate in the mass at least once a week in the future

Notes. The figure presents the heterogeneous effects of the experimental treatments on the additonal outcomes in the first and the follow-up rounds of the survey-experiment, in Panels A and B, respectively. OLS estimates. Each graph on the figure presents results from three different regressions for three dimensions of heterogeneity, indicated by a subtitle on the left in bold. The unit of analysis is individual. All regressions control for randomization strata fixed effects, unbalanced controls reported in Table A13, and initial level of religiosity self-reported in pre-treatment survey. P-values from heteroskedasticity-robust standard errors are reported.

Figure A22: Heterogeneity with respect to previous donations to religious and non-religious charity
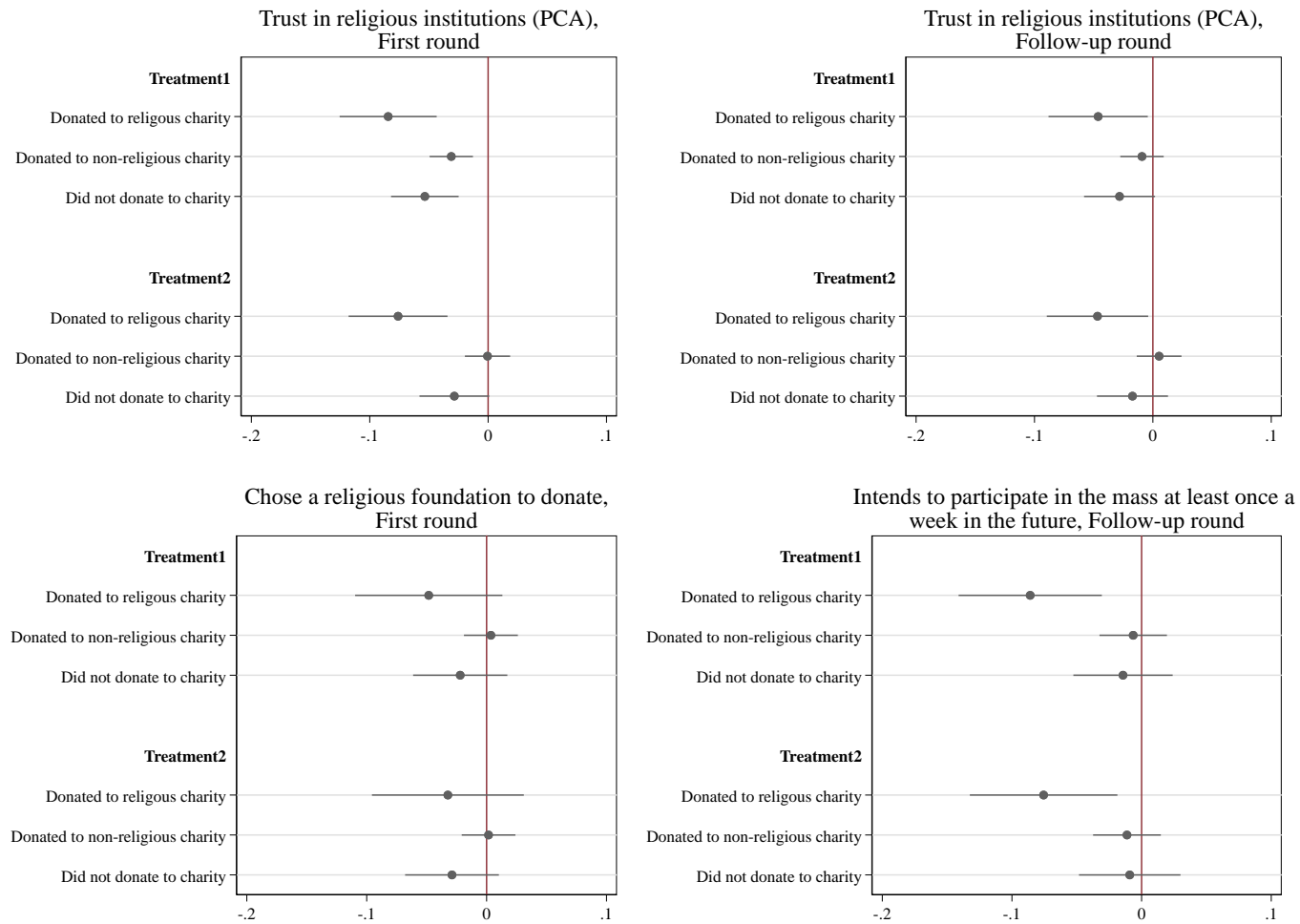
Trust in religious institutions (PCA),
First round

Trust in religious institutions (PCA),
Follow-up round

Chose a religious foundation to donate,
First round

Intends to participate in the mass at least once a
week in the future, Follow-up round

Notes. The figure presents the heterogeneous effects of the experimental treatments on the main religiosity outcomes with respect to having donated time or money to a religious charity or to a non-religious charity in the last year, in each round of the survey-experiment. OLS estimates. Each graph on the figure presents results from a different regression. The unit of analysis is individual. All regressions control for randomization strata fixed effects, unbalanced controls reported in Table A13, and initial level of religiosity self-reported in pre-treatment survey. P-values from heteroskedasticity-robust standard errors are reported.

Table A1: Descriptive statistics: Observational study

	Mean	Median	SD	Min	Max	Obs.
Panel A: Religious participation						
Share of Catholic population attending mass	35.097	33	12.294	4	231	26,629
Share of Catholic population taking Communion	14.681	14	5.724	0	147	26,629
Share of Catholic pop. attending mass [winsorized top 1%]	34.987	33	11.801	4	71	26,629
Share of Catholic pop. taking Communion [winsorized top 1%]	14.612	14	5.331	0	35	26,629
Panel B: TV antennas and signal strength						
TVN antenna within 10 kms	0.052	0	0.222	0	1	2,478
TVPolska antenna within 10 kms	0.177	0	0.382	0	1	2,478
Entertainment antenna within 10 kms	0.071	0	0.256	0	1	2,478
Good TVN signal strength in 2015	0.711	1	0.453	0	1	2,478
Good TVPolska signal strength in 2015	0.897	1	0.303	0	1	2,478
Good Entertainment TV signal strength in 2019	0.724	1	0.447	0	1	2,478
Panel C: Fixed and Mobile Internet, Night-time lights per capita, Disasters						
(log) Distance to optic-fiber internet nodes (km)	1.016	1	0.507	0	3	2,478
Speed of 3G mobile internet (Mbits/s)	38.494	38	9.825	9	74	2,478
Night-time lights per capita until 2011	0.208	0	0.618	0	8	27,258
Night-time lights per capita after 2011	0.046	0	0.099	0	6	27,258
Occurence of natural disaster	0.160	0	0.366	0	1	27,478
Panel D: Cross-sectional covariates						
Austro-Hungarian partition	0.144	0	0.351	0	1	2,478
Prussian partition	0.410	0	0.492	0	1	2,478
Russian partition	0.447	0	0.497	0	1	2,478
Population (1000s) in 2007	15.348	7	50.704	1	1707	2,473
Share of working age population in 2007	67.020	68	2.965	48	78	2,473
Share of elderly population in 2007	15.827	15	3.326	7	42	2,473
Share of population with higher education in 2007	6.101	5	2.844	2	31	2,473
Share of population with secondary education in 2002	17.766	17	3.948	7	30	2,473
Share of population employed in agriculture in 2005	37.496	35	19.993	0	80	2,474
Share of population that speaks only Polish in 2002	97.429	99	4.938	61	100	2,474
(log) Municipality revenue per capita in 2007	7.724	8	0.197	7	10	2,452
(log) EU subsidies to gminy per capita in 2007	2.190	2	2.194	0	8	2,395
(log) Industrial production per capita in 2006	6.353	7	1.659	0	11	2,474
Wages as percent relative to country average in 2007	81.410	79	10.356	62	184	2,382
Rural areas	0.642	1	0.479	0	1	2,478
Railways within 10 km	0.942	1	0.233	0	1	2,474
Altitude (m)	185.886	155	131.996	-3	1219	2,474
Pre-2009 support for PiS (PCA)	0.000	-0	1.604	-4	5	2,472
PiS vote share in 2009 EU elections	29.465	27	12.678	2	81	2,475
PiS vote share in 2007 parliamentary elections	35.618	34	12.612	1	79	2,474
PiS vote share in 2005 presidential elections	63.716	64	15.944	17	97	2,475
Panel E: Political outcomes						
Vote share of PiS in parliamentary elections	41.251	40	15.201	1	89	9,922
Turnout in parliamentary elections	47.623	47	8.952	23	100	9,922
Vote share of PiS in European Parliament elections	42.959	41	17.493	2	89	7,457
Turnout in European Parliament elections	26.277	22	11.798	7	100	7,457

Notes: The table presents the summary statistics for the outcome, main treatment variables, and control variables used in the observational study.

Table A2: TVN signal strength and viewership

Dependent variable:	Share of TVN watchers			
	(1)	(2)	(3)	(4)
Panel A:	**Good TVN signal strength**			
𝟙{Good TVN signal strength}	0.175***	0.189***	0.283***	0.140**
	(0.008)	(0.000)	(0.002)	(0.011)
𝟙{Good TVPolska signal strength}			-0.155	
			(0.311)	
𝟙{Good TVN signal strength} × Post				0.141**
				(0.020)
R-squared	0.404	0.513	0.565	0.525
SD of variable of interest	0.151	0.151	0.151	0.151
Panel B:	**Continuous TVN signal strength**			
TVN signal strength	0.008***	0.008***	0.012***	0.007***
	(0.001)	(0.001)	(0.007)	(0.006)
TVPolska signal strength			0.002	
			(0.781)	
TVN signal strength × Post				0.003
				(0.293)
R-squared	0.411	0.496	0.576	0.499
SD of variable of interest	4.241	4.241	4.241	4.241
Year FE	✓	✓	✓	✓
Free TVN signal × Year FE	✓	✓	✓	✓
Population		✓	✓	✓
Free TVPolska signal × Year FE			✓	
Observations	176	176	176	176
Mean of dependent variable	0.491	0.491	0.491	0.491

Notes: The table presents the effect of TVN signal on the share of viewers of the TVN's main prime-time news among the viewers of both TVN's and TVPolska's prime-time news programs. OLS estimates. The unit of analysis is region × year. Panel A uses the good TV signal strength dummy; Panel B uses the continuous TV signal strength measure. Column 1 controls only for year fixed effects and free-space TVN signal strength. Column 2, in addition, controls for the log regional population. Column 3 includes the TVPolska signal strength along with the free-space TVPolska signal strength to the list of covariates. Column 4 allows for a differential effect of TVN signal after PiS came to power. Standard errors corrected for clusters at the regional level are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A3: Determinants of Entertainment TV reception and antenna locations

Covariates:	Entertainment TV			
	Good signal strength		Antenna present	
	All	LASSO	All	LASSO
	(1)	(2)	(3)	(4)
Free-space entertainment TV signal strength in 2019	0.046***	0.045***		
	(0.004)	(0.004)		
Top population decile	0.045	-0.013	0.008	0.040
	(0.030)	(0.019)	(0.031)	(0.026)
Austro-Hungarian partition	-0.039	-0.094*	0.070***	0.056***
	(0.049)	(0.050)	(0.021)	(0.019)
Prussian partition	0.032	0.010	0.012	
	(0.054)	(0.031)	(0.009)	
(log) Altitude	-0.021		0.024***	0.015***
	(0.013)		(0.008)	(0.006)
Share of population employed in agriculture	-0.002***	-0.003***	-0.000	
	(0.000)	(0.001)	(0.000)	
Speed of 3G mobile internet	-0.003**		0.001	0.002***
	(0.001)		(0.001)	(0.001)
Share of population with higher education	-0.004		0.008**	
	(0.006)		(0.004)	
Share of population with secondary education	0.001		0.002	
	(0.003)		(0.002)	
Pre-2009 support for PiS (PCA)	0.015		0.006	
	(0.017)		(0.006)	
(log) Night-time lights per capita	0.045***		0.020	
	(0.017)		(0.012)	
Share of working age population	0.018		-0.002	
	(0.011)		(0.006)	
(log) Municipality revenue per capita	-0.111**		0.045	
	(0.043)		(0.031)	
Share of elderly population	0.008		-0.002	
	(0.008)		(0.004)	
(log) Industrial production per capita	0.008		-0.006	
	(0.006)		(0.004)	
Rural areas	0.012		-0.005	
	(0.025)		(0.011)	
(log) EU subsidies to municipality per capita	0.004		-0.007***	
	(0.003)		(0.002)	
Wages relative to country average	0.002		-0.000	
	(0.002)		(0.000)	
(log) Distance to optic-fiber internet nodes (km)	-0.021		-0.023**	
	(0.019)		(0.010)	
Railways within 10 km	-0.036		0.000	
	(0.033)		(0.028)	
Share of population that speaks only Polish	-0.004		-0.000	
	(0.003)		(0.000)	
Religious participation (PCA), 2009	-0.007		-0.009***	
	(0.006)		(0.003)	
Observations	2478	2478	2478	2478
R-squared	0.295	0.275	0.061	0.028
Mean of dependent variable	0.72	0.72	0.07	0.07

Notes. The table presents the correlates of the good signal strength quality of the Entertainment TV and the location of its transmitters. OLS estimates. The unit of analysis is municipality. Transmitter presence is a dummy variable that takes the value of 1 if there is a TV transmission antenna for the network within 10 km distance of municipality centroid, and 0 otherwise, multiplied by 100. Free-space signal strength (in Db) is computed with ITM model. Columns 1 and 3 control for all the listed covariates. Columns 2 and 4 control for the top population decile and the covariates selected by robust LASSO method Belloni et al. (2013). Standard errors corrected for spatial autocorrelation within 100 km are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A4: Correlation between initial religiosity and good TV signal strength for TVN and TVPolska

	Mass attendance in 2009		Taking Communion in 2009	
	(1)	(2)	(3)	(4)
Panel A:	**Good TVN signal strength and religiosity**			
𝟙{Good TVN signal strength in 2015}	-3.461**	-1.355	-0.839	-0.426
	(1.526)	(0.920)	(0.563)	(0.346)
Free-space TVN signal strength in 2015		-0.090		-0.047
		(0.075)		(0.037)
Prussian partition		0.672		0.388
		(2.536)		(1.295)
Austro-Hungarian partition		17.543***		2.549**
		(2.021)		(1.291)
Observations	2418	2418	2418	2418
R-squared	0.017	0.263	0.005	0.028
Panel B:	**Good TVPolska signal strength and religiosity**			
𝟙{Good TVPolska signal strength in 2015}	-1.396	-0.796	-0.917*	-0.679
	(1.538)	(1.275)	(0.552)	(0.528)
Free-space TVPolska signal strength in 2015		-0.157*		-0.052
		(0.095)		(0.036)
Prussian partition		0.647		0.385
		(2.555)		(1.319)
Austro-Hungarian partition		18.399***		2.772**
		(2.287)		(1.264)
Observations	2418	2418	2418	2418
R-squared	0.001	0.265	0.003	0.029

Notes: The table presents the correlation between the initial levels of religious participation and the reception of TVN and TVPolska. OLS estimates. The unit of analysis is municipality. Panel A considers the TVN reception as the variable of interest; while Panel B considers the TVPolska reception. Columns 1 and 3 present unconditional correlations between the share of Catholics attending mass in 2009 and taking Communion in 2009 and the dummies for good signal strength. Columns 2 and 4 present the same correlations controlling for the dummies for Austro-Hungarian and Prussian partitions and free-space signal strength of the TV channel of interest. (The Russian Empire partition is the omitted category.) Standard errors corrected for spatial autocorrelation within 100 km are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A5: Difference-in-differences: Heterogeneous effects of TVN on religious participation

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A:	**Share of Catholic population attending mass**					
𝟙{Good TVN signal strength} × Post PiS	-0.791***	-0.559**	-0.529*	-0.944***	-0.554**	-0.702*
	(0.227)	(0.264)	(0.289)	(0.328)	(0.217)	(0.367)
× 𝟙{Religious participation in 2009 > Median}		-0.701*				
		(0.410)				
× 𝟙{Rural}			-0.375			
			(0.368)			
× 𝟙{Pre-2009 support for PiS > Median}				0.610		
				(0.396)		
× Share of 15-29 year olds					0.159	
					(0.105)	
× Share of 65+ year olds					0.097	
					(0.082)	
× 𝟙{Stationary internet > Median}						-0.136
						(0.365)
× 𝟙{Mobile internet > Median}						-0.040
						(0.388)
𝟙{Good TVN signal strength} × 2015	-0.401**	-0.286	-0.401**	-0.402**	-0.389**	-0.400**
	(0.194)	(0.177)	(0.193)	(0.196)	(0.196)	(0.195)
R-squared	0.864	0.867	0.864	0.864	0.865	0.864
Panel B:	**Share of Catholic population taking Communion**					
𝟙{Good TVN signal strength} × Post PiS	-0.557***	-0.331**	-0.244	-0.507***	-0.396***	-0.542**
	(0.124)	(0.163)	(0.175)	(0.190)	(0.124)	(0.215)
× 𝟙{Religious participation in 2009 > Median}		-0.487**				
		(0.245)				
× 𝟙{Rural}			-0.467**			
			(0.229)			
× 𝟙{Pre-2009 support for PiS > Median}				0.119		
				(0.234)		
× Share of 15-29 year olds					0.031	
					(0.064)	
× Share of 65+ year olds					0.009	
					(0.043)	
× 𝟙{Stationary internet > Median}						-0.037
						(0.210)
× 𝟙{Mobile internet > Median}						0.018
						(0.227)
𝟙{Good TVN signal strength} × 2015	-0.273**	-0.237*	-0.273**	-0.273**	-0.267*	-0.273**
	(0.138)	(0.141)	(0.138)	(0.138)	(0.139)	(0.139)
R-squared	0.769	0.772	0.769	0.770	0.770	0.769
Year and Municipality FEs	✓	✓	✓	✓	✓	✓
Observations	26,617	26,240	26,617	26,617	26,578	26,617
SD of the TVN signal measure	0.45	0.45	0.45	0.45	0.45	0.45

Notes. The table presents heterogeneity of the difference-in-difference estimates of the effect of TVN on religious participation after PiS came to power with respect to municipality characteristics. OLS estimates. The unit of analysis is municipality × year. The dependent variables are the shares of Catholics attending mass and taking Communion in Panels A and B, respectively. All specifications control for year and municipality fixed effects. Standard errors corrected for spatial autocorrelation within 100 km and temporal autocorrelation for the whole time period are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A6: Robustness of the difference-in-differences estimates to additional controls

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Dependent Variable:	**Share of Catholic pop. attending mass**					
𝟙{Good TVN signal strength} × Post PiS	-0.565**	-0.543**	-0.679***	-0.547**	-0.624***	-0.598**
	(0.242)	(0.242)	(0.240)	(0.242)	(0.237)	(0.237)
𝟙{Good TVN signal strength} × 2015	-0.260	-0.283	-0.333	-0.260	-0.322	-0.337
	(0.205)	(0.211)	(0.212)	(0.204)	(0.209)	(0.216)
R-squared	0.8686	0.8695	0.8736	0.8687	0.8743	0.8751
Mean of dependent variable	35.03	35.03	35.03	35.03	35.03	35.03
Osters delta						5.04
Panel B: Dependent Variable:	**Share of Catholic pop. taking Communion**					
𝟙{Good TVN signal strength} × Post PiS	-0.351**	-0.339**	-0.387***	-0.330**	-0.357**	-0.344**
	(0.137)	(0.139)	(0.141)	(0.137)	(0.140)	(0.141)
𝟙{Good TVN signal strength} × 2015	-0.203	-0.211	-0.232	-0.193	-0.220	-0.223
	(0.149)	(0.157)	(0.156)	(0.153)	(0.159)	(0.166)
R-squared	0.7743	0.7756	0.7803	0.7745	0.7812	0.7824
Mean of dependent variable	14.62	14.62	14.62	14.62	14.62	14.62
Osters delta						3.07
Year and Municipality FEs	✓	✓	✓	✓	✓	✓
Fixed/Mobile Internet × Year FEs; Night lights; Disasters	✓	✓	✓	✓	✓	✓
Free-space TVN signal strength × Post PiS and in 2015	✓	✓	✓	✓	✓	✓
Partitions of Poland × Year FE	✓	✓	✓	✓	✓	✓
Population deciles × Year FEs		✓				✓
Religious participation, 2009 × Year FEs			✓		✓	✓
Pre-2009 PiS support × Year FEs				✓	✓	✓
Observations	26,179	26,179	26,179	26,179	26,179	26,179
SD of variable of interest	0.45	0.45	0.45	0.45	0.45	0.45

Notes. The table presents the robustness of the difference-in-differences estimation to controlling for various potential confounding factors. OLS estimates. The unit of analysis is municipality × year. The dependent variables are the shares of Catholics attending mass and taking Communion in Panels A and B, respectively. Column 1 controls for year and municipality fixed effects and the interactions of fixed and mobile internet with year dummies, time-varying nighttime light density per capita, and dummy variables for a natural disaster in the last three years, free-space TVN signal strength interacted with post-PiS and 2015 dummies, and the interactions of the dummies for Austro-Hungarian and Prussian partitions with year dummies. In addition, Column 2 includes the interactions of dummies for population deciles with year dummies; Column 3 controls for the interactions of the 2009 level of religiosity with year dummies; Column 4 – for the interactions of the pre-2009 level of support for PiS with year dummies; Column 5 for both the interactions of the 2009 level of religiosity with year dummies and the interactions of the pre-2009 level of support for PiS with year dummies. Column 6 controls for all additional covariates included in Columns 2 to 4 together. At the bottom of each panel, we report Oster's δ, which is calculated under the assumption that, net of municipality and year fixed effects, the R^2_{max} is equal to $1.3R^2$ from Column 6. Standard errors corrected for spatial autocorrelation within 100 km and temporal autocorrelation for the whole time period are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A7: Difference-in-differences robustness: 2013–2019 sample restriction, after the switch to digital transmission

| | Share of Catholic population | | | |
| | attending mass | | taking Communion | |
	(1)	(2)	(3)	(4)
𝟙{Good TVN signal strength} × Post PiS	-0.545**		-0.343**	
	(0.262)		(0.153)	
𝟙{Good TVN signal strength} × 2015	-0.323		-0.221	
	(0.272)		(0.146)	
TVN signal strength × Post PiS		-0.032**		-0.030***
		(0.016)		(0.009)
TVN signal strength × 2015		-0.011		-0.023**
		(0.015)		(0.011)
Free-space TVN signal strength × Post PiS	0.016	0.041	0.002	0.031*
	(0.025)	(0.034)	(0.013)	(0.018)
Free-space TVN signal strength × 2015	0.020	0.022	0.004	0.029
	(0.027)	(0.034)	(0.014)	(0.021)
Year and Municipality FEs	✓	✓	✓	✓
Fixed and Mobile Internet × Year FE	✓	✓	✓	✓
Night-time light density per capita	✓	✓	✓	✓
Disaster dummy	✓	✓	✓	✓
Partitions of Poland × Year FEs	✓	✓	✓	✓
Observations	16,978	16,978	16,978	16,978
R-squared	0.899	0.899	0.830	0.830
Mean of dependent variable	34.35	34.35	14.66	14.66
SD of the TVN signal measure	0.45	10.12	0.45	10.12

Notes. The table presents robustness of the difference-in-differences estimation to restricting the sample to the period after the switch from analogue to digital transmission, 2013–2019. OLS estimates. The unit of analysis is municipality × year. The dependent variables are the share of Catholics attending mass in Columns 1 and 2 and taking Communion in Columns 3 and 4. All specifications control for year and municipality fixed effects, the interactions of fixed and mobile internet with year dummies, time-varying nighttime light density per capita, and dummy variables for a natural disaster in the last three years, the free-space TVN signal strength at municipality level interacted with post-PiS and 2015 dummies, and the interactions of the dummies for Austro-Hungarian and Prussian partitions with year dummies. (The Russian Empire partition is the omitted category.) Standard errors corrected for spatial autocorrelation within 100 km and temporal autocorrelation for the whole time period are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A8: Matching: Balance test of treatment status with respect to covariates in the matched sample

Variable	N	(1) Control Mean/SE	N	(2) Treated Mean/SE	T-test P-value (1)-(2)
(log) Night-time lights per capita	442	-1.987 (0.055)	1452	-1.898 (0.018)	0.122
(log) Distance to optic-fiber internet nodes	442	0.972 (0.034)	1452	1.001 (0.013)	0.428
Speed of 3G mobile internet	442	38.217 (0.563)	1452	38.143 (0.245)	0.904
Religious participation (PCA), 2009-2014	442	-0.109 (0.081)	1452	-0.074 (0.034)	0.687
Pre-2009 support for PiS (PCA)	442	-0.050 (0.089)	1452	-0.072 (0.040)	0.823
Austro-Hungarian partition	442	0.119 (0.017)	1452	0.126 (0.009)	0.724
Prussian partition	442	0.415 (0.035)	1452	0.441 (0.013)	0.482
(log) Population	442	9.069 (0.059)	1452	9.095 (0.020)	0.681
Share of working age population	442	67.301 (0.171)	1452	67.357 (0.069)	0.761
(log) Altitude	442	5.030 (0.046)	1446	4.980 (0.018)	0.308
Share of population employed in agriculture	442	36.960 (1.259)	1452	35.604 (0.517)	0.319
Share of population with higher education	442	6.192 (0.205)	1452	6.127 (0.073)	0.767
Share of population with secondary education	442	17.656 (0.290)	1452	17.919 (0.103)	0.391

Notes. The table presents the balance test between treated and untreated municipalities in terms of socio-economic characteristics in the matched sample. The unit of analysis is municipality. The value displayed for t-tests are the differences in the means across the treated and untreated groups. Untreated municipalities are weighted using the weights representing the number of treated municipalities for which they serve as counterfactual. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A9: Difference-in-differences: Political outcomes and TVN

	PiS vote share		Turnout	
	(1)	(2)	(3)	(4)
Panel A: Parliamentary Elections, 2007, 2011, 2015, and 2019				
$\mathbb{1}$\{Good TVN signal strength\} $\times$ Post PiS	-0.198	-0.214	0.861***	0.733***
	(0.557)	(0.557)	(0.245)	(0.238)
$\mathbb{1}$\{Good TVN signal strength\} $\times$ 2015	0.115	0.054	-0.021	0.402**
	(0.305)	(0.275)	(0.216)	(0.187)
Free-space TVN signal strength $\times$ Post PiS	-0.199***	-0.190***	-0.017	-0.019
	(0.051)	(0.054)	(0.028)	(0.025)
Free-space TVN signal strength $\times$ 2015	-0.090***	-0.090***	0.007	-0.025
	(0.035)	(0.033)	(0.022)	(0.016)
Observations	9,900	9,900	9,900	9,900
R-squared	0.951	0.951	0.966	0.967
Mean of dependent variable	37.43	37.43	45.40	45.40
SD of the TVN signal measure	0.45	0.45	0.45	0.45
Panel B: European Parliament Elections, 2009, 2014, and 2019				
$\mathbb{1}$\{Good TVN signal strength\} $\times$ Post PiS	-0.060	-0.161	0.074	0.024
	(0.589)	(0.574)	(0.228)	(0.231)
Free-space TVN signal strength $\times$ Post PiS	-0.262***	-0.236***	0.022	0.031
	(0.050)	(0.051)	(0.021)	(0.022)
Observations	7,421	7,421	7,421	7,421
R-squared	0.937	0.938	0.979	0.979
Mean of dependent variable	40.45	40.45	26.17	26.17
SD of the TVN signal measure	0.45	0.45	0.45	0.45
Year and Municipality FEs	✓	✓	✓	✓
Fixed and Mobile Internet $\times$ Year FE	✓	✓	✓	✓
Night-time light density per capita	✓	✓	✓	✓
Disaster dummy	✓	✓	✓	✓
Empire $\times$ Year trend	✓		✓	
Empire $\times$ Year FE		✓		✓

Notes. The table presents the difference-in-differences estimation of the effect of TVN on political outcomes after PiS came to power. OLS estimates. The unit of analysis is municipality $\times$ year. Panel A considers the national parliamentary elections, while Panel B considers European Parliament elections. The dependent variables are the vote share for PiS in Columns 1 and 2 and turnout rate in Columns 3 and 4. All columns control for year and municipality fixed effects, interactions of fixed and mobile internet with year dummies, time-varying night-time light density per capita, and dummy variables for a natural disaster in the last three years, and the free-space TVN signal strength at municipality level interacted with post-PiS and 2015 dummies. In addition, Columns 1 and 3 include the interactions of the dummies for Austro-Hungarian and Prussian partitions with year trends, while Columns 2 and 4 include the interactions of the dummies for Austro-Hungarian and Prussian partitions with year dummies. (The Russian Empire partition is the omitted category.) Standard errors corrected for spatial autocorrelation within 100 km and temporal autocorrelation for the whole time period are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A10: Experiment's descriptive statistics: Pre-treatment characteristics

	Mean	Median	SD	Min	Max	Obs.
Lives in a rural area	0.309	0	0.462	0	1	9,416
Lives in a city ($<$ 200,000 inhabitants)	0.460	0	0.498	0	1	9,416
Lives in a big city ($>$ 200,000 inhabitants)	0.230	0	0.421	0	1	9,416
Marital status: single	0.194	0	0.396	0	1	9,416
Marital status: married	0.481	0	0.500	0	1	9,416
Marital status: informal partnership	0.245	0	0.430	0	1	9,416
Employed	0.662	1	0.473	0	1	9,416
Unemployed	0.067	0	0.251	0	1	9,416
Student	0.119	0	0.324	0	1	9,416
Household size	3.372	3	1.407	1	7	9,416
Household income	8.473	8	2.732	1	14	8,290
Has internet access at home	0.864	1	0.343	0	1	9,361
Internet services used: Facebook, twitter	0.860	1	0.347	0	1	9,416
Internet services used: pro-PiS portals	0.089	0	0.284	0	1	9,416
Internet services used: anti-PiS portals	0.255	0	0.436	0	1	9,416
Time spent watching TV last week	3.699	4	1.518	1	6	9,416
Main TV source of information: TVPolska	0.192	0	0.394	0	1	9,416
Main TV source of information: TVN	0.488	0	0.500	0	1	9,416
Main other sources of information: internet media	0.546	1	0.498	0	1	9,416
Main other sources of information: social media	0.441	0	0.497	0	1	9,416
Main other sources of information: periodicals	0.112	0	0.315	0	1	9,416
Religion: Catholic	0.838	1	0.368	0	1	9,161
Religion: not religious	0.121	0	0.326	0	1	9,161
Attends mass weekly	0.340	0	0.474	0	1	7,963
Takes Communion weekly	0.139	0	0.346	0	1	7,649
Considers self a religious person	0.762	1	0.426	0	1	9,090
Donated time or resources to a religious charity	0.130	0	0.337	0	1	9,290
Voted in the parliamentary elections in 2019	0.719	1	0.449	0	1	9,322
Voted for PiS in the parliamentary elections in 2019	0.334	0	0.472	0	1	5,886
Voted in the EU elections in 2019	0.629	1	0.483	0	1	9,301
Voted for PiS in the EU elections in 2019	0.320	0	0.466	0	1	5,116
Watched: Clergy	0.568	1	0.495	0	1	9,364
Watched: Tell no one	0.598	1	0.490	0	1	9,308

Notes: The table presents the summary statistics for the pre-treatment socio-economic characteristics of the participants in the survey-experiment.

Table A11: Experiment's descriptive statistics: Outcome variables

	Mean	Median	SD	Min	Max	Obs.
Panel A: First-round outcomes						
Primary outcomes:						
Chose a religious foundation to donate money	0.220	0	0.414	0	1	9,416
Trust in religious institutions (principal component)	0.370	0	0.340	0	1	9,066
Trust in the Church	0.340	0	0.474	0	1	9,263
Trust in parish priests	0.384	0	0.486	0	1	9,257
Trust in the Episcopate	0.184	0	0.387	0	1	9,216
Trust in the Pope	0.699	1	0.459	0	1	9,270
Opinion: The Church's reaction to the pedophilia is insufficient	0.774	1	0.418	0	1	9,264
Disagree: The problem of pedophilia in Church is exaggerated	0.755	1	0.430	0	1	9,279
Disagree: The attack on the Church is underway to reduce its authority	0.566	1	0.496	0	1	9,221
Opinion: Lessons of religion should take place at school	0.430	0	0.495	0	1	9,331
Opinion: At school because the children are safer	0.500	1	0.500	0	1	3,948
Opinion: At parish because school should be separated from the Church	0.530	1	0.499	0	1	4,406
Approve: Priest salaries for teaching at school from the state budget	0.324	0	0.468	0	1	9,339
Opinion: The mutual support of PiS and the Catholic Church is inadmissible	0.691	1	0.462	0	1	9,416
Secondary outcomes:						
Intention to vote for Duda if there were no pandemic	0.260	0	0.439	0	1	7,105
Intention to vote for Duda if vote by correspondence	0.495	0	0.500	0	1	2,742
Trust in political institutions (principal component)	0.191	0	0.324	0	1	9,154
Trust in the president	0.286	0	0.452	0	1	9,265
Trust in the Senate	0.279	0	0.449	0	1	9,238
Trust in the Sejm (parliament)	0.149	0	0.357	0	1	9,257
Trust in the government	0.185	0	0.388	0	1	9,277
Has positive feelings for PiS	0.249	0	0.432	0	1	9,155
Panel B: Follow-up-round outcomes						
Intends to participate in the mass at least once a week in the future	0.309	0	0.462	0	1	7,277
Trust in religious institutions (PCA)	0.369	0	0.343	0	1	7,194
Actively searched info on pedophilia in the Church in the media/on the internet	0.254	0	0.435	0	1	7,157
Pedophiles within the Catholic Church are treated differently	0.806	1	0.396	0	1	7,270
Watched "Tell no one" since the first round	0.222	0	0.416	0	1	2,832

Notes: The table presents the summary statistics for the outcome variables in the survey-experiment. Panel A presents the outcomes in the first round of the survey-experiment, separately for primary outcomes that are related to religiosity and secondary outcomes that are related to political preferences. Panel B presents the outcomes in the follow-up round of the survey-experiment.

Table A12: Experiment. Omnibus test of randomization quality: Pre-treatment characteristics do not predict treatment status

Sample:	Treatment 1 & Control		Treatment 2 & Control		(continued...)	Treatment 1 & Control		Treatment 2 & Control	
Dependent variable:	Treatment 1		Treatment 2			Treatment 1		Treatment 2	
	coeff.	se	coeff.	se		coeff.	se	coeff.	se
Lives in a city	0.015	(0.015)	0.004	(0.015)	Main TV source: TVPolska	0.007	(0.020)	0.007	(0.020)
Lives in a big city	0.005	(0.019)	-0.015	(0.019)	Main TV source: TVN	-0.011	(0.016)	-0.000	(0.015)
Marital status: single	-0.006	(0.029)	0.029	(0.029)	Other sources: internet media	-0.002	(0.014)	-0.016	(0.014)
Marital status: married	-0.029	(0.025)	0.026	(0.026)	Other sources: social media	0.005	(0.015)	0.029**	(0.015)
Marital status: informal partnership	-0.013	(0.027)	0.016	(0.028)	Other sources: periodicals	-0.000	(0.022)	-0.008	(0.022)
Employed	-0.004	(0.016)	-0.014	(0.016)	Religion: Catholic	-0.003	(0.033)	-0.016	(0.033)
Unemployed	-0.016	(0.027)	-0.017	(0.027)	Religion: not religious	-0.028	(0.039)	-0.025	(0.039)
Student	-0.003	(0.028)	0.000	(0.027)	Attends mass weekly	-0.010	(0.018)	-0.025	(0.018)
Household size	0.013**	(0.005)	-0.007	(0.005)	Takes Communion weekly	0.009	(0.024)	-0.005	(0.024)
Household income	-0.000	(0.003)	0.003	(0.003)	Considers self a religious person	-0.007	(0.019)	0.043**	(0.019)
Has internet access at home	0.008	(0.019)	-0.007	(0.019)	Donated to a religious charity	-0.002	(0.021)	-0.018	(0.021)
Internet use: Facebook, twitter	-0.004	(0.019)	0.014	(0.020)	Voted in the parl. elections in 2019	-0.020	(0.029)	-0.013	(0.029)
Internet use: pro-PiS portals	0.002	(0.024)	0.020	(0.024)	Voted for PiS in the parl. elections	-0.023	(0.029)	-0.015	(0.029)
Internet use: anti-PiS portals	-0.002	(0.016)	-0.005	(0.016)	Voted in the EU elections in 2019	0.025	(0.024)	0.039	(0.024)
Time spent watching TV	0.000	(0.005)	-0.003	(0.005)	Voted for PiS in the EU elections	0.000	(0.031)	-0.011	(0.032)
Watched the movie "Tell no one"	-0.001	(0.015)	0.016	(0.015)	Watched the movie "Clergy"	0.014	(0.014)	0.019	(0.014)
					Observations	6293		6299	
					R-squared	0.006		0.010	
					P-value for joint significance	0.997		0.54	

Notes: The table presents the omnibus test of randomization quality for the experiment. It reports the estimates obtained from regressing the treatment status on the full list of pre-treatment covariates. OLS estimates. The unit of analysis is individual. In the first estimation, an indicator variable for being assigned to "Treatment 1" is regressed on the covariates in a sample of respondents assigned to "Treatment 1" and "Control" groups. In the second estimation, an indicator variable for being assigned to "Treatment 2" is regressed on the covariates in a sample of respondents assigned to "Treatment 2" and "Control" groups. In both regressions, we control for randomization-strata fixed effects. Heteroskedasticity-robust standard errors are in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A13: Balance test: pre-treatment characteristics across treatments

	Treatment 1		Treatment 2			
	coeff.	s.e.	coeff.	s.e.	R-sq.	N
Lives in a rural area	-0.006	(0.011)	-0.002	(0.012)	0.036	9416
Lives in a city (< 200,000 inhabitants)	0.010	(0.013)	0.009	(0.013)	0.007	9416
Lives in a big city (> 200,000 inhabitants)	-0.004	(0.010)	-0.008	(0.010)	0.038	9416
Marital status: single	0.003	(0.009)	0.001	(0.009)	0.157	9416
Marital status: married	-0.009	(0.012)	0.007	(0.012)	0.148	9416
Marital status: informal partnership	0.003	(0.010)	-0.002	(0.010)	0.070	9416
Employed	0.001	(0.011)	-0.004	(0.011)	0.140	9416
Unemployed	-0.004	(0.006)	-0.005	(0.006)	0.021	9416
Student	0.002	(0.006)	0.002	(0.006)	0.463	9416
Household size	0.069**	(0.034)	-0.028	(0.033)	0.127	9416
Household income	0.053	(0.070)	0.077	(0.071)	0.079	8290
Has internet access at home	0.006	(0.009)	0.001	(0.009)	0.016	9361
Internet services used: Facebook, twitter	0.001	(0.009)	0.013	(0.009)	0.045	9416
Internet services used: pro-PiS portals	0.003	(0.007)	0.006	(0.007)	0.022	9416
Internet services used: anti-PiS portals	0.003	(0.011)	0.004	(0.011)	0.043	9416
Time spent watching TV	0.011	(0.037)	0.003	(0.037)	0.057	9416
Main TV source of information: TVPolska	0.004	(0.010)	-0.005	(0.010)	0.008	9416
Main TV source of information: TVN	-0.004	(0.012)	0.009	(0.012)	0.031	9416
Main other sources of information: internet media	0.004	(0.012)	-0.002	(0.012)	0.027	9416
Main other sources of information: social media	0.007	(0.012)	0.029**	(0.012)	0.048	9416
Main other sources of information: periodicals	0.003	(0.008)	0.000	(0.008)	0.019	9416
Religion: Catholic	0.006	(0.009)	0.005	(0.009)	0.021	9161
Religion: not religious:	-0.007	(0.008)	-0.007	(0.008)	0.019	9161
Attends mass weekly	-0.004	(0.012)	-0.017	(0.012)	0.008	8859
Takes Communion weekly	0.002	(0.009)	-0.008	(0.009)	0.007	8259
Considers self a religious person	-0.002	(0.011)	0.017	(0.011)	0.028	9090
Donated time or resources to a religious charity	0.001	(0.009)	-0.006	(0.009)	0.005	9290
Voted in the parliamentary elections in 2019	-0.000	(0.011)	0.009	(0.011)	0.109	9322
Voted for PiS in the parliamentary elections in 2019	-0.010	(0.015)	-0.021	(0.015)	0.028	5886
Voted in the EU elections in 2019	0.008	(0.012)	0.025**	(0.011)	0.123	9301
Voted for PiS in the EU elections in 2019	-0.006	(0.016)	-0.021	(0.016)	0.030	5116
Watched the movie "Clergy"	0.013	(0.012)	0.031**	(0.012)	0.019	9364
Watched the movie "Tell no one"	0.006	(0.012)	0.028**	(0.012)	0.018	9308

Notes. The table presents the balance test between treatment groups and the control group in terms of pre-treatment socio-economic characteristics. OLS estimates. The unit of observation is individual. Each row represents the estimates from a different regression, where the dependent variable indicated in the row label is regressed on two indicator variables for assignment to "Treatment 1" and to "Treatment 2". All regressions control for strata fixed effects. Heteroskedasticity-robust standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A14: Experimental ATE: Trust in Religious Institutions, First round

Dependent variable:	Trust in the Church	Trust in parish priests	Trust in the Episcopate	Trust in the Pope
	(1)	(2)	(3)	(4)
Treatment 1	-0.058***	-0.035***	-0.055***	-0.028**
p-value	(0.000)	(0.002)	(0.000)	(0.011)
Randomization-t p-value	[0.038]	[0.438]	[0.008]	[0.182]
Sharpened q-value	[0.155]	[0.574]	[0.066]	[0.377]
FWER p-value	[0.204]	[0.809]	[0.046]	[0.596]
Holm-Bonferroni p-value	[0.260]	[1.000]	[0.053]	[0.937]
Treatment 2	-0.017	-0.019	-0.026***	-0.007
p-value	(0.136)	(0.106)	(0.008)	(0.538)
Randomization-t p-value	[0.888]	[0.373]	[0.634]	[0.156]
Sharpened q-value	[0.799]	[0.574]	[0.574]	[0.377]
FWER p-value	[0.894]	[0.798]	[0.846]	[0.574]
Holm-Bonferroni p-value	[0.894]	[1.000]	[1.000]	[0.929]
Observations	9263	9257	9216	9270
R-squared	0.170	0.130	0.092	0.098
Mean of dependent variable	0.340	0.384	0.184	0.699
Lee bounds, Treatment 1	[-.06, -.056]	[-.037, -.034]	[-.059, -.049]	[-.029, -.027]
Lee bounds, Treatment 2	[-.02, -.013]	[-.022, -.015]	[-.028, -.02]	[-.008, -.006]
p-value for equality of treatment effects	0.000	0.157	0.001	0.055

Notes. The table presents the estimated ATE of the experimental treatments on trust in religious institutions in the first round of the survey-experiment. OLS estimates. The unit of analysis is individual. All regressions control for strata fixed effects. All regressions also include controls for unbalanced pre-treatment characteristics reported in Table A13, namely, household size, dummies for using social media as a main source of information, for having voted in the EU elections in 2019, and for having watched the movies "Clergy" and "Tell no one," separately. All regressions also control for the level of religiosity self-reported in pre-treatment survey. P-values obtained from heteroskedasticity-robust standard errors are in parentheses. Randomization-t p-values for sharp null hypothesis obtained with 10,000 repetitions using Young (2018) are reported in curly brackets. P-values corrected for multiple hypothesis testing using the methods developed by Anderson (2008) (sharpened q-value), List et al. (2019) and Steinmayr (2020) (FWER p-value), Holm (1979) (Holm-Bonferroni p-value) are reported in square brackets. Lee bounds for the treatment effects (Lee, 2009) are reported at the bottom of the table along with p-values from the test of equality of treatment effects of the two treatments. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A15: Experimental ATE: Assessment of Church's Reaction
First round

| | Church's Reaction insufficient | Disagree with | |
		Problem of pedophilia exaggerated	Attack on church underway
	(1)	(2)	(3)
Treatment 1	0.066***	0.078***	0.033***
p-value	(0.000)	(0.000)	(0.006)
Randomization-t p-value	[0.000]	[0.000]	[0.004]
Sharpened q-value	[0.001]	[0.001]	[0.006]
FWER p-value	[0.000]	[0.000]	[0.016]
Holm-Bonferroni p-value	[0.001]	[0.001]	[0.017]
Treatment 2	0.010	0.018*	0.027**
p-value	(0.313)	(0.099)	(0.023)
Randomization-t p-value	[0.319]	[0.096]	[0.026]
Sharpened q-value	[0.120]	[0.040]	[0.020]
FWER p-value	[0.314]	[0.180]	[0.068]
Holm-Bonferroni p-value	[0.314]	[0.197]	[0.072]
Observations	9264	9279	9221
R-squared	0.101	0.104	0.102
Mean of dependent variable	0.774	0.755	0.566
Lee bounds, Treatment 1	[.066, .066]	[.077, .08]	[.032, .034]
Lee bounds, Treatment 2	[.005, .014]	[.015, .019]	[.025, .029]
P-value for equality of treatment effects	0.000	0.000	0.619

Notes. The table presents the estimated ATE of the experimental treatments on the assessment of the Church's reaction to pedophilia cases in the first round of the survey-experiment. OLS estimates. The unit of analysis is individual. All regressions control for strata fixed effects. All regressions also include controls for unbalanced pretreatment characteristics reported in Table A13, namely, household size, dummies for using social media as a main source of information, for having voted in the EU elections in 2019, and for having watched the movies "Clergy" and "Tell no one," separately. All regressions also control for the level of religiosity self-reported in pre-treatment survey. P-values obtained from heteroskedasticity-robust standard errors are in parentheses. Randomization-t p-values for sharp null hypothesis obtained with 10,000 repetitions using Young (2018) are reported in curly brackets. P-values corrected for multiple hypothesis testing using the methods developed by Anderson (2008) (sharpened q-value), List et al. (2019) and Steinmayr (2020) (FWER p-value), Holm (1979) (Holm-Bonferroni p-value) are reported in square brackets. Lee bounds for the treatment effects (Lee, 2009) are reported at the bottom of the table along with p-values from the test of equality of treatment effects of the two treatments. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A16: Experimental ATE: Opinion on whether religious instruction should take place at school (First Round)

	Religious courses at school	At school to control priests	At parish because of secular state	Approve priest salaries for teaching
	(1)	(2)	(3)	(4)
Treatment 1	0.001	0.131***	0.001	-0.027**
p-value	(0.908)	(0.000)	(0.947)	(0.019)
Randomization-t p-value	[0.908]	[0.000]	[0.949]	[0.019]
Sharpened q-value	[1.000]	[0.001]	[1.000]	[0.071]
FWER p-value	[0.993]	[0.000]	[0.944]	[0.116]
Holm-Bonferroni p-value	[1.000]	[0.001]	[0.944]	[0.131]
Treatment 2	-0.006	0.017	0.012	-0.008
p-value	(0.595)	(0.367)	(0.479)	(0.487)
Randomization-t p-value	[0.599]	[0.371]	[0.480]	[0.481]
Sharpened q-value	[1.000]	[1.000]	[1.000]	[1.000]
FWER p-value	[0.926]	[0.922]	[0.946]	[0.921]
Holm-Bonferroni p-value	[1.000]	[1.000]	[1.000]	[1.000]
Observations	9331	3948	4406	9339
R-squared	0.183	0.058	0.099	0.083
Mean of dependent variable	0.430	0.500	0.530	0.324
Lee bounds, T1	[0, .002]	[.125, .137]	[-.002, .003]	[-.029, -.024]
Lee bounds, T2	[-.006, -.006]	[.006, .031]	[.002, .024]	[-.008, -.008]
p-value for equality of treatment effects	0.522	0.000	0.526	0.100

Notes. The table presents the estimated ATE of the experimental treatments on the opinion about whether religious instruction should take place at school, measured in the first round of the survey-experiment. OLS estimates. The unit of analysis is individual. All regressions control for strata fixed effects. All regressions also include controls for unbalanced pre-treatment characteristics reported in Table A13, namely, household size, dummies for using social media as a main source of information, for having voted in the EU elections in 2019, and for having watched the movies "Clergy" and "Tell no one," separately. All regressions also control for the level of religiosity self-reported in pre-treatment survey. P-values obtained from heteroskedasticity-robust standard errors are in parentheses. Randomization-t p-values for sharp null hypothesis obtained with 10,000 repetitions using Young (2018) are reported in curly brackets. P-values corrected for multiple hypothesis testing using the methods developed by Anderson (2008) (sharpened q-value), List et al. (2019) and Steinmayr (2020) (FWER p-value), Holm (1979) (Holm-Bonferroni p-value) are reported in square brackets. Lee bounds for the treatment effects (Lee, 2009) are reported at the bottom of the table along with p-values from the test of equality of treatment effects of the two treatments. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A17: Experimental ATE: Political Preferences

Dependent variable:	Intention to				
	Vote for Duda-PiS (had there been no COVID epidemic)	Vote for Duda-PiS (in real conditions by correspondence)	Trust in the president	Positive feelings for PiS	Mutual support between Church & PiS inadmissible
	(1)	(2)	(3)	(4)	(5)
Treatment 1	-0.020	-0.057***	-0.008	-0.012	0.068***
p-value	(0.105)	(0.009)	(0.481)	(0.248)	(0.000)
Randomization-t p-value	{0.102}	{0.008}	{0.482}	{0.253}	{0.000}
Sharpened q-value	[0.054]	[0.011]	[0.146]	[0.093]	[0.001]
mhtreg FWER p-value	[0.222]	[0.050]	[0.477]	[0.384]	[0.000]
Holm-Bonferroni p-value	[0.307]	[0.059]	[0.477]	[0.500]	[0.001]
Treatment 2	-0.027**	-0.075***	-0.030***	-0.021**	0.033***
p-value	(0.024)	(0.000)	(0.005)	(0.043)	(0.003)
Randomization-t p-value	{0.026}	{0.001}	{0.006}	{0.039}	{0.003}
Sharpened q-value	[0.022]	[0.003]	[0.010]	[0.029]	[0.008]
mhtreg FWER p-value	[0.093]	[0.005]	[0.025]	[0.124]	[0.017]
Holm-Bonferroni p-value	[0.116]	[0.007]	[0.029]	[0.159]	[0.020]
Observations	7105	2742	9265	9155	9416
R-squared	0.108	0.159	0.081	0.090	0.116
Mean of dependent variable	0.260	0.495	0.286	0.249	0.691
Lee bounds, Treatment 1	[-.029, -.006]	[-.075, -.042]	[-.012, -.002]	[-.015, -.008]	[.068, .068]
Lee bounds, Treatment 2	[-.032, -.019]	[-.087, -.065]	[-.031, -.03]	[-.022, -.02]	[.033, .033]
P-value for equality of treatment effects	0.557	0.412	0.041	0.394	0.002

Notes. The table presents the estimated ATE of the experimental treatments on political preferences, measured in the first round of the survey-experiment. OLS estimates. The unit of analysis is individual. All regressions control for strata fixed effects. All regressions also include controls for unbalanced pre-treatment characteristics reported in Table A13, namely, household size, dummies for using social media as a main source of information, for having voted in the EU elections in 2019, and for having watched the movies "Clergy" and "Tell no one," separately. All regressions also control for the level of religiosity self-reported in pre-treatment survey. P-values obtained from heteroskedasticity-robust standard errors are in parentheses. Randomization-t p-values for sharp null hypothesis obtained with 10,000 repetitions using Young (2018) are reported in curly brackets. P-values corrected for multiple hypothesis testing using the methods developed by Anderson (2008) (sharpened q-value), List et al. (2019) and Steinmayr (2020) (FWER p-value), Holm (1979) (Holm-Bonferroni p-value) are reported in square brackets. Lee bounds for the treatment effects (Lee, 2009) are reported at the bottom of the table along with p-values from the test of equality of treatment effects of the two treatments. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A18: Experimental ATE: Trust in Political Institutions
First Round

Dependent variable:	Trust in political institutions	Trust in the Sejm	Trust in the Senate	Trust in the government
	(1)	(2)	(3)	(4)
Treatment 1	-0.013	-0.013	-0.016	-0.006
p-value	(0.117)	(0.149)	(0.150)	(0.528)
Randomization-t p-value	{0.116}	{0.152}	{0.148}	{0.530}
Sharpened q-value	[0.436]	[0.436]	[0.436]	[0.436]
mhtreg FWER p-value	[0.457]	[0.512]	[0.470]	[0.772]
Holm-Bonferroni p-value	[0.910]	[0.896]	[0.756]	[1.000]
Treatment 2	-0.009	-0.003	-0.007	-0.015
p-value	(0.261)	(0.768)	(0.529)	(0.122)
Randomization-t p-value	{0.266}	{0.774}	{0.524}	{0.126}
Sharpened q-value	[0.436]	[0.632]	[0.436]	[0.436]
mhtreg FWER p-value	[0.587]	[0.759]	[0.886]	[0.478]
Holm-Bonferroni p-value	[1.000]	[0.759]	[1.000]	[0.865]
Observations	9154	9257	9238	9277
R-squared	0.060	0.044	0.089	0.068
Mean of dependent variable	0.191	0.149	0.279	0.185
Lee bounds, Treatment 1	[-.014, -.009]	[-.015, -.006]	[-.016, -.015]	[-.007, -.004]
Lee bounds, Treatment 2	[-.012, -.002]	[-.006, .006]	[-.012, 0]	[-.015, -.015]
P-value for equality of treatment effects	0.664	0.254	0.422	0.365

Notes. The table presents the estimated ATE of the experimental treatments on trust in political institutions, measured in the first round of the survey-experiment. OLS estimates. The unit of analysis is individual. All regressions control for strata fixed effects. All regressions also include controls for unbalanced pre-treatment characteristics reported in Table A13, namely, household size, dummies for using social media as a main source of information, for having voted in the EU elections in 2019, and for having watched the movies "Clergy" and "Tell no one," separately. All regressions also control for the level of religiosity self-reported in pre-treatment survey. P-values obtained from heteroskedasticity-robust standard errors are in parentheses. Randomization-t p-values for sharp null hypothesis obtained with 10,000 repetitions using Young (2018) are reported in curly brackets. P-values corrected for multiple hypothesis testing using the methods developed by Anderson (2008) (sharpened q-value), List et al. (2019) and Steinmayr (2020) (FWER p-value), Holm (1979) (Holm-Bonferroni p-value) are reported in square brackets. Lee bounds for the treatment effects (Lee, 2009) are reported at the bottom of the table along with p-values from the test of equality of treatment effects of the two treatments. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A19: Experiment. Testing Selective Attrition between the First Round and the Follow-up by Treatment Status, using the outcomes from the First Round

	Trust in religious institutions	Donated to religious foundations	Disagree with Problem of pedophilia exaggerated
	(1)	(2)	(3)
Treatment 1 × Participated in follow up	-0.001 (0.026)	0.079 (0.036)	0.932 (0.036)
Treatment 1 × Not participated in follow up	-0.015 (0.028)	0.060 (0.039)	0.942 (0.039)
Treatment 2 × Participated in follow up	0.022 (0.026)	0.079 (0.036)	0.872 (0.037)
Treatment 2 × Not participated in follow up	0.030 (0.028)	0.067 (0.038)	0.879 (0.039)
Control × Participated in follow up	0.046 (0.026)	0.096 (0.036)	0.855 (0.036)
Control × Not participated in follow up	0.028 (0.027)	0.081 (0.038)	0.859 (0.039)
Observations	9066	9416	9279
R-squared	0.633	0.280	0.780
Mean of dependent variable	0.370	0.220	0.755
P-value for joint equality of coefficients between participated and not participated within each treatment group separately	0.380	0.495	0.921
P-value for equality of coefficients, T1	0.306	0.276	0.558
P-value for equality of coefficients, T2	0.577	0.468	0.720
P-value for equality of coefficients, Control	0.190	0.390	0.858

Notes. The table presents a test for selective attrition by treatment status between first round and follow-up round of the survey-experiment using the religiosity outcomes from the first round. OLS estimates without an intercept. The unit of analysis is individual. Each coefficient represents the average of the outcome reported in the Column by treatment status × an indicator variable for whether the respondent participated in the follow-up round of the survey. The regressions are conditional on strata fixed effects, unbalanced controls reported in Table A13, namely, household size, dummies for using social media as a main source of information, for having voted in the EU elections in 2019, and for having watched the movies "Clergy" and "Tell no one," separately. All regressions also control for the level of religiosity self-reported in pre-treatment survey. P-values obtained from heteroskedasticity-robust standard errors are in parentheses. The p-values for the test of the equality of means between those who participated and those who did not for each treatment are reported at the bottom of the table.

Table A20: Experiment. Testing Selective Attrition between the First Round and the Follow-up by Treatment Status, using the pre-treatment characteristics

	Denomination: Catholic	Attends mass weekly	Takes Communion weekly	Considers self a religious person
	(1)	(2)	(3)	(4)
Treatment 1 × Participated in follow up	0.566	0.233	0.157	0.552
	(0.040)	(0.050)	(0.043)	(0.041)
Treatment 1 × Not participated in follow up	0.575	0.237	0.179	0.575
	(0.042)	(0.052)	(0.044)	(0.043)
Treatment 2 × Participated in follow up	0.571	0.228	0.155	0.581
	(0.041)	(0.050)	(0.043)	(0.041)
Treatment 2 × Not participated in follow up	0.564	0.224	0.153	0.579
	(0.042)	(0.051)	(0.044)	(0.043)
Control × Participated in follow up	0.562	0.252	0.163	0.554
	(0.041)	(0.050)	(0.043)	(0.041)
Control × Not participated in follow up	0.568	0.217	0.156	0.580
	(0.042)	(0.052)	(0.044)	(0.043)
Observations	9161	7963	7649	9090
R-squared	0.844	0.370	0.158	0.773
Mean of dependent variable	0.838	0.340	0.139	0.762
P-value for joint equality of coefficients between participated and not participated within each treatment group separately	0.890	0.468	0.635	0.337
P-value for equality of coefficients, T1	0.571	0.862	0.218	0.226
P-value for equality of coefficients, T2	0.686	0.839	0.945	0.949
P-value for equality of coefficients, Control	0.704	0.116	0.676	0.160

Notes. The table presents a test for selective attrition by treatment status between first round and follow-up round of the survey-experiment using the pre-treatment characteristics. OLS estimates without an intercept. The unit of analysis is individual. Each coefficient represents the average of the outcome reported in the Column by treatment status × an indicator variable for whether the respondent participated in the follow-up round of the survey. The regressions are conditional on strata fixed effects, unbalanced controls reported in Table A13, namely, household size, dummies for using social media as a main source of information, for having voted in the EU elections in 2019, and for having watched the movies "Clergy" and "Tell no one," separately. All regressions also control for the level of religiosity self-reported in pre-treatment survey. P-values obtained from heteroskedasticity-robust standard errors are in parentheses. The p-values for the test of the equality of means between those who participated and those who did not for each treatment are reported at the bottom of the table.

Table A21: Heterogeneity by Pre-treatment Levels of Religiosity

Dependent variable:	First round		Follow-up round	
	Trust in religious institutions	Donated to religious foundations	Trust in religious institutions	Attend mass weekly in future
	(1)	(2)	(3)	(4)
Treatment 1	-0.059***	-0.023*	-0.024**	-0.032**
p-value	(0.000)	(0.078)	(0.035)	(0.044)
Randomization-t p-value	{0.000}	{0.072}	{0.041}	{0.056}
Sharpened q-value	[0.001]	[0.171]	[0.153]	[0.171]
FWER p-value	[0.000]	[0.469]	[0.309]	[0.341]
Holm-Bonferroni p-value	[0.002]	[0.798]	[0.489]	[0.540]
Treatment 1 x Non-religious person	0.051***	0.009	0.004	0.024
p-value	(0.000)	(0.649)	(0.785)	(0.208)
Randomization-t p-value	{0.000}	{0.605}	{0.813}	{0.247}
Sharpened q-value	[0.002]	[0.484]	[0.612]	[0.254]
FWER p-value	[0.000]	[0.946]	[0.953]	[0.754]
Holm-Bonferroni p-value	[0.002]	[1.000]	[1.000]	[1.000]
Treatment 2	-0.024**	-0.017	-0.010	-0.027*
p-value	(0.018)	(0.189)	(0.404)	(0.089)
Randomization-t p-value	{0.019}	{0.158}	{0.411}	{0.101}
Sharpened q-value	[0.095]	[0.219]	[0.378]	[0.196]
FWER p-value	[0.183]	[0.738]	[0.886]	[0.489]
Holm-Bonferroni p-value	[0.258]	[1.000]	[1.000]	[0.823]
Treatment 2 x Non-religious person	0.025*	-0.003	-0.008	0.017
p-value	(0.079)	(0.873)	(0.623)	(0.385)
Randomization-t p-value	{0.078}	{0.945}	{0.694}	{0.369}
Sharpened q-value	[0.171]	[0.653]	[0.531]	[0.367]
FWER p-value	[0.489]	[0.873]	[0.972]	[0.919]
Holm-Bonferroni p-value	[0.850]	[0.873]	[1.000]	[1.000]
Observations	9066	9416	7194	7277
R-squared	0.199	0.076	0.199	0.183
Mean of dependent variable	0.370	0.220	0.369	0.309
P-value: T1 + T1 x Non-religious person	0.450	0.371	0.098	0.492
P-value: T2 + T2 x Non-religious person	0.881	0.188	0.150	0.376

Notes. The table presents the estimated heterogeneous effects of the experimental treatments with respect to initial levels of religiosity on the main religiosity outcomes, measured in both rounds of the survey-experiment. OLS estimates. The unit of analysis is individual. All regressions control for strata fixed effects. All regressions also include controls for unbalanced pre-treatment characteristics reported in Table A13, namely, household size, dummies for using social media as a main source of information, for having voted in the EU elections in 2019, and for having watched the movies "Clergy" and "Tell no one," separately. All regressions also control for the level of religiosity self-reported in pre-treatment survey. P-values obtained from heteroskedasticity-robust standard errors are in parentheses. Randomization-t p-values for sharp null hypothesis obtained with 10,000 repetitions using Young (2018) are reported in curly brackets. P-values corrected for multiple hypothesis testing using the methods developed by Anderson (2008) (sharpened q-value), List et al. (2019) and Steinmayr (2020) (FWER p-value), Holm (1979) (Holm-Bonferroni p-value) are reported in square brackets. Lee bounds for the treatment effects (Lee, 2009) are reported at the bottom of the table along with p-values from the test of equality of treatment effects of the two treatments. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A22: Heterogeneity by type of locality: rural areas and small towns vs. large cities

Dependent variable:	First round		Follow-up round	
	Trust in religious institutions	Donated to religious foundations	Trust in religious institutions	Attend mass weekly in future
	(1)	(2)	(3)	(4)
Treatment 1	-0.062***	-0.012	-0.037***	-0.035**
p-value	(0.000)	(0.401)	(0.003)	(0.041)
Randomization-t p-value	{0.000}	{0.397}	{0.003}	{0.042}
Sharpened q-value	[0.001]	[0.324]	[0.025]	[0.111]
FWER p-value	[0.000]	[0.821]	[0.035]	[0.328]
Holm-Bonferroni p-value	[0.002]	[1.000]	[0.042]	[0.510]
Treatment 1 x Cities	0.035**	-0.013	0.033*	0.021
p-value	(0.025)	(0.512)	(0.058)	(0.380)
Randomization-t p-value	{0.023}	{0.512}	{0.060}	{0.377}
Sharpened q-value	[0.088]	[0.347]	[0.124]	[0.324]
FWER p-value	[0.240]	[0.866]	[0.406]	[0.869]
Holm-Bonferroni p-value	[0.348]	[1.000]	[0.659]	[1.000]
Treatment 2	-0.026**	-0.018	-0.023*	-0.029*
p-value	(0.019)	(0.190)	(0.061)	(0.095)
Randomization-t p-value	{0.017}	{0.185}	{0.064}	{0.098}
Sharpened q-value	[0.084]	[0.200]	[0.124]	[0.155]
FWER p-value	[0.191]	[0.697]	[0.390]	[0.508]
Holm-Bonferroni p-value	[0.269]	[1.000]	[0.620]	[0.867]
Treatment 2 x Cities	0.014	0.004	0.026	0.012
p-value	(0.369)	(0.833)	(0.141)	(0.629)
Randomization-t p-value	{0.374}	{0.831}	{0.145}	{0.625}
Sharpened q-value	[0.324]	[0.453]	[0.172]	[0.412]
FWER p-value	[0.914]	[0.836]	[0.624]	[0.860]
Holm-Bonferroni p-value	[1.000]	[0.836]	[1.000]	[1.000]
Observations	9066	9416	7194	7277
R-squared	0.201	0.076	0.202	0.189
Mean of dependent variable	0.370	0.220	0.369	0.309
P-value: T1 + T1 x Cities	0.014	0.093	0.742	0.415
P-value: T2 + T2 x Cities	0.325	0.363	0.811	0.316

Notes. The table presents the estimated heterogeneous effects of the experimental treatments with respect to the locality type of the residence on the main religiosity outcomes, measured in both rounds of the survey-experiment. OLS estimates. The unit of analysis is individual. All regressions control for strata fixed effects. All regressions also include controls for unbalanced pre-treatment characteristics reported in Table A13, namely, household size, dummies for using social media as a main source of information, for having voted in the EU elections in 2019, and for having watched the movies "Clergy" and "Tell no one," separately. All regressions also control for the level of religiosity self-reported in pre-treatment survey. P-values obtained from heteroskedasticity-robust standard errors are in parentheses. Randomization-t p-values for sharp null hypothesis obtained with 10,000 repetitions using Young (2018) are reported in curly brackets. P-values corrected for multiple hypothesis testing using the methods developed by Anderson (2008) (sharpened q-value), List et al. (2019) and Steinmayr (2020) (FWER p-value), Holm (1979) (Holm-Bonferroni p-value) are reported in square brackets. Lee bounds for the treatment effects (Lee, 2009) are reported at the bottom of the table along with p-values from the test of equality of treatment effects of the two treatments. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A23: Heterogeneity by Support for PiS and Watching TVPolska

Dependent variable:	First round		Follow-up round	
	Trust in religious institutions	Donated to religious foundations	Trust in religious institutions	Attend mass weekly in future
	(1)	(2)	(3)	(4)
Treatment 1	-0.071***	-0.026	-0.034**	-0.045**
p-value	(0.000)	(0.138)	(0.025)	(0.025)
Randomization-t p-value	{0.000}	{0.133}	{0.026}	{0.027}
Sharpened q-value	[0.001]	[0.359]	[0.107]	[0.107]
FWER p-value	[0.000]	[0.709]	[0.202]	[0.207]
Holm-Bonferroni p-value	[0.002]	[1.000]	[0.321]	[0.324]
Treatment 1 x Not PiS supporter or TVPolska viewer	0.041**	0.014	0.016	0.035
p-value	(0.011)	(0.521)	(0.370)	(0.152)
Randomization-t p-value	{0.011}	{0.520}	{0.378}	{0.149}
Sharpened q-value	[0.094]	[0.543]	[0.543]	[0.359]
FWER p-value	[0.110]	[0.967]	[0.916]	[0.716]
Holm-Bonferroni p-value	[0.162]	[1.000]	[1.000]	[1.000]
Treatment 2	-0.007	0.003	0.007	-0.025
p-value	(0.622)	(0.863)	(0.645)	(0.236)
Randomization-t p-value	{0.619}	{0.860}	{0.650}	{0.239}
Sharpened q-value	[0.591]	[0.740]	[0.591]	[0.469]
FWER p-value	[0.972]	[0.867]	[0.951]	[0.802]
Holm-Bonferroni p-value	[1.000]	[0.867]	[1.000]	[1.000]
Treatment 2 x Not PiS supporter or TVPolska viewer	-0.017	-0.030	-0.026	0.009
p-value	(0.288)	(0.169)	(0.169)	(0.714)
Randomization-t p-value	{0.300}	{0.176}	{0.173}	{0.718}
Sharpened q-value	[0.543]	[0.359]	[0.359]	[0.621]
FWER p-value	[0.853]	[0.703]	[0.704]	[0.919]
Holm-Bonferroni p-value	[1.000]	[1.000]	[1.000]	[1.000]
Observations	9066	9416	7194	7277
R-squared	0.242	0.103	0.237	0.199
Mean of dependent variable	0.370	0.220	0.369	0.309
P-value: T1 + T1 x Not PiS supporter and not TVPolska viewer	0.001	0.272	0.086	0.512
P-value: T2 + T2 x Not PiS supporter and not TVPolska viewer	0.008	0.019	0.071	0.300

Notes. The table presents the estimated heterogeneous effects of the experimental treatments with respect to support for the PiS party and to TVPolska viewership on the main religiosity outcomes, measured in both rounds of the survey-experiment. OLS estimates. The unit of analysis is individual. All regressions control for strata fixed effects. All regressions also include controls for unbalanced pre-treatment characteristics reported in Table A13, namely, household size, dummies for using social media as a main source of information, for having voted in the EU elections in 2019, and for having watched the movies "Clergy" and "Tell no one," separately. All regressions also control for the level of religiosity self-reported in pre-treatment survey. P-values obtained from heteroskedasticity-robust standard errors are in parentheses. Randomization-t p-values for sharp null hypothesis obtained with 10,000 repetitions using Young (2018) are reported in curly brackets. P-values corrected for multiple hypothesis testing using the methods developed by Anderson (2008) (sharpened q-value), List et al. (2019) and Steinmayr (2020) (FWER p-value), Holm (1979) (Holm-Bonferroni p-value) are reported in square brackets. Lee bounds for the treatment effects (Lee, 2009) are reported at the bottom of the table along with p-values from the test of equality of treatment effects of the two treatments. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A24: Testing for Experimenter Demand Effects: Heterogeneity by self-reported donation to charity last year

Dependent variable:	First round		Follow-up round	
	Trust in religious institutions	Donated to religious foundations	Trust in religious institutions	Attend mass weekly in future
	(1)	(2)	(3)	(4)
Treatment 1	-0.045***	-0.013	-0.028	-0.014
p-value	(0.003)	(0.548)	(0.122)	(0.537)
Randomization-t p-value	{0.003}	{0.555}	{0.122}	{0.542}
Sharpened q-value	[0.043]	[1.000]	[1.000]	[1.000]
FWER p-value	[0.034]	[0.997]	[0.679]	[0.996]
Holm-Bonferroni p-value	[0.046]	[1.000]	[1.000]	[1.000]
Treatment 1 x Donated to charity last year	0.001	0.001	0.011	-0.010
p-value	(0.947)	(0.957)	(0.586)	(0.717)
Randomization-t p-value	{0.948}	{0.953}	{0.582}	{0.722}
Sharpened q-value	[1.000]	[1.000]	[1.000]	[1.000]
FWER p-value	[0.998]	[0.958]	[0.995]	[0.978]
Holm-Bonferroni p-value	[1.000]	[0.958]	[1.000]	[1.000]
Treatment 2	-0.020	-0.032	-0.017	-0.009
p-value	(0.204)	(0.123)	(0.344)	(0.700)
Randomization-t p-value	{0.198}	{0.119}	{0.347}	{0.704}
Sharpened q-value	[1.000]	[1.000]	[1.000]	[1.000]
FWER p-value	[0.856]	[0.691]	[0.954]	[0.991]
Holm-Bonferroni p-value	[1.000]	[1.000]	[1.000]	[1.000]
Treatment 2 x Donated to charity last year	0.009	0.023	0.012	-0.013
p-value	(0.632)	(0.336)	(0.571)	(0.637)
Randomization-t p-value	{0.629}	{0.339}	{0.575}	{0.638}
Sharpened q-value	[1.000]	[1.000]	[1.000]	[1.000]
FWER p-value	[0.992]	[0.965]	[0.996]	[0.995]
Holm-Bonferroni p-value	[1.000]	[1.000]	[1.000]	[1.000]
Observations	9066	9416	7194	7277
R-squared	0.249	0.112	0.246	0.225
Mean of dependent variable	0.370	0.220	0.369	0.309
P-value: T1 + T1 x Donated to charity last year	0.000	0.324	0.098	0.087
P-value: T2 + T2 x Donated to charity last year	0.230	0.431	0.607	0.119

Notes. The table presents the estimated heterogeneous effects of the experimental treatments with respect to having donated time or money to a charity in the last year on the main religiosity outcomes in both rounds of the survey-experiment. OLS estimates. The unit of analysis is individual. All regressions control for strata fixed effects. All regressions also include controls for unbalanced pre-treatment characteristics reported in Table A13, namely, household size, dummies for using social media as a main source of information, for having voted in the EU elections in 2019, and for having watched the movies "Clergy" and "Tell no one," separately. All regressions also control for the level of religiosity self-reported in pre-treatment survey. P-values obtained from heteroskedasticity-robust standard errors are in parentheses. Randomization-t p-values for sharp null hypothesis obtained with 10,000 repetitions using Young (2018) are reported in curly brackets. P-values corrected for multiple hypothesis testing using the methods developed by Anderson (2008) (sharpened q-value), List et al. (2019) and Steinmayr (2020) (FWER p-value), Holm (1979) (Holm-Bonferroni p-value) are reported in square brackets. Lee bounds for the treatment effects (Lee, 2009) are reported at the bottom of the table along with p-values from the test of equality of treatment effects of the two treatments. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

B   Additional anecdotal evidence and sources that describe TV content

Anne Applebaum in *The Atlantic* on how TVPolska was transformed by PiS:
"...In 2015, Kaczyński [the leader of PiS] plucked Jacek [Kurski] out of the relative obscurity of fringe politics and made him the director of state television. Since his arrival at Telewizja Polska, [...] Kurski has changed the station beyond recognition, firing the best-known journalists and radically reorienting its politics. Although the station is funded by taxpayers, the news broadcasts no longer make any pretense of objectivity or neutrality. In April of this year, for example, the station made an advertisement for itself. It showed a clip from a press conference; the leader of the opposition party, Grzegorz Schetyna, is asked what his party achieved during its eight years in government, from 2007 to 2015. Schetyna pauses and frowns; the video slows down and then ends. It's as if he had nothing to say. In reality, Schetyna spoke for several minutes and listed a number of achievements, from the mass construction of roads to rural investments to advances in foreign policy. But this manipulated clip was deemed such a success that for several days, it remained pinned to the top of Telewizja Polska's Twitter feed."
(https://www.theatlantic.com/magazine/archive/2018/10/poland-polarization/568324/, accessed May 5, 2021.)

Additional sources describing Polsat's pro-government editorial policy.

- https://www.newsweek.pl/polska/jak-polsat-pokochal-pis/vckxvg6, accessed September 21, 2022.

- https://www.press.pl/tresc/58523,polsat-news_-obiektywnie-w-prawo, accessed September 21, 2022.

- https://www.wirtualnemedia.pl/artykul/spot-pis-platne-ogloszenie-spoleczne-partii-politycznej-program-po-polsat-tvp, accessed September 21, 2022.

- https://innpoland.pl/143433,solorz-wpadl-we-wlasne-sidla-chcial-byc-obok-teraz-musi-chwalic-rzad, accessed September 21, 2022.

C Data Appendix

In this section, we describe the variables used as controls in the observational part of our study. We define each variable and provide information on the aggregation level, time coverage, and sources. Online Appendix Table C1 (below in this section) summarizes the aggregation level, at which these variables are measured, and the years, for which they are available.

Historical Partitions of Poland. The data on historical partitions of Poland come from Grosfeld and Zhuravskaya (2015). We generate three dummy variables indicating whether a municipality was part of the Russian Empire partition, the Austro-Hungarian Empire partition, or the Prussian Partition. In our regression analyses, we set the Russian Empire partition as the omitted category as it was the largest of the three partitions in terms of the surface area.

Stationary and mobile internet availability. The data on the mobile and fix internet availability come from State Office for Electronic Communication, https://www.uke.gov.pl/en/ (accessed October 20, 2022). The dataset provides information on the location of optic-fiber internet nodes for stationary internet, and for mobile internet, it contains antenna locations, along with their directions and data transmission speed (in mb/s). This information is available only for 2019. We compute log of the average distance of each municipality to the optic-fiber internet nodes as our measure of stationary internet availability. The motivation for this is that distance to nodes reduces data transmission speed because of signal attenuation through copper cables. We use the average speed of mobile internet as a proxy for its availability. More precisely, we proxy the speed at which a user can browse on her mobile device by the average data transmission speed of the antennas surrounding her. For each municipality we compute the average speed of all antennas covering this municipality, each antenna being weighted by the share of the municipality actually covered by it.

Natural disasters. The data on natural disasters come from EM-DAT, The international disasters database, https://public.emdat.be/ (accessed October 20, 2022). We generate four dummy variables indicating whether a natural disaster occurred in each municipality in the calendar year, the year before, two years before, and three years before.

Night-time lights. The data on night-time light density come from two sources: top-corrected versions of NASA's DMSP-OLS provided by (Bluhm and Krause, 2020), https://lightinequality.com/ top-lights.html (accessed October 20, 2022) for the period between 2009 and 2011; annual VNL composites (v2.1) of VIIRS Day/Night Band Nighttime Lights for the period between 2012 and 2019, https://eogdata. mines.edu/products/vnl/ (accessed October 20, 2022). We compute yearly night-time lights per capita at the municipality level by summing the night-time lights within the municipality border and then dividing these values by the population size.

Population data. The data on total population of municipalities come from the Central Statistical Office of Poland (https://stat.gov.pl/). We use the total population in 2007, which pre-dates the period of our analysis.

Age structure of population. The data on age distribution of municipal population come from the Central Statistical Office of Poland (https://stat.gov.pl/, accessed October 20, 2022). We use the breakdown of population in 2007. We compute the share of young population (aged

15 or less), the share of working age population (aged between 15 and 64), and the share of elderly population (aged 65 or more) by dividing the number of population in each category by the total population in 2007. In our regression analyses, we set the share of young population as the omitted category.

Education structure of population. The data on education of municipal population come from the Census of 2002, which is provided by the Central Statistical Office of Poland (https://stat.gov.pl/, accessed October 20, 2022). We compute the share of population with higher education, the share of population with secondary education, and the share of population with less than secondary education by dividing the number of population in each category by the total population in 2002. In our regression analyses, we set the share of population with less than secondary education as the omitted category.

Access to railways. The data on railway network come from Grosfeld and Zhuravskaya (2015). We generate a dummy variable indicating whether a municipality is within 10-km distance from the railway network in 2006.

Wages. The data on the average wage level at the municipality level in 2007 come from the Central Statistical Office of Poland (https://stat.gov.pl/, accessed October 20, 2022). We compute the relative wages of each municipality with respect to the country average, by dividing the average wages in the municipality by the average wage in Poland in 2007.

Municipality revenue. The data on municipality revenue in 2007 come from the Central Statistical Office of Poland (https://stat.gov.pl/, accessed October 20, 2022). We compute the municipal revenue per capita by dividing the total municipality revenue by population in 2007, then taking its natural log.

European Union subsidies. The data on European Union (EU) subsidies in 2007 comes from the Central Statistical Office of Poland (https://stat.gov.pl/, accessed October 20, 2022). We compute the EU subsidies per capita by dividing the total amount of EU subsidy each municipality received by population in 2007, then taking its natural log.

Industrial production. The data on industrial production levels in 2007 are available at the county level and come from Central Statistical Office of Poland (https://stat.gov.pl/, accessed October 20, 2022). We divide the value of industrial production by the total population in 2007 and take its natural log.

Employment in agriculture. The data on employment in agriculture in 2005 are available at the county level and come from Central Statistical Office of Poland (https://stat.gov.pl/, accessed October 20, 2022). We compute the share of population employed in agriculture by dividing the number of people working in agriculture by the total employment level in 2005.

Language proficiency. The data on language proficiency are available at the county level and come from the 2002 Census, which is provided by the Central Statistical Office of Poland (https://stat.gov.pl/, accessed October 20, 2022). We compute the share of population that speaks only Polish by dividing the their number by the total population in 2002.

Support for PiS. The data on the support for PiS in the period before 2009 come from the Official Electoral Commission of Poland (Panstwowa Komisja Wyborcza, http://pkw.gov.pl/, accessed October 20, 2022). We compute the share of votes for PiS by dividing the number of valid votes for PiS by the total number of valid votes for the presidential election in 2005, the parliamentary election in 2007, and for the European Parliament election in 2009. Then, we compute the first principal component of these three variables to generate our Pre-2009 support for PiS.

Religious participation. The data on religious participation, i.e., mass attendance (*Dominicantes*) and taking Holy Communion (*Communicantes*), in 2009 at the municipality level comes from the Institute of Statistics of the Catholic Church (ISKK, 2020). We compute the first principal component of these two religious participation measures to generate our religious participation variable in 2009.

Other geographical characteristics. The data on elevation come from the MODIS Land Digital Elevation Model provided by the NASA, with a 15 arc seconds resolution (https://ladsweb.modaps.eosdis.nasa.gov/missions-and-measurements/products/MODDEMHKM, accessed October 20, 2022). We compute the average altitude of each municipality and take its natural logs. We use the definition provided by the Central Statistical Office of Poland (https://stat.gov.pl/, accessed October 20, 2022) to classify municipalities as rural areas and cities.

Table C1: Aggregation level and time availability of control variables

Covariate	Aggregation	Availability
Austro-Hungarian partition	Municipality	Cross-section, historical
Prussian partition	Municipality	Cross-section, historical
Russian partition	Municipality	Cross-section, historical
Speed of 3G mobile internet	Municipality	Cross-section, 2019
(log) Distance to optic-fiber internet nodes (km)	Municipality	Cross-section, 2019
(log) Night-time lights per capita	Municipality	Yearly panel, 2009-2019
Natural disasters	Municipality	Yearly panel, 2009-2019
Population	Municipality	Cross-section, 2007
Share of young population	Municipality	Cross-section, 2007
Share of working age population	Municipality	Cross-section, 2007
Share of elderly population	Municipality	Cross-section, 2007
Share of population with higher education	Municipality	Cross-section, 2002
Share of population with secondary education	Municipality	Cross-section, 2002
Share of population with less than secondary education	Municipality	Cross-section, 2002
Railways within 10 km	Municipality	Cross-section, 2006
Wages relative to country average	Municipality	Cross-section, 2007
(log) Municipality revenue per capita	Municipality	Cross-section, 2007
(log) EU subsidies to gminy per capita	Municipality	Cross-section, 2007
(log) Industrial production per capita	County	Cross-section, 2006
Share of population employed in agriculture	County	Cross-section, 2005
Share of population that speaks only Polish	County	Cross-section, 2002
Religious participation (PCA), 2009	Municipality	Cross-section, 2009
Pre-2009 support for PiS (PCA)	Municipality	Cross-section, pre-2009
Rural areas	Municipality	Cross-section
(log) Altitude	Municipality	Cross-section

D The Calculation of Persuasion Rates

In this section, we present the exact calculations of persuasion rates. Subsection D.1 focuses on the results using observational data, whereas Subsection D.2 focuses on the results of the experiment.

D.1 Persuasion rates implied by the analysis of the observational data

To compare the magnitude of these effects to those from other persuasive communications studied in the literature, we calculate the persuasion rates relying on the formula developed by DellaVigna and Kaplan (2007):

$$f = 100 \times \frac{y_T - y_C}{e_T - e_C} \times \frac{1}{1 - y_0}, \tag{1}$$

where f stands for the persuasion rate, y is the behavior of interest, e is exposure, subscripts T and C stand for treatment and control groups, respectively. y_0 is the share of subjects who would adopt the behavior of interest in a hypothetical case of no message. For an infinitesimally small change in exposure to the message de, the formula becomes Enikolopov et al. (2011):

$$f = 100 \times \frac{1}{1 - y_0}(t\frac{dy}{de} + y\frac{dt}{de}). \tag{2}$$

Persuasion rate of TVN to abstain from religious participation. First, we calculate the persuasion rate of TVN, such that y refers not going to the mass and not taking Communion. In order to apply this formula to the estimates of the effect of local TV signal on local religious participation, several assumptions are needed. First, one needs to define exposure, i.e., explain how the change in local TVN signal (denoted by s) affects viewers' exposure (e) to the messages critical of the Polish Catholic Church. With this additional notation, Equation (2) becomes:

$$f = 100 \times \frac{1}{1 - y_0} \times \frac{dy}{ds} \times \frac{1}{de/ds}. \tag{3}$$

To find $\frac{de}{ds}$, we first measure the share of people watching TVN among those who watch either TVN or TVPolska main prime-time news programs. In Online Appendix Table A2, we show that TVN signal strength is significantly associated with a higher share of people watching TVN's news. To proxy for $\frac{de}{ds}$, we multiply the coefficients from Column 3 of Online Appendix Table A2, which we denote as $\frac{dV}{ds}$, by the share of households in Poland having access to TV, i.e., 98%.[50] V here stands for "viewership."

To measure $\frac{dy}{ds}$, we consider the coefficients obtained from Columns 3 and 5 of Table 2, divided by 100. As they are expressed relative to the number of Catholics, we multiply them by the share of Catholics in Poland. We assume that the share of Catholics is unaffected by TV coverage and retain that 87% of Poles are Catholics (see the background section for the source).

y_0 is the share of Poles that would not go to the mass or not take Holy Communion if there were no TVN. To estimate their values, we use the regressions of Column 5 of Table 2 and predict the share of Catholics attending the mass or taking Communion at the municipality level, if no place had access to TVN. We then consider the population weighted value at the

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[50]See https://web.archive.org/web/20101121000845/http://data.worldbank.org/indicator/IT.TVS.HOUS.ZS, accessed, June 3 2021.

national level to compute the share of Catholics not going to the mass or taking Communion. The respective estimates are 67.2% and 86.1%, which we multiply by the share of Catholics. Finally we add the 13% of non-Catholics who never go to the mass or take Communion to obtain our estimate of y_0.

Thus, the persuasion rates can be written as:

$$f = 100 \times \frac{1}{1 - 0.13 - 0.87 \times \tilde{y}_0} \left(\frac{0.87}{100} \times \frac{d\tilde{y}}{ds} \right) \frac{1}{0.98 \times \frac{dV}{ds}}, \tag{4}$$

where $\tilde{y}_0$ is the share of Catholics attending the mass or taking Communion.

This implies the following numbers for the persuasion rates:

- For the outcome of not attending the mass:

$$f = 100 \times \frac{1}{1 - 0.13 - 0.87 \times 0.672} \left(\frac{0.87}{100} \times 0.571 \right) \frac{1}{0.98 \times 0.151} = 11.8\%$$

- For the outcome of not taking Communion:

$$f = 100 \times \frac{1}{1 - 0.13 - 0.87 \times 0.861} \left(\frac{0.87}{100} \times 0.359 \right) \frac{1}{0.98 \times 0.151} = 17.5\%$$

Persuasion rate of state propaganda. We can also calculate the persuasiveness of state propaganda, i.e., compute the persuasion rate of not having access to TVN on attending mass and on taking Communion. In this case, we adjust the formula as follows:

$$f = 100 \times \frac{1}{1 - 0.87 \times (1 - \tilde{y}_0)} \left(\frac{0.87}{100} \times \frac{d\tilde{y}}{ds} \right) \frac{1}{0.98 \times \frac{dV}{ds}}, \tag{5}$$

To estimate the share of Catholics not going to the mass $(1 - \tilde{y}_0)$, we use the same regressions of Column 5 of Table 2 but now predict the share of Catholics attending the mass or taking Communion at the municipality level, in a hypothetical scenario in which TVN is available in all municipalities, and thus, state propaganda is counter-balanced. Again, we then consider the population weighted value at the national level.

This implies the following numbers for the persuasion rates:

- For the outcome of attending the mass:

$$f = 100 \times \frac{1}{1 - 0.87 \times 0.327} \left(\frac{0.87}{100} \times 0.571 \right) \frac{1}{0.98 \times 0.151} = 4.7\%$$

- For the outcome of taking Communion:

$$f = 100 \times \frac{1}{1 - 0.87 \times 0.137} \left(\frac{0.87}{100} \times 0.359 \right) \frac{1}{0.98 \times 0.151} = 2.4\%$$

D.2   Persuasion rates implied by the results of the experiment

To calculate the persuasion rates implied by the experiment's results, one can apply the formula for the discrete case (Equation 1), which is reduced to:

$$f = \frac{y_T - y_C}{1 - y_0} \qquad (6)$$

As the treatment is randomly assigned, $y_0 = y_C$.

Persuasion rate of Treatment 1.   The persuasion rates of Treatment 1 implied by our experiment are:

- For the first-round outcomes:

    - Do not trust religious institutions, 1st round: $f = -\frac{-0.046}{1-0.619} = 12.2\%$

    - Donate to a non-religious foundation, 1st round: $f = -\frac{-0.017}{1-0.777} = 7.8\%$

- For the follow-up-round outcomes:

    - Do not trust religious institutions, 2nd round: $f = -\frac{-0.022}{1-0.624} = 5.8\%$

    - Do not intend to attend mass weekly in the future, 2nd round: $f = -\frac{-0.024}{1-0.686} = 7.7\%$

Persuasion rate of Treatment 2.   The persuasion rates of Treatment 2 implied by our experiment are:

- For the first-round outcome:

    - Do not trust religious institutions, 1st round: $f = -\frac{-0.019}{1-0.632} = 5.1\%$

- For the follow-up-round outcome:

    - Do not intend to attend mass weekly in the future, 2nd round: $f = -\frac{-0.022}{1-0.688} = 7.2\%$

For the following two outcomes, the effects of Treatment 2 are insignificant. For comparison, we also calculate the persuasion rates based on these imprecisely estimated effects:

- For the following first-round outcome:

    - Do not trust religious institutions (2nd round): $f = -\frac{-0.011}{1-0.631} = 2.9\%$ (insignificant)

- For the following follow-up-round outcome:

    - Donate to a non-religious foundation (1st round): $f = -\frac{-0.016}{1-0.776} = 7.2\%$ (insignificant)

E Survey-Experiment

Sections E.1 and E.2 of this section of the Online Appendix present the transcripts of both treatments. Sections E.3 and E.4 present the full transcripts of the questionnaires, including the introduction and the full set of questions with possible answers in each of the two waves of the survey-experiment.

E.1 Treatment 1

Screen 1: Agata Diduszko-Zyglewska, a journalist, together with a member of the Polish parliament, Joanna Sheuring-Wielgus, have created a data base of the cases of pedophilia crimes committed by priests of the Catholic Church in Poland. This information was the basis of the report that they submitted to the Pope on the 20th of February 2019.

This report contained the following map. Please, look at it carefully:
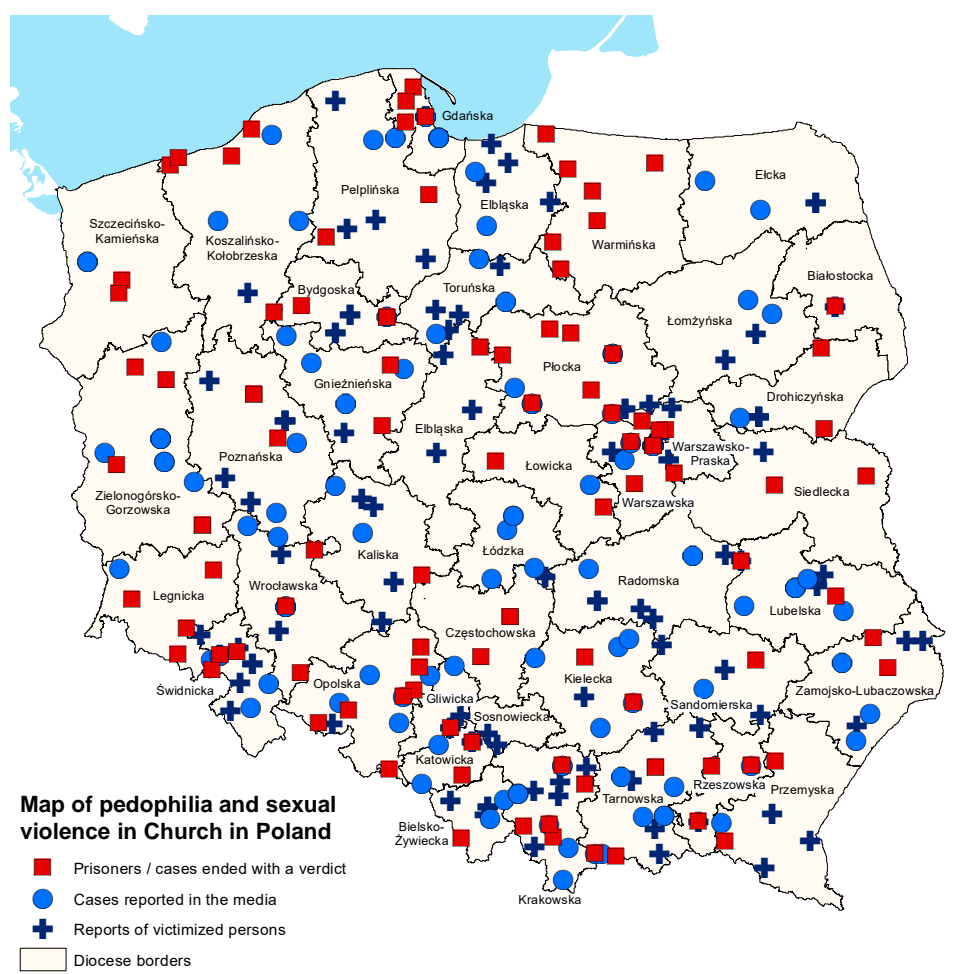
Screen 2: And now please watch a short extract of an interview with Agata Diduszko-Zyglewska (one of the co-authors of the map) who explains the problem of pedophilia in the Catholic Church. (Video can be accessed with the following link: https://vimeo.com/393419992 using the password "treatment1".)

Transcript of the video:

"Hierarchs of the Catholic Church think that priests can abuse children. In case of other pedophiles – because cases of pedophilia occur not only in the Church, they also occur within families – pedophiles who are not ecclesiastic go to prison and nobody has any doubt that this is the only way of reparation for victims. Priests pedophiles go to another parish: that is why we talk about it separately. Common pedophiles usually hurt one or a couple of children. A priest pedophile can operate for decades: he is protected by bishops, and by the institution of the Church. That is why he can hurt a dozen or even several dozens of children."

Screen 3: Do you want to see the video once again?

- Yes
- No

Screen 4: Do you agree with the arguments of Agata Diduszko-Zyglewska?

- Yes, I completely agree
- I partly agree and partly disagree
- No, I completely disagree
- Difficult to say

Screen 5: Media have reported on many of the cases described on the map created by Agata Diduszko-Zyglewska and Joanna Sheuring-Wielgus.

Here is one of such cases.

On February 19, 2020 a criminal state trial opened in Nowy Targ against Priest Marian W. from Tarnow diocese, who is accused of having sexually abused 11 boys, 7 of which were under the age of 15, between 2003 and 2012. Already in 2013, the priest was condemned for sexual abuse of children in the canonical trial within the Church: he could not work with children any longer and was supposed to get a treatment. However, the Church did not inform the state prosecutor about this case.

It was only in May 2018 when a new accusation of priest Marian W. arrived to the Tarnow Curie, that the Curie informed the prosecutor. A new law adopted in 2017 was then already applicable: it made mandatory to report to the state prosecutor about known cases of pedophilia.

According to the prosecutor's act, priest Marian W. was abusing kids at presbyteries and on vacations for which he was taking kids. In 2018, one of his victims committed suicide.

Since 1978 when priest Marian W. started to serve, he was vicar and rector in several parishes and worked with children. The church moved him from parish to parish within Tarnow diocese. This is a map showing places where Priest Marian W. worked during 2003-2012:

Screen 6: How do you evaluate the behavior of Tarnow Curie? Do you think . . .

- Tarnow Curie was right – although it did not report about the abuse to the state prosecutor, but according to the law applicable then did not have to do it
- Tarnow Curie was wrong – whatever the law applicable then it should have reported to the state prosecutor
- Difficult to say
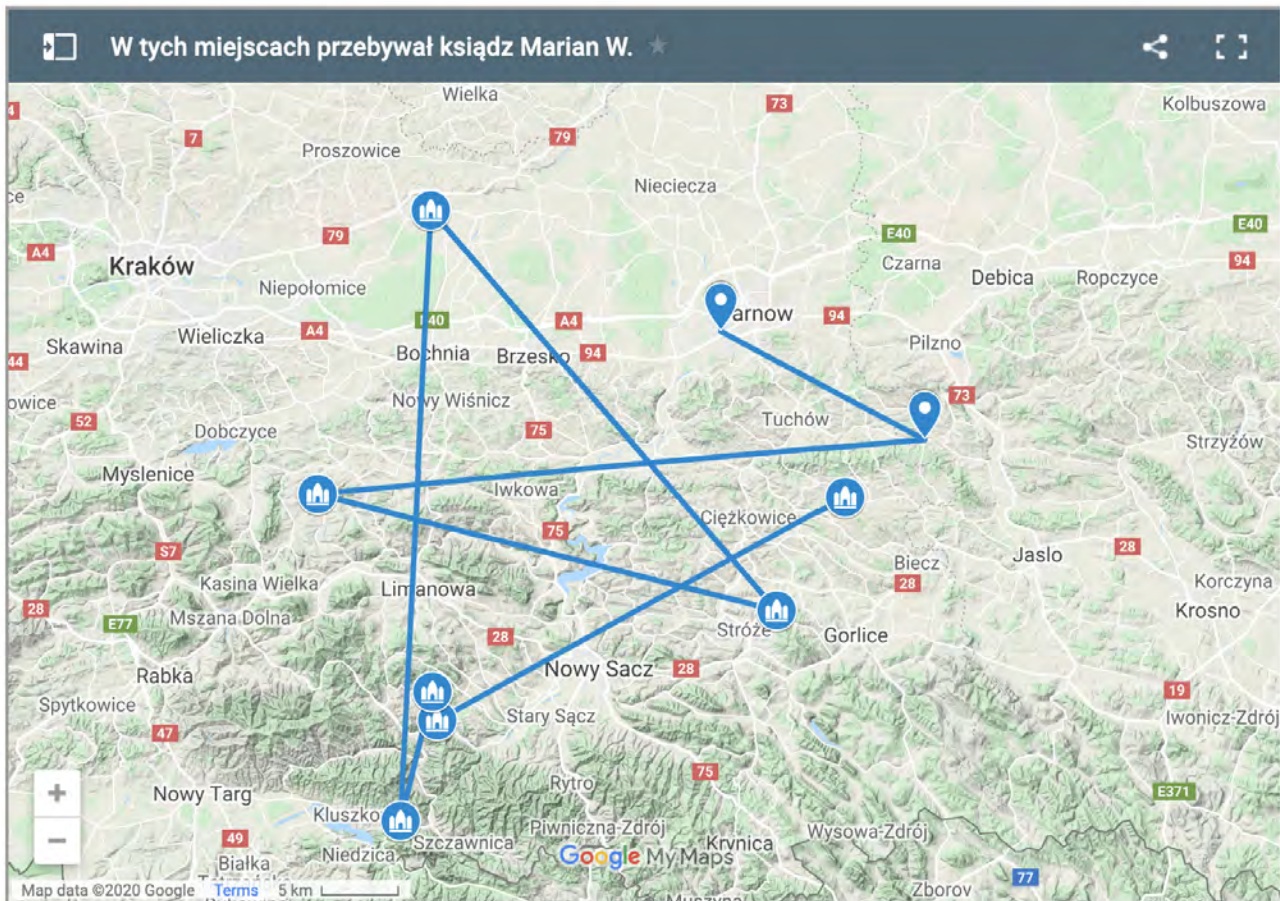
Screen 7: Below there is another case from the pedophilia map. OKO.press, an online media, described in 2018 the case. A priest, Ks. Wincenty Pawlowicz, from Lowicka diocese, suspected of sexually abusing children was moved from one parish to another between 1992 and 2002. In 2003, he was condemned for 3 years of prison. When he got out of prison in 2006, he still worked with children in a parish near Odessa in Ukraine. When he returned to Poland in 2017 he led an advent retreat with children in the Kashubia region. Journalists tried to ask the whereabout of priest Pawlowicz, but the Curie did not reply.

Screen 8: Please watch a short video of a reportage of OKO.press, in which a journalist asks the bishop Dziuba of Lowicz diocese about the place of living of priest Pawlowicz. (Video can be accessed with the following link: https://vimeo.com/393420864 using the password "treatment2".)
Transcript of the video:

> Reporter – "Good morning, your excellency. One question only."
> Bishop – "Yes, what is it, director?"
> Reporter – "I am not director. Your excellency, I wanted to ask about priest Pawlowicz, the priest pedophile."
> Bishop – "I have nothing to say."
> Reporter – "How come? Yet, your excellency is the bishop of Lowicz diocese."
> Bishop – "I have nothing to say, thank you."
> Reporter – "Your excellency, should not you give information about what is happening with priest Pawlowicz? We asked several times. There is no answer. This is very serious. It is about the safety of children."
> Bishop – "..." (silence)

Reporter – "I address myself to the most sensitive sphere of your excellency. It is about protecting children from pedophiles. Why your excellency remain silent?"
Bishop – "..." (silence)
Reporter – Shouldn't bishops care about the safety of the youngest in their dioceses.
Bishop – "..." (silence)
Reporter – "We do not know what is happening with the priest. He still leads retreats; he still has contact with altar boys. We are trying to find out. Did your excellency report it to Vatican?"
Bishop – "..." (silence)
Reporter – "What does your silence means in such situation?"

Screen 9: Do you want to see the video once again?

- Yes
- No

Screen 10: How do you evaluate the behavior of the bishop of Lowicz diocese?

- Definitely positively
- Rather positively
- Rather negatively
- Definitely negatively
- Difficult to say

Screen 11: Sources for treatment 1:

The source of the map on reported cases of pedophilia:
http://mapakoscielnejpedofilii.pl/

The report submitted to the Pope can be found here:
https://web.archive.org/web/20190222151941/http://nielekajciesie.org.pl/wp-content/uploads/2019/02/ReportPOLISH.pdf

The full original interview with Mrs. Diduszko-Zyglewska can be accessed with the following link:
https://www.newsweek.pl/polska/spoleczenstwo/diduszko-zyglewska-w-newsweek-opinie-pedofilia-niszczy-swiat-dziecka/kylylvd

Media reports on the case of Priest Marian W.:
https://tvn24.pl/krakow/nowy-targ-ruszyl-proces-ksiedza-mariana-w-oskarzonego-o-pedofilie-4169893
https://krakow.onet.pl/pedofilia-w-kosciele-diecezja-tarnowska-czy-ks-marian-w-molestowal/bxs6yww

OKO.press reports on Priest Wincenty Pawlowicz:
https://oko.press/kosciol-dal-ksiedzupedofilowi-parafie-pod-odessa-i-ministrantow-w-polsce-prowadzi-rekolekcje/
https://oko.press/bp-dziuba-milczy-w-sprawie-ksiedza-pedofila-nie-mam-nic-do-powiedzenia-zobacz-film/

E.2 Treatment 2

Screen 1: Please read carefully a short text documenting the relationship between the political party Law and Justice (PiS) and the Church. As you probably remember, parliamentary elections took place in autumn 2019. PiS won the majority enabling him to form a government.

Screen 2: In the program of PiS in the chapter "Values and principles" we can read:

"... The Catholic Church is a depositary and spokesman for the moral teaching commonly known in Poland. In a wide social sense, it does not have any competitor and that is why it is fully justified to say that only nihilism can be opposed to moral teaching of the Catholic Church..."

During an election rally in Lublin on September 6, 2019, Jaroslaw Kaczynski said: "This nihilism we reject because nihilism . . . destroys everything."

Screen 3: Do you think that the theses included in the program of PiS and the statement by Jaroslaw Kaczynski conform or not to the spirit of the Polish Constitution, which affirms the impartiality of the state as far as religious questions are concerned?

- Definitely conform
- Rather conform
- Rather not conform
- Definitely not conform
- Difficult to say

Screen 4: Here is an example of how some priests and bishops express support for PiS during Sunday homilies. Bishop Senior of Czestochowa, Antoni Dlugosz, said in his homily in January 2018: "We are grateful for the wonderful two years of government, the best years for Poland. Our hope is back."

Some priests also appeal for voting for PiS candidates and help organizing rallies for them: A PiS candidates for the position of the president of Siedlce in local elections in 2018, Karol Tchórzewski, organized an electoral meeting in the Chapel of Blessed Virgin in the Saint Stanislas Church A parish priest in Wierzbna announced the collection of signatures supporting the candidacy of the president Andrzej Duda for the upcoming presidential election.

Screen 5: The PiS party supports Catholic media financially and expresses gratitude for their support.

According to OKO.press, since the beginning of PiS government, the total amount of public subsidies allocated to different projects of father Rydzyk amount to over 214 million zlotys (214.158.441 zl).

Please watch a short video from the celebration of the 28th anniversary of the of Radio Marya on December 8, 2019, two months after the last parliamentary elections, in which the Minister of Defense, Mariusz Blaszczak, reads a letter from Jaroslaw Kaczynski thanking father Rydzyk. (Video can be accessed with the following link: https://vimeo.com/409040943 using the password "treatment3".)

Transcript of the video:

"Taking this opportunity I would like to thank for your support of Law and Justice party, support of the camp of the United Right, expressed in the parliamentary elections. Thanks to your votes we have absolute majority in Sejm and we can continue our Polish politics of independence. There is another electoral battle awaiting us in spring, which we have to approach extremely mobilized, because a lot of things will depend upon its results."

Screen 6: Do you want to see the video once again?

- Yes
- No

Screen 7: Sources for treatment 2:

PiS program is here:
http://pis.org.pl/materialy-do-pobrania

Report about electoral meeting in Lublin september 6, 2019:
https://www.rp.pl/Wybory-parlamentarne-2019/190919919-Michal-Szuldrzynski-PiS-robi-z-Kosciola-politycznego-zakladnika.html

Media about picnic in Pułtusk:
https://wiadomosci.gazeta.pl/wiadomosci/7,114884,24751324,jaroslaw-kaczynski-w-pultusku-kto-podnosi-reke-na-kosciol.html
https://www.pch24.pl/kaczynski–kto-podnosi-reke-na-kosciol–ten-podnosi-reke-na-polske,67956,i.html

Information about the bishop from Częstochowa:
https://niezalezna.pl/212910-w-wyborczej-sie-zagotuje-biskup-na-jasnej-gorze-zgromil-totalna-opozycje-i-pochwalil-pis

Media about electoral meeting in Siedlce:
https://liberte.pl/wybory-2018-ksieza-pomagaja-w-agitacji-na-rzecz-pis-u/
https://www.facebook.com/DzienDobrySiedlce/posts/468327530321162

Media on collecting signatures supporting Andrzej Duda:
https://rzeszow.onet.pl/proboszcz-informuje-o-zbiorce-podpisow-poparcia-dla-andrzeja-dudy/99b3zwq
https://ekai.pl/kosciol-popiera-pis-polacy-odpowiedzieli/

oko.press on subsidies for father Rydzyk:
https://oko.press/214-238-441-zl-na-dziela-o-rydzyka/

E.3   Questionnaire, First Round

Screen 1: We invite you to participate in a survey conducted by Opinie.pl of IQS together with CBOS. Our customer is an academic institution so the study has a scientific character. Nevertheless it is not difficult and the first trials show it is interesting for a lot of people.

The survey concerns different issues, among others the question of sexual abuse of children by priests of the Catholic Church and the role of the Catholic Church in Poland. In the survey we will present some information, and then we will ask you what you think about it. All

information comes from publicly available (published) sources; we will always indicate what they are. You will always be able to skip any material.

We assure you that your answers will be kept secret. They will only be used in an aggregate form in anonymous statistical summaries. Nobody will ever know what were your answers to the questions. We count very much on your participation in our survey and on your response to all our questions. However, if you find some of the questions too difficult or too sensitive, you will be able to choose the option "refuse to answer." You will also be able to skip any of the presented materials.

Given what is said above, do you agree to participate in our survey?

- I agree
- I disagree

Screen 2: The study will consist of two stages. In the first stage, you will be asked to answer a set of questions. In the second stage, after 3-4 weeks, we will get back to you and ask to answer a very short survey. We would like all respondents participating in the first stage of the study, to also take part in the second stage. The quality (reliability) of our study will depend on this participation.

Our customer decided to support some charity foundations and allocate 2500 PLN to them. The amount transferred to each of the foundations will depend on the share of people who will choose each of the foundation in our survey. If you also participate in the second stage of our project, you will get the information about the results of the vote and the certificate of the actual bank transfer to the foundations. You will also be remunerated for the participation in the study.

Questionnaire *The following questions (until INT, inclusive) are asked at the time when the respondents subscribe to the online polling platform, i.e., before the survey takes place.*

SEX. Please indicate your gender:

- Woman
- Man

AGE. Please indicate your age: ... years

EDU. What is your education? Please indicate the highest education level achieved:

- Incomplete primary school
- Primary school
- Middle school
- Basic professional
- Incomplete secondary (secondary without final exam)
- Secondary professional
- Secondary general

- Post-secondary
- Higher incomplete (without diplomma)
- Higher bachelor degree (licence)
- Higher master degree
- PhD/postdoctoral

REG. Please indicate the województwo (region) where you live:

- Dolnośląskie
- Kujawsko-pomorskie
- Lubelskie
- Lubuskie
- Łódzkie
- Małopolskie
- Mazowieckie
- Opolskie
- Podkarpackie
- Podlaskie
- Pomorskie
- Śląskie
- Świętokrzyskie
- Warmińsko-mazurskie
- Wielkopolskie
- Zachodniopomorskie

SOR. Please indicate the size of the locality where you live:

- Rural
- City less than 20,000
- City 20,000–49,000
- City 50,000–99,000
- City 100,000–199,000
- City 200,000–500,000
- City more than 500,000

POSTCODE. Please indicate the postal code of your place of residence: ....

RODZINA. Please indicate your personal situation (only one answer):

○ Single

○ Informal partnership

○ Formal partnership (married)

○ In separation

○ Divorced

○ Widow

HOLD. How many people belong to your household? Indicate the numer of persons living with you and sharing your household. Please include yourself.

○ 1 person

○ 2 persons

○ 3 persons

○ 4 persons

○ 5 persons

○ 6 persons

○ 7 persons or more

MOTHX. How many people below 18 years old live in your household. Please indicate the persons whom you have custody of:

○ None

○ 1 person

○ 2 persons

○ 3 persons

○ 4 persons

○ 5 persons

○ 6 persons

○ 7 persons or more

EMST. What is your current professional situation. Please indicate all adequate answers. (MULTIPLE ANSWERS ARE POSSIBLE.)

☐ Pupil (in middle school, post secondary school)

☐ Student

☐ Permanent job

☐ Work occasionally

☐ Parental leave

☐ Retired/pensioner

☐ Unemployed

☐ Not working/work at home

☐ Other situation

WRK02.   In which sector do you work? (MULTIPLE ANSWERS ARE POSSIBLE.)

☐ Agriculture, hunting, forestry

☐ Fishing

☐ Mining

☐ Industry

☐ Electricity, gaz, water

☐ Construction

☐ Wholesale and retail trade and repair of motor vehicles

☐ Hotels, restaurants, bars

☐ Transport, communication, and warehouse management

☐ Financial intermediary (eg. banks)

☐ Retail estate services and services related to running businesses

☐ Public administration and national defense

☐ Education

☐ Healthcare and social ssistance

☐ Service activities, communal, social and individual activities

☐ Other

☐ IT

WRK04.   What is the profession you exercise? (MULTIPLE ANSWERS ARE POSSIBLE.)

☐ Professional engineer, architect

☐ Lawyer

☐ Graphic designer, programmer, database administrator

☐ Photographer, cameraman, musician

☐ Artist, writer, journalist, painter

☐ Doctor, vet, dentist

☐ Pharmacist

☐ Nurse, midwife

☐ Entrepreneur

☐ Representative of authorities, director

☐ Manager of different specialties

☐ Academic teacher

☐ Teacher at higher than primary school

☐ Teacher at primary school

☐ Specialist of management and administration

☐ Financial specialist

☐ Marketing specialist

- ☐ Computer scientist
- ☐ Civil servant
- ☐ Middle level personnel
- ☐ Office service employee
- ☐ Employee in transport
- ☐ Farmer in plant production
- ☐ Farmer in plant and animal production
- ☐ Farmer producing for its own needs
- ☐ Technician
- ☐ Worker
- ☐ Blacksmith, locksmith, metallurgist
- ☐ Welder
- ☐ Machine and device machinists
- ☐ Craftsman
- ☐ Electrician
- ☐ Machine operator
- ☐ Fitter
- ☐ Railwayman
- ☐ Trade and business intermediary
- ☐ Car driver
- ☐ Truck and bus driver
- ☐ Charwoman
- ☐ Seller
- ☐ Personal care worker
- ☐ Hairdresser, beautician
- ☐ Cook
- ☐ Server, barman, steward
- ☐ Professional soldier
- ☐ Employee of security services
- ☐ Employee of uniformed services (fireman, policeman)
- ☐ None of those
- ☐ HR
- ☐ Higher level manager

PINC. Please indicate your net monthly income obtained from all sources. Please choose one answer.

- ○ No income
- ○ Less than 500 zł
- ○ 501 – 1,000 zł
- ○ 1,001 – 1,500 zł
- ○ 1,501 – 2,000 zł
- ○ 2,001 – 3,000 zł
- ○ 3,001 – 4,000 zł
- ○ 4,001 – 5,000 zł
- ○ 5,001 – 6,000 zł
- ○ 6,001 – 7,000 zł
- ○ 7,001 – 8,000 zł
- ○ 8,001 – 9,000 zł
- ○ 9,001 – 10,000 zł
- ○ More than 10,000 zł
- ○ Do not know, difficult to say
- ○ Refuse to answer

HINC. Please indicate net total income of all members of your household. Please choose one answer.

- ○ No income
- ○ Less than 500 zł
- ○ 501 – 1,000 zł
- ○ 1,001 – 1,500 zł
- ○ 1,501 – 2,000 zł
- ○ 2,001 – 3,000 zł
- ○ 3,001 – 4,000 zł
- ○ 4,001 – 5,000 zł
- ○ 5,001 – 6,000 zł
- ○ 6,001 – 7,000 zł
- ○ 7,001 – 8,000 zł
- ○ 8,001 – 9,000 zł
- ○ 9,001 – 10,000 zł
- ○ More than 10,000 zł
- ○ Do not know, difficult to say
- ○ Refuse to answer

TV.   On average how much time did you spend last week watching TV?

  ○ I do not watch TV

  ○ Less than one hour per day

  ○ From 1 to 2 hours per day

  ○ From 2 to 3 hours per day

  ○ More than 4 hours per day

INT.   Which of the following internet services do you use at least once a week?

  ○ Facebook

  ○ Gazeta (Gazeta.pl)

  ○ Interia (Interia.pl)

  ○ Instagram

  ○ Onet (Onet.pl)

  ○ o2 (o2.pl)

  ○ Snapchat

  ○ Wirtualna Polska (WP.pl)

  ○ YouTube

  ○ Twitter

  ○ wPolityce.pl

  ○ Wyborcza.pl

  ○ Niezalezna.pl

  ○ None of those

The following questions are asked at the time of the survey.
Questions NQ07 - Q17 are asked pre-treatment, i.e., before the information treatments take place.

NQ07.   Please indicate the locality/gmina where you were born. In which locality were you born? To which gmina belongs this locality?

Q01.   How would you describe your interest in politics?

  ○ Very big

  ○ Big

  ○ Medium

  ○ Small

  ○ None

  ○ Difficult to say

  ○ Refuse to answer

Q02. Do you think that most people can be trusted or that one should never be too careful in dealing with people?

- One can trust most of people
- One is never too careful
- Difficult to say
- Refuse to answer

Q03. On the scale from 1 (left) to 7 (right), how would you describe your political opinions?

      ○   ○   ○   ○   ○   ○   ○

Left (1) (2) (3) (4) (5) (6) (7) Right

Q04. Did you vote in the parliamentary election to Sejm and Senat on October 13, 2019?

- Yes
- No
- Refuse to answer

Q05. (If Yes to Q04) For the candidate of which party did you vote in the elections to Sejm in 2019?

- Polskie Stronnictwo Ludowe - Koalicja Polska (Polskie Stronnictwo Ludowe , Kukiz'15, UED)
- Prawo i Sprawiedliwość (with Solidarna Polska and Porozumienie)
- Lewica (Nowa Lewica (previously SLD), Wiosna, Lewica Razem)
- Konfederacja Wolność i Niepodległość (KORWiN, Ruch Narodowy, Braun)
- Koalicja Obywatelska (Platforma Obywatelska, Nowoczesna, Inicjatywa Polska, Zieloni)
- Other party or electoral committee
- Refuse to answer

Q06. Did you vote in the elections to the European Parliament on May 26, 2019?

- Yes
- No
- Refuse to answer

Q07. (If Yes to Q06) For the candidate of which party did you vote in the elections to the European Parliament on May 26, 2019?

- Kukiz'15
- Prawo i Sprawiedliwosc
- Wiosna Roberta Biedronia
- Konfederacja Korwin Braun Liroy narodowcy
- Koalicja Europejska (PO PSL .N SLD Zieloni)
- Lewica razem
- Other committee
- Refuse to answer

NQ05. What is your confession (to which Church or religious community do you belong)?

- ○ Roman Catholic Church
- ○ Orthodox Church
- ○ Jehova's Witnesses
- ○ Protestantism
- ○ Greek Catholic Church
- ○ Islam
- ○ Judaism
- ○ Buddhism
- ○ Other (please, specify: NQ0509TXT)
- ○ I do not belong to any religious community
- ○ Refuse to answer

Q08. Do you participate in religious practices, such as masses, other religious ceremonies, and if so, how often?

- ○ Yes, several times per week
- ○ Yes, once a week
- ○ Yes, on average once or twice per month
- ○ Yes, several times a year
- ○ I do not participate at all
- ○ Refuse to answer

NQ02. How often do you take communion?

- ○ Several times per week
- ○ Once a week
- ○ On average once or twice per month
- ○ Several times a year
- ○ Never
- ○ Difficult to say
- ○ Refuse to answer

Q09. Independently of participating in religious practices, do you consider yourself as a person:

- ○ Profoundly religious
- ○ Religious
- ○ Rather not religious
- ○ Completely non-religious
- ○ Refuse to answer

NQ09A. Did you receive the sacrament of confirmation?

○ Yes

○ No

○ Refuse to answer

Q10. Did you devote last year your time, services, money, cloth or books for charity?

○ Yes

○ No

○ Do not remember

○ Refuse to answer

NQ03. If your answer to the previous question is positive, was the charity related to the Catholic Church?

○ Yes

○ No

○ Do not remember

○ Refuse to answer

NQ09. Did you participate during the last year in non-religious events or activities organized by the Catholic Church (such as for instance collecting money for the needy, helping elderly or unemployed, going for vacation, getting psychological help, participate in cultural or sport events, getting language, professional or computer training)?

○ Yes

○ No

○ Refuse to answer

Q11. Which of the following TV channels, and which programs are for you the main source of everyday information about the events in Poland and abroad? You can choose no more than two answers. As the first one please indicate the main source of information:

☐ Fakty, other programs on TVN (except TVN24)

☐ TVN24

☐ Wiadomosci, Teleexpress and other programs of the First Channel of TVP (TVP1)

☐ Panorama and other programs of the Second Channel of TVP (TVP2)

☐ TVP Info

☐ Wydarzenia and other programs of Polsat (not Polsat NEWS)

☐ Polsat News

☐ Telewizja Trwam

☐ Telewizja Republika

☐ Other

☐ Do not watch programs about events in Poland and abroad

☐ Refuse to answer

Q12. (Q1201, etc) What are other media that are for you source of everyday information about the events in Poland and abroad?

- ○ Radio Maryja
- ○ Polskie radio (Jedynka, Dwojka, Trojka)
- ○ RFM, Radio Zet
- ○ TOK FM
- ○ Newspapers, weeklies
- ○ Internet media
- ○ Social media
- ○ Other
- ○ None of those
- ○ Refuse to answer

Q13. Do you have access to stationary Internet at home?

- ○ Yes
- ○ No
- ○ Refuse to answer

NQ08. To what extent do you agree with the statement that a woman – if she decides so – should have the right to abortion during the first weeks of pregnancy?

- ○ Definitely agree
- ○ Rather agree
- ○ Rather disagree
- ○ Definitely disagree
- ○ Difficult to say
- ○ Refuse to answer

Q14. Did you see the film "Clergy" (*"Kler"*) by Wojciech Smarzowski?

- ○ Yes
- ○ No
- ○ Refuse to answer

Q15. In 2019, Tomasz and Marek Sekielski made a documentary "Tell No One" (*"Tylko nie mów nikomu"*) about child sexual abuse in the Catholic Church in Poland. The film could be seen on YouTube online platform. It was also broadcasted on TVN last year.

Did you see this film?

- ○ Yes
- ○ No
- ○ Refuse to answer

Q16. If yes, where did you see it?

- On Internet, YouTube
- On TVN
- Somewhere else
- Refuse to answer

Q17. Do you think the spread of coronavirus is

- The result of the working of nature
- The result of deliberate action of a group of people
- Difficult to say
- Refuse to answer

RANDOMIZATION INTO:
*   (1) CONTROL GROUP*
*   (2) TREATMENT 1*
*   (3) TREATMENT 2*
TAKES PLACE AT THIS MOMENT OF THE SURVEY.

The following questions are asked post-treatment.

Q18. Do you know, when was the law requiring anybody to report about the known cases of sexual abuse of children to the state prosecutor adopted?

- In 2000
- In 2005
- In 2017
- There is no such law
- Do not know
- Refuse to answer

Q18A. Do you think that the mutual support of the ruling party and the Catholic Church is

- Admissible
- Rather admissible
- Rather inadmissible
- Inadmissible
- Difficult to say

Q19A. If the presidential elections were to take place on May 10, 2020, as initially planned before the pandemia of COVID-19, and if there were no epidemiological danger, would you participate in the elections?

○ Yes

○ Non

○ I haven't decided yet

○ Refuse to answer

Q19. (If Yes to Q19A) For whom would you vote in such situation in the upcoming presidential elections?

○ Andrzej Duda

○ Małgorzata Kidawa-Błońska

○ Szymon Hołownia

○ Władysław Kosiniak-Kamysz

○ Robert Biedroń

○ Krzysztof Bosak

○ Inny kandydat

○ Jeszcze nie zdecydował[am|em]

○ Odmawiam odpowiedzi

Q19B. Given the present situation related to threat of coronavirus, do you intend to take part in voting by correspondence if such vote had to take place in May 2020?

○ Yes

○ No

○ I haven't decided yet

○ Refuse to answer

Q19C. (If yes to Q19B) For whom would you vote in such situation if the presidential elections were to take place by correspondence?

○ Andrzej Duda

○ Małgorzata Kidawa-Błońska

○ Szymon Hołownia

○ Władysław Kosiniak-Kamysz

○ Robert Biedroń

○ Krzysztof Bosak

○ Inny kandydat

○ Jeszcze nie zdecydował[am|em]

○ Odmawiam odpowiedzi

Q20. Do you agree with the following statements:

- "The problem of pedophilia in Church is exaggerated." (**Q20_01**)
- "The attack on the Church is underway which is used to reduce its authority and introduce moral changes." (**Q20_02**)
- "The Catholic Church is crucial for morality of the Polish society." (**Q20_03**)

  ○ I completely agree
  ○ I rather agree
  ○ I rather disagree
  ○ I completely disagree
  ○ Difficult to say
  ○ Refuse to answer

NQ12. There is a lot of discussions in Poland about the place of religion in the public life. Please answer if you are offended or not offended by the following situations:

- Blessings by priests of places and public buildings (**NQ12_01**)
- The Church giving opinion on laws voted by the Parliament (**NQ12_02**)
- Priests express their political opinions before elections during the mass (**NQ12_03**)

  ○ I am definitely offended
  ○ I am rather offended
  ○ I am rather not offended
  ○ I am definitely not offended
  ○ Difficult to say
  ○ Refuse to answer

Q21A. Do you think that the lessons of religion should take place at school or at parish premises?

  ○ At school
  ○ At parish premises
  ○ Difficult to say
  ○ Refuse to answer

Q21B. (If replied "at school" to Q21A) Why do you think the lessons of religion should take place at school?

  ○ Because it is more convenient
  ○ Because at school the children are safer – it is easier to control the behavior of priests and teachers
  ○ Other reason:

Q21C. (If replied "at parish premises" to Q21A) Why do you think that the lessons of religion should take place at parish premises?

- ○ Because school should be separated from the Church
- ○ Because the church is a natural place for religious experience
- ○ Other reason

Q22. Do you think that the salaries of priests teaching religion at school should be paid from the state budget?

- ○ Yes
- ○ No
- ○ Difficult to say
- ○ Refuse to answer

Q23. Should the budget money be spent on financing Church-run media, like Radio Maryja or TV Trwam?

- ○ Yes
- ○ No
- ○ Difficult to say
- ○ Refuse to answer

Q24. Do you think that the reaction of the Polish Catholic Church to the information of sexual abuse of minors by the clergy is sufficient?

- ○ Sufficient
- ○ Insufficient
- ○ Difficult to say
- ○ Refuse to answer

Q26. Do you trust ... ? (The order in which respondents were asked about each institution was randomized.)

- Parliament (**Q26_01**)
- Senat (**Q26_02**)
- President (**Q26_03**)
- Catholic Church (**Q26_04**)
- Government (**Q26_05**)
- Courts (**Q26_06**)
- Priest in your parish (**Q26_07**)
- Your neighbors (**Q26_08**)
- Police (**Q26_09**)
- Episcopate (**Q26_10**)

- The Pope (**Q26_11**)

    ○ Definitely yes
    ○ Rather yes
    ○ Rather no
    ○ Definitely no
    ○ Difficult to say
    ○ Refuse to answer

PP01. On the scale from 0 (very negative) to 10 (very positive) how would you describe your attitude towards the following political parties :

- Prawo i Sprawiedliwość (with Solidarna Polska and Porozumienie) (**PP01_01**)

    ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
    0 1 2 3 4 5 6 7 8 9 10

- Koalicja Obywatelska PO .N IPL Zieloni (**PP01_02**)

    ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
    0 1 2 3 4 5 6 7 8 9 10

- Lewica (SLD, Wiosna, Lewica Razem) (**PP01_03**)

    ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
    0 1 2 3 4 5 6 7 8 9 10

- Polskie Stronnictwo Ludowa Kukiz '15 (**PP01_04**)

    ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
    0 1 2 3 4 5 6 7 8 9 10

- Konfederacja Wolnosc i Niepodleglosc (**PP01_05**)

    ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
    0 1 2 3 4 5 6 7 8 9 10

    ○ Difficult to say

    ○ Refuse to answer

Q27. We would like to support on your behalf charity foundations offering scholarships to children and young people. We will allocate 2500 PLN among the following foundations. The amount of money each of the foundations receives will depend on the shares of respondents choosing this foundation. So please indicate to which of the following foundations you would like us to transfer money. When the study is over, you will get the information about the results of this vote and the certificates of the actual transfers to the foundations. Please, put the cross next to one of the four foundations, which you would like us to support on your behalf. (The order in which each respondent saw the foundations was randomized.)

    ○ Katolicka Wspólnota Chleb Życia.
    A catholic charitable foundation that gives scholarships to support talented children who are in a difficult material situation.

    https://chlebzycia.org/fundusz-stypendialny/

- ○ Fundacja Fabryki Marzeń.
  A civic charitable foundation that gives scholarships to support talented children who are in a difficult material situation.

  http://www.fabrykimarzen.org/nasze-fabryki/fabryka-wspierania-talentow

- ○ EFC.
  A foundation of Roman Czernecki that provides a scholarship program to support students from smaller towns to get education in good schools in big cities.

  https://efc.edu.pl/programy/horyzonty

- ○ Dzieło Nowego Tysiąclecia.
  A foundation created by the Polish Episcopate that runs a scholarship program helping to equalize chances of young people from small localities.

  https://dzielo.pl/o-fundacji/kim-jestesmy/

E.4 Questionnaire, Follow-up Round

Screen 1: We invite you to participate in the second part of the study conducted by Opinie.pl of IQS together with CBOS. A couple of weeks ago you participated in the first stage of this study. Now we are coming back to you asking you to answer more questions. Some of the questions will be similar to those we asked in the first part: this is because we would like to know if your opinion has changed. This survey is much shorter than the previous one. We would like everybody who answered our questions in the first stage do it this time as well. The reliability of our study will depend on your participation. We remind you that our contractor decided to support some charity NGOs in your name, allocating 2500 PLN among them. The amount transferred to each of four organizations depended on the number of people who have chosen each NGO. According to this promise, the money was already transferred. At the end of the survey you will find the information about the actual amount transferred to each organization and the proofs of bank transfers.

Screen 2: We inform you that there are questions in the survey which concern sensitive issues such as political preferences or religion. We assure you that all your answers will be kept secret. Information such as names or addresses will not be kept and any identification of a person participating in the study will not be possible. All information will only be used in an aggregate form in anonymous statistical summaries. Nobody will ever know what were your answers to the questions.

P01. If the presidential elections were to take place next Sunday, would you participate in the elections?

- ○ Yes
- ○ No
- ○ I haven't decided yet
- ○ Refuse to answer

P01A. (If Yes to P01) For whom would you vote in such situation if the presidential elections were to take place next Sunday?

- Andrzej Duda
- Rafał Trzaskowski
- Szymon Hołownia
- Władysław Kosiniak-Kamysz
- Robert Biedroń
- Krzysztof Bosak
- Inny kandydat
- I haven't decided yet
- Refuse to answer

PA. Do you consider the question of pedophilia in the Catholic Church as socially important?

- This is a definitely important question
- This is rather an important question
- This is rather an unimportant question
- This is definitely an unimportant question

P02. Did you see the second part of Sekielskis' film "Hide and seek" ("Zabawa w chowanego")?

- Yes
- No
- Refuse to answer

P02A1. (If Yes to P02) Where did you see Sekielskis' film "Hide and seek"?:

- In internet, YouTube
- On TVN
- Elsewhere (specify where ...)
- Refuse to answer

P02A. Since you participated in the first part of our survey have you seen the first part of Sekielskis' film "Tell no one"?

- Yes
- No
- Refuse to answer

P03. According to you, who should be blamed for the pedophilia in the Catholic Church?

- Individual priests
- Not only individual priests but also the entire Church as an institution
- Do not know/difficult to say
- Refuse to answer

NQ13. Do you trust ... ? (The order in which respondents were asked about each institution was randomized.)

- Parliament (**NQ13_01**)
- Senat (**NQ13_02**)
- President (**NQ13_03**)
- Catholic Church (**NQ13_04**)
- Government (**NQ13_05**)
- Courts (**NQ13_06**)
- Priest in your parish (**NQ13_07**)
- Your neighbors (**NQ13_08**)
- Police (**NQ13_09**)
- Episcopate (**NQ13_10**)
- The Pope (**NQ13_11**)

  - Definitely yes
  - Rather yes
  - Rather no
  - Definitely no
  - Difficult to say
  - Refuse to answer

PP01. On the scale from 0 (very negative) to 10 (very positive) how would you describe your attitude towards the following political parties:

- Prawo i Sprawiedliwość (wraz z Solidarną Polską i Porozumieniem) (**PP01_01**)
  - ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
  - 0 1 2 3 4 5 6 7 8 9 10

- Koalicja Obywatelska PO .N IPL Zieloni (**PP01_02**)
  - ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
  - 0 1 2 3 4 5 6 7 8 9 10

- Lewica (SLD, Wiosna, Lewica Razem) (**PP01_03**)
  - ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
  - 0 1 2 3 4 5 6 7 8 9 10

- Polskie Stronnictwo Ludowe Kukiz '15 (**PP01_04**)
  - ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
  - 0 1 2 3 4 5 6 7 8 9 10

- Konfederacja Wolnosc i Niepodleglosc (**PP01_05**)
  - ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
  - 0 1 2 3 4 5 6 7 8 9 10

- Difficult to say
- Refuse to answer

PB01. What do you think about the separation of the Catholic Church and the State in Poland? Do you think:

- The current level of separation of the Church and the State is adequate
- The Church should be more separated from the State
- The Church should be more closely related to the State
- Do not know, difficult to say
- Refuse to answer

NQ17. How would you describe your faith?

- I am a believer and I follow Church's recommendations
- I am a believer in my own way and I do not always follow Church's recommendations
- I am not a believer
- Difficult to say
- Refuse to answer

NQ15. How many times did you participate in the mass during the last two weeks? Please, take into account all masses, including those in the church and those in which you participated through TV, radio and the internet.

- Several times per week, altogether more than 4 times
- Once a week, 4 times
- Less than once a week, once or twice
- I did not participate
- Refuse to answer

NQ16. In the future, do you think you will go to church?

- Several times a week
- Once or twice a month
- Several times a year, or less
- I will not participate
- Difficult to say

P4. Did you hear recently about cases of sexual abuse of children by priests of the Catholic Church in your close environment: locality, gmina, parish, neighboring parishes, or diocese?

- Yes
- No
- Do not remember
- Refuse to answer

P5. During the last two weeks, were you interested in this issue of the abuse of children by priests to the point that you actively search information on this topic in the media or in the internet?

○ Yes

○ No

○ Refuse to answer

NQ18. Do you agree with the statement "pedophiles within the Catholic Church are treated differently than pedophiles outside the Church"?

○ I definitely agree

○ I rather agree

○ I rather disagree

○ I definitely disagree

○ Difficult to say

○ Refuse to answer

P6. Consider an adult who was a victim of sexual abuse a long time ago when she/he was a child by a priest of the Catholic Church. Do you think he/she should speak out and testify or, on the contrary, there is no point in speaking out because the abuse happened a long time ago?

○ The victim should speak out

○ There is no point in speaking out

○ Difficult to say

○ Refuse to answer

Last Screen: In the first part of our study we asked you to choose a foundation that we can support on behalf of participants of this study. Overall, 12,49% of respondents chose Katolicka Wspólnota Chleb Życia, 61,87% chose Fundacja Fabryki Marzeń , 16,13% chose Edukacyjna Fundacja im. prof. Romana Czerneckiego, and 9,51% chose Fundacja Dzieło Nowego Tysiąclecia.

Below we present the payslips confirming that we have transferred the money to the foundations.

Thank you for your participation!