Holy words, worldly deeds: The role of Pope Francis in Violence Against Women*

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Abstract

This study examines the influence of religious leaders on social attitudes by analysing Pope Francis' impact on beliefs about the justification of violence against women (VAW). Using a content analysis of his speeches, we document sustained engagement with topics related to women's rights. Exploiting variation in speech timing, religious affiliation, and proximity to the Vatican, we find that greater exposure to the Pope's statements is associated with lower acceptance of VAW. The effect appears to operate through heightened salience of religious values, reinforcing moral norms, and immediate increases in online search activity and media coverage of VAW-related topics. These findings highlight the power of religious authority figures to shape social attitudes and public discourse on gender-based violence.

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"—– It is my hope that the invaluable role of women in society may be increasingly acknowledged worldwide and that all forms of injustice, discrimination, and violence against women come to an end. Every form of violence inflicted upon a woman is a blasphemy against God. ——Women are offended, beaten, raped, and forced into prostitution. Every violence inflicted on women is a profanation of God, born of a woman. Humanity's salvation came from the body of a woman: By how we treat the body of a woman, we can understand our level of humanity. ——"

Pope Francis

1 Introduction

Violence against women (VAW) is a pervasive issue with severe consequences for victims (Borker et al. 2021, Campbell 2002) and society at large. Globally, 1 in 3 women is estimated to have experienced violence by an intimate partner in their lifetime (WHO 2021). Although the role of institutions in the prevention of VAW is widely recognised, there is limited evidence on which institutional settings are effective in mitigating such violence. Even scarcer is the evidence on the influence of leaders in reducing VAW, with existing research focusing primarily on the effect of women's leadership (Anukriti et al. 2022, Bochenkova et al. 2023). Yet, leaders more broadly can shape outcomes related to VAW through multiple channels: by influencing policies, signaling the condemnation of violence, and role-modeling behaviours.

In this paper, we add to the emerging evidence on the role of leaders in VAW by focusing on a leader who has been uniquely positioned to make an impact: Pope Francis. As the head of the Catholic church and sovereign of the Vatican state, Pope Francis has delivered numerous speeches condemning VAW, promoting dignity and respect for women, and affirming their value in society. We investigate whether such high-profile condemnations influence public attitudes toward the justification of VAW, and explore the mechanisms through which leadership can shape perceptions.

First, we perform a content analysis of the entire corpus of Pope Francis' speeches using Latent Dirichlet Allocation (LDA) topic modelling to identify key themes and accurately pinpoint speeches addressing VAW (Blei et al. 2003). Our content analysis indicates that

Pope Francis has consistently spoken on a range of issues affecting women, including violence, abuse, trafficking, prostitution, and sexual exploitation. Second, we assess how Pope's public stance on VAW shapes attitudes among exposed individuals, using data from the World Values Surveys (WVS) covering 64 countries from 2013 to 2022. Our analysis is based on a triple Difference-in-Differences (DDD) strategy, using three different sources of variation in exposure to Pope's speeches: temporal changes in the frequency of his speeches, differences in Catholic affiliation, and proximity to the Vatican. Our results suggest that exposure to Pope Francis' speech on VAW is associated with a notable decrease in the justification of such violence among individuals. Third, we explore potential mechanisms driving our baseline effects. We find that Pope Francis' speeches on VAW appear to heighten the salience of religious values, thereby reinforcing moral norms that discourage violence. Speeches may also prompt increased attention to VAW, leading to information-seeking behaviour that could influence people's beliefs and attitudes about its justification. To assess this, we analyse Google Trends data, which reveal an immediate increase in searches for topics related to VAW following the Pope's speeches. This indicates that addresses effectively stimulate public engagement and information seeking that can influence attitudes. We perform a series of sensitivity and robustness tests confirming these results.

This study contributes to the existing literature in three ways. First, it expands the emerging body of research on the role of leaders in addressing VAW by focusing on a religious leader, the head of the Catholic church, whose influences extend beyond national borders and may influence values and behaviours in distinctive ways. To the best of our knowledge, there are only a few related studies. For example, Bochenkova et al. (2023) show that female mayors in Brazil correlate with a 50 percent reduction in VAW and homicide rates. Anukriti et al. (2022) find that exposure to women politicians in India increases the reporting of physical IPV. In contrast, Mosquera & Herrera (2023) document a negative impact of leadership, showing that derogatory public remarks by former Ecuadorian President Rafael Correa were associated with an increase in VAW. This paper is among the first to examine the influence of a global religious leader on attitudes toward VAW.[1]

Second, our study contributes to the growing literature on the social influence of the

[1]While our study investigates the impact of a global religious leader, Ronchi & Smith (2021) provide evidence at the firm level that male managers, as key authority figures, play an important role in shaping gender-related outcomes in the workplace.

Pope by examining its effect on VAW, an outcome that has not been previously studied in this context. Previous research has explored the influence of Pope on other domains. For example, Bassi & Rasul (2017) analyse the impact of Pope John Paul II's visit on fertility-related beliefs and behaviour in Brazil, while Farina & Pathania (2020) examine how papal visits to Italian provinces between 1979 and 2012 affected abortion rates. Stroebel & van Benthem (2012) investigates the role of Bishop Boniface Lele's teaching on sexual behaviour in reducing HIV infections in Kenya. Additional studies have assessed Pope's influence in various areas, including migration outcomes (Deiana et al. 2023), social friendship and fraternity (Gascoigne 2021), conflict (Couttenier et al. 2025), crime (Johnston et al. 2025), COVID-19 vaccination campaigns (Gaweł et al. 2021), public opinion on climate change (Li et al. 2016) and attitudes toward anti-poverty measures (Ladini & Faggiana 2024). Beyond the papacy, Wang (2021) show that exposure to Father Coughlin's 1936 radio broadcasts reduced support for Franklin D. Roosevelt, particularly in predominantly Catholic regions.

Third, insofar as Pope's speeches convey information about VAW and its consequences, our work contributes to the emerging literature on the role of information campaigns in VAW. Previous studies show that media coverage, targeted awareness campaigns and knowledge acquisition can significantly influence help seeking and reporting behaviours related to violence against women (Bursztyn et al. 2024, Cheng & Hsiaw 2022, Colagrossi et al. 2023, 2022, Gauthier 2022, Sharma 2023). Our paper extends this literature by examining the effect of public statements of a prominent religious leader, rather than traditional media or formal campaigns, on social attitudes towards the justification of VAW. Hence, we provide evidence on how information disseminated through a religious authority can shape beliefs and norms, complementing previous work on media and awareness-based interventions.

The rest of the paper is organized as follows. Section 2 describes the data, Section 3 outlines the empirical framework, Section 4 presents the results and Section 5 concludes.

2 Data

2.1 Pope Francis' speeches

Pope Francis, as head of the Catholic Church and sovereign of the Vatican City State, led a global community of approximately 1.4 billion followers, and his actions were widely regarded to have global influence (Gannett 2024).[2] Throughout his papacy, he consistently addressed violence against women and the broader treatment of women in society. He denounced abuse, trafficking, prostitution, sexual violence, inequality, slavery, injustice, and discrimination, characterising them as crimes against human dignity and violations of the value of life. In his speeches, he highlighted the suffering of female survivors, stressed the importance of acknowledging their experiences, and emphasised the need to ensure that their voices are heard. Some of his speeches were also covered by international media (see, for example, Allen et al. (2022), Balmer (2020), Harris (2020), Reuters (2018)). In Supplementary Appendix B, we present a selection of key excerpts from Pope Francis' speeches, organised by various VAW-related themes.

We draw information from The Holy See Archive - Catechism of the Catholic Church, which has a detailed collection of all Pope Francis' speeches, prayers, messages, travels, and homilies, among others.[3] We downloaded all 1,812 speeches by Pope Francis available from 2013 to 2022. Although many of the speeches have English translations, some are only available in Spanish, Italian, or German. To ensure that we included all potentially relevant content, particularly references to VAW, we used Google Cloud service to translate speeches in English.[4]

Next, we use a text mining approach to analyse Pope Francis' speeches (Ash & Hansen 2023). Our goal is twofold: to identify the main themes discussed in his speeches and to determine which speeches explicitly refer to VAW. We begin by preprocessing the text data, converting all text to lowercase, removing symbols, punctuation, and stop words, and

[2]Pope Francis served as head of the Catholic Church from March 13, 2013, to April 21, 2025.

[3]See official website of the Holy See, https://www.vatican.va/content/francesco/en.html for details of Pope Francis' speeches. The archival of speeches is on a monthly basis and starts from 2013 onwards.

[4]We translated 195 of the Pope's speeches into English. A potential concern is that translation errors or nuances lost in translation could introduce measurement noise and bias our results. To address this issue, we re-estimate our baseline specification after excluding all translated speeches. As shown in column (2) of Appendix Table D4, the results remain robust, suggesting that our findings are not driven by translation-related inaccuracies.

tokenising the cleaned text. To extract underlying themes, we apply the Latent Dirichlet Allocation (LDA) topic modelling method introduced by Blei et al. (2003). This approach enables us to systematically explore the speech corpus, reveal dominant topics, and identify terms associated with VAW and related forms of violence. Supplementary Appendix A provides detailed information on data preprocessing, implementation of the topic model, identification of VAW-related terms, and index construction.

Figure 1 presents the 100 words most frequently used in Pope Francis' speeches derived from the LDA topic model. Although references to religion and God are the most common, speeches also emphasise themes such as peace, love, and hope. Notably, the word *"women"* appears among the top 100 terms, indicating that Pope Francis has regularly addressed issues concerning women in his public messages. To examine whether Pope Francis explicitly addressed VAW, Appendix Table A1 presents the results of the LDA topic model with 30 topics, showing the top five terms for each topic and their assigned labels.[5] While the topics cover a variety of issues, including climate and environmental concerns (Topic 2), religion (Topics 13, 17, and 30), conflict (Topic 24) and migration (Topic 10), we identify Topic 19 as addressing women's issues, including abuse, victims, and trafficking. These results provide evidence that Pope Francis has spoken extensively on VAW.

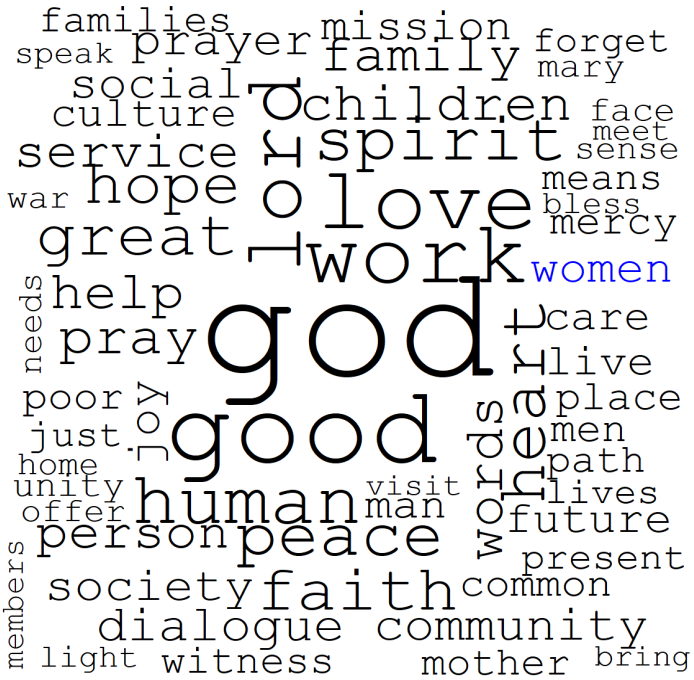
Finally, we identify speeches explicitly addressing VAW by generating n-grammes, focusing on trigrams, which are sequences of three words related to VAW present in Pope's speeches. We then perform a keyword-in-context (KWIC) analysis to detect these VAW-related trigrams in the speeches. We retain the top 20 trigrams (or fewer) for each keyword, resulting in 250 entries.[6] Then, we use principal component analysis (PCA) to construct our main variable of interest, the *VAW Index*. Specifically, we compute the relative frequencies of VAW-related trigrams by dividing the total count of each trigram by the total word count in the corresponding speech. These relative frequencies are then standardised prior to using PCA. Finally, the resulting index is normalized to a 0–1 scale for ease of interpretation and comparability. In addition, we create two supplementary indices using the same method:

[5]We also evaluate the optimal number of topics based on the perplexity scores across a varying topic numbers - 10, 15, 20, and 30. Since identifying the exact number of topics is not central to our analysis, we focus on the 30-topic model to provide granular insight. The LDA model produces somewhat similar results when the number of topics is varied.

[6]Specifically, we identified the top 20 trigrams (or fewer) associated with each keyword using results from the LDA topic modelling. These trigrams represent the most frequently co-occurring three-word combinations related to VAW.

one capturing references to general violence not specific to women, and another capturing non-violence-related terms, such as peace, good, and hope.[7]

Figure 1. Top 100 most frequently used words in Pope's speeches



Notes: The figure displays the 100 most frequently used words across 1,812 speeches delivered by Pope Francis between 2013 and 2022.

2.2 World Values Survey

Our main dataset, the World Values Survey (WVS), is a global collection of surveys that cover a wide range of topics related to social, economic, and religious values, as well as a rich set of demographic characteristics of respondents. The WVS collects nationally representative data in 100 countries around the world and has been conducted in seven waves so far. It is a repeated cross-sectional dataset with the first wave (wave 1), conducted in 1981-1984. The most recent wave (wave 7) collected information from 70 countries during the period 2017-2022.

Our analysis uses WVS data from wave 6 and wave 7 from 2013 to 2022, aligning with the availability of Pope Francis' speech records during this period. Of the 104,069 total

[7]Supplementary Appendix A provides detailed information on KWIC search terms, trigrams, and the construction of these indices.

observations, entries that lack interview dates or contain missing responses for the outcome variable are excluded from the analysis. The final sample consists of 96,340 observations in 64 countries with 12,366 observations in wave 6 and 83,974 observations in wave 7. We match the survey interview dates with the dates of Pope Francis' speeches. In cases where an exact correspondence is not available, we assign the chronologically nearest speech date to ensure that speech data are not discarded due to imperfect alignment.

We measure our main outcome variable, attitudes toward VAW, using the WVS question on the justification of beating the wife.[8] Respondents rate how justifiable it is for a man to beat his wife on a scale of 1 to 10, where 1 means "Never justifiable" and 10 means "Always justifiable". Hence, our main outcome variable, *JustifiableVAW*, which is the belief of individuals that VAW can be justified, is coded as 1 if the respondent selects any value from 2 to 10, indicating some level of justification, and 0 if the response is "Never justifiable", indicating complete rejection of such behaviour.

In addition, we rely on three primary explanatory variables to identify individual exposure to speeches. The first is the *VAW index* we developed drawing information from the full corpus of the Pope's speeches. This index captures both the timing and intensity of Pope Francis' references to VAW in his speeches. Second, we use information on the religious denomination available in the WVS.[9] Building on previous research, we expect that Pope's speeches are more likely to impact those of the Catholic faith compared to other religious groups (Deiana et al. 2023). Hence, we construct a binary indicator equal to 1 if the respondent identifies as *Catholic*, and 0 otherwise. Third, we incorporate spatial variation in exposure by accounting for each country's proximity to the Vatican, the primary location from which Pope Francis delivered his addresses.[10] Bilateral distance data for all countries in our sample are obtained from Pellegrino et al. (2021), who define geographical distance as the average population-weighted distance (in kilometres) between pairs of cities in countries.

[8] We use attitudes rather than prevalence outcomes for two main reasons. First, to our knowledge, no global individual-level dataset provides comparable information on VAW prevalence. Although Demographic and Health Surveys (DHS) include data on intimate partner violence, they lack the religiosity measures needed to identify individuals exposed to Pope's speeches and to analyse potential mechanisms. Second, attitudes have been shown to correlate with actual prevalence (Heise & Kotsadam 2015), and shifts in attitudes influenced by the Pope's messages may, in turn, affect real-world behaviours and outcomes.

[9] The WVS categorises individuals into the following religious denominations: (1). Roman Catholic; (2). Protestant; (3). Orthodox(Russian/Greek/etc); (4). Jew; (5). Muslim; (6). Hindu; (7). Buddhist; and (8). Other (write in).

[10] Approximately 71% of all speeches delivered during our study period took place within the Vatican.

We measure each country's distance from the Vatican and define proximity as the negative value of this value, such that higher values (less negative) correspond to greater geographical closeness. Countries closer to the Vatican are therefore more likely to be exposed to or influenced by the Pope's messages, due to factors such as stronger media coverage, historical and cultural ties to the Catholic Church, and greater importance of Vatican-related news in public discourse.

By combining these three measures - religious affiliation, the intensity and timing of VAW-related speech content, and proximity to the Vatican - we are able to identify people most likely to be exposed to Pope's messages across the world. This approach allows us to systematically compare individuals with high exposure to those with minimal or no exposure to investigate whether such speeches may influence attitudes toward VAW.

The WVS includes information on demographic characteristics such as gender, age, marital status, education, number of dependent children, employment, and income. We include these variables as controls in our specifications. The summary statistics of all the variables used in our analysis are presented in Table 1. About 28% of the respondents believe that violence against women is justifiable. In terms of religious affiliation, 18% identify as Catholic, 34% as Muslim, 17% as members of other Christian denominations, 6% as Buddhist, 20% as followers of other religions, and 6% report no religious affiliation. The sample is evenly balanced by gender, with 47% male. The average respondent is 42 years old and 57% is married, with an average of 1.7 children per household. Regarding education, 33% have completed primary education, 35% secondary education, and 31% tertiary. About 57% of the respondents are employed. In terms of income distribution, roughly one-quarter (25%) fall into the low-income category, 63% are classified as medium income, and 9% belong to the high-income group. Turning to religiosity and related beliefs, 74% of the respondents report believing in God, while 53% believe in life after death, 54% in Hell and 56% in Heaven. Approximately 62% of the respondents identify themselves as religious. Religious practices are also widespread: nearly 80% of respondents report praying to God and 74% attend religious services. We present a detailed explanation of the variable constructions and definitions in Appendix Table C1. We also include the total count of observations by countries in Appendix Table C2.

Table 1. Summary statistics

Variables	Description	Mean	SD	Min	Max
Outcome					
JustifiableVAW	Equals 1 if the respondent believes that VAW can be justified	0.276	0.447	0	1
Explanatory					
Catholic	Equals 1 if the respondent is identified as Catholic	0.179	0.383	0	1
VAW Index	VAW index constructed from VAW-related terms in speeches using the first four PCA components	0.057	0.193	0	1
Proximity	Proximity to Vatican in '000 km; values closer to 0 represent greater proximity (higher exposure)	-6.203	3.986	-18	-1
Other Violence Index	Index from other violence-related terms (first five PCA components)	0.062	0.029	0	1
Non-violence Index	Index from non-violence terms (first three PCA components)	0.866	0.164	0	1
Controls					
Atheist	Equals 1 if the respondent is identified as an Atheist	0.065	0.246	0	1
Protestant	Equals 1 if the respondent is identified as Protestant	0.069	0.254	0	1
Orthodox	Equals 1 if the respondent is identified as Orthodox	0.091	0.288	0	1
Muslim	Equals 1 if the respondent is identified as Muslim	0.336	0.472	0	1
Buddhist	Equals 1 if the respondent is identified as Buddhist	0.063	0.243	0	1
Other religion	Equals 1 if the respondent is identified as any other religion	0.197	0.398	0	1
Male	Equals 1 if the respondent is male	0.473	0.499	0	1
Age	Age in years	42.585	16.237	16	90
Age-squared	Age squared divided by 100	20.772	15.202	3	81
Married	Equals 1 if the respondent is married	0.569	0.495	0	1
No. of children	Number of children	1.724	1.537	0	5
Primary education	Equals 1 if the respondent has primary education	0.330	0.470	0	1
Secondary education	Equals 1 if the respondent has secondary education	0.354	0.478	0	1
Tertiary education	Equals 1 if the respondent has tertiary education	0.311	0.463	0	1
Employed	Equals 1 if the respondent is employed	0.573	0.495	0	1
Low income	Equals 1 if the respondent has low income	0.254	0.435	0	1
Medium income	Equals 1 if the respondent has medium income	0.633	0.482	0	1
High income	Equals 1 if the respondent has high income	0.093	0.290	0	1
Mechanisms					
God	Equals 1 if the respondent believes in God	0.737	0.440	0	1
Life after death	Equals 1 if the respondent believes in life after death	0.526	0.499	0	1
Hell	Equals 1 if the respondent believes in Hell	0.541	0.498	0	1
Heaven	Equals 1 if the respondent believes in Heaven	0.556	0.497	0	1
Religious	Equals 1 if the respondent is religious	0.617	0.486	0	1
Pray	Equals 1 if the respondent prays to God	0.795	0.404	0	1
Attend	Equals 1 if the respondent attends religious services	0.740	0.438	0	1
N	96,340				

Notes: A detailed description of all variables is presented in Appendix Table C1. The dataset comprises 96,340 observations across 64 countries, with country-level breakdowns reported in Appendix Table C2.

2.3 Google Trends

We use Google Trends data to examine public engagement with Pope Francis' speeches by tracking online search activity for VAW-related terms in the period following each speech. Google Trends has become a widely used instrument in social science research to measure collective attention and information seeking behaviour, including studies of public interest in VAW during major events such as the COVID-19 pandemic (Berniell & Facchini 2021). The platform provides a search interest index ranging from 0 to 100, where 100 represents the highest relative search volume for a given term within a specified time frame and region, and 0 indicates insufficient search activity.[11]

For our analysis, we compile daily global and weekly country-level search data for VAW-related keywords drawn from Pope's speeches, covering the period 2013–2022, consistent with our baseline sample.[12] We use a consistent set of Google search terms related to violence against women, including "violence", "violence women", "abuse" and "sexual abuse". These terms align with those used in our KWIC search analysis used to construct our VAW index. Their selection is based on both their relevance to the topic and their observed search frequency in Google Trends data. To ensure that search interest specifically reflects issues concerning women, we append the word "women" to general terms such as "violence" and "abuse". In contrast, for terms already explicitly associated with women, such as "sexual abuse", we omit the additional qualifier to avoid redundancy and preserve search precision. Analysing Google Trends data enables an assessment of whether the Pope's public statements were followed by measurable increases in online interest in VAW-related issues, thereby providing evidence on behavioural responses and the informational reach of his messages.

2.4 Media Coverage

We also use data from Dow Jones' Factiva database to examine whether media coverage of VAW-related topics increases after Pope's speeches. As a globally recognised religious and political figure, Pope Francis consistently attracted substantial media attention, providing a unique opportunity to study how his public statements shaped media narratives. The media play a central role in the dissemination of information and the formulation of public

[11] We collected data using the *gtrendsR* package.

[12] Daily country-level data are not available, as Google restricts access to high-frequency historical search data.

understanding of political, social, and moral issues (Beattie 2025). Consequently, media reporting on Pope's statements regarding VAW can serve as an important channel through which his messages influence public awareness, discourse, and attitudes.

To capture this, we measure the intensity of global news coverage related to VAW using Factiva data.[13] Following the same keyword approach as in Google Trends analysis, we conduct searches in the Factiva database using terms such as "Pope Francis and violence", "Pope Francis and abuse" and "Pope Francis and sexual abuse" for the same period 2013–2022. We include the phrase "Pope Francis" in all searches to ensure that the articles reference him directly. From each article, we extract publication dates and aggregate the number of articles that mention each keyword by date.

This process produces 3,473 articles that mention "Pope Francis and violence", 8,540 that mention "Pope Francis and abuse", and 3,910 that mention "Pope Francis and sexual abuse". Given that only two articles reference "Pope Francis and violence women", we exclude this term from the analysis. The resulting dataset includes both articles that directly report the Pope's speeches and those indirectly inspired by them, provided they reference the relevant keywords.

We analyse changes in the frequency of media articles containing VAW-related terms before and after the Pope's speeches, in order to assess whether his public interventions triggered increased attention to VAW in global news reporting.

3 Empirical Framework

We investigate the relationship between Pope Francis' speeches and the VAW justification by estimating the following specification.

$$\begin{aligned}\text{JustifiableVAW}_{ict} = {} & \alpha_1 \,\text{Catholic}_{ict} + \alpha_2 \,\text{VAW Index}_t + \alpha_3 \,\text{Proximity}_c \\ & + \alpha_4 \,\text{Catholic}_{ict} \times \text{VAW Index}_t + \alpha_5 \,\text{Catholic}_{ict} \times \text{Proximity}_c \\ & + \alpha_6 \,\text{VAW Index}_t \times \text{Proximity}_c + \alpha_7 \,\text{Catholic}_{ict} \times \text{VAW Index}_t \times \text{Proximity}_c \\ & + \rho X_{ict} + \delta_c + \gamma_t + \epsilon_{ict} \end{aligned} \tag{1}$$

[13] Dow Jones's Factiva aggregates content from over 33,000 global news and information sources, including newspapers, magazines, wire services, and online publications (Draca et al. 2023).

where $JustifiableVAW_{ict}$ denotes our main outcome variable that measures the beliefs of the individual i that VAW can be justified in the country c at time t. $Catholic_{ict}$ is a binary indicator equal to 1 if the respondent is identified as Catholic and 0 otherwise. $VAW\ Index_t$ represents the first four standardised principal components of variables derived from Pope's speeches in trigram terms related to violence against women. $Proximity_c$ is the geographical distance in km from the country c to the Vatican. The variable X_{ict} includes a vector of demographic and labour market controls, such as gender, marital status, age, education, number of children in the household, income, and employment. We also include a comprehensive set of religious denomination dummies in our specification including respondents who identify as Protestant, Orthodox, Muslim, Buddhist, and others, with Atheist as an omitted category. δ_c denotes country fixed effects that account for all time-invariant country-specific characteristics, such as geographic characteristics and culture. γ_t represents the survey year fixed effects, which account for time-specific shocks. In a more stringent specification, we replace survey year fixed effects with fixed effects for the exact interview date, allowing for a more precise control for unobserved, time-specific shocks. ϵ_{ict} is the error term that captures any other unobserved factors.

The parameter α_7 represents the coefficient of primary interest and captures the estimated association between exposure to Pope's speeches and attitudes toward the justification of VAW. Specifically, identification relies on three sources of variation: temporal (the timing and intensity of VAW-related speeches), individual (religious affiliation), and spatial (proximity to the Vatican). Together, these dimensions allow us to compare individuals who are plausibly more exposed to the Pope's messages with those who are less exposed. It is important to note that our estimates should be interpreted as intention-to-treat (ITT) effects, because we cannot directly observe whether individuals received the Pope's speeches. Hence, our analysis captures the average effect of plausible exposure to these messages on attitudes toward the justification of VAW. For ease of interpretation, Eq. (1) is estimated using a linear probability model. Robust standard errors are clustered at the country level.

Next, we examine whether Pope Francis' speeches generate increased public attention and engagement with VAW-related issues by using Google Trends and media coverage-related data. To do so, we employ an event study framework.

Our analysis proceeds in two stages. First, we explore global search activity by estimating

the following specification using daily Google Trends data on VAW-related terms, capturing how interest in these topics evolves before and after each speech.

$$GoogleVAW_t = \alpha + \sum_{l=2}^{7+} \beta_l^{lead} 1\{\text{lead}_t = l\} + \sum_{k=0}^{7+} \beta_k^{lag} 1\{\text{lag}_t = k\} + \gamma_t + \varepsilon_t \tag{2}$$

where $GoogleVAW_t$ denotes the search interest values for VAW-related online search terms on day t. We incorporate 7 leads and lags, with the seventh term including all days exceeding 7. The day before the event, i.e., the speech, is omitted and serves as a reference category. We include fixed effects for years (γ_t) and cluster the standard errors at the search week level. The coefficients β^{lag} reflect the dynamic influences of the speeches.

Second, we extend our analysis by examining whether the level of public engagement with VAW-related topics after Pope Francis' speeches differs between countries with varying degrees of Catholic presence. For this purpose, we draw on data from Barro & McCleary (2003), which provide country-level information on the share of the population that identifies as Catholic. Using these data, we create a binary indicator equal to 1 for countries with a Catholic majority, those where at least 50 percent of the population identify as Catholic, and 0 otherwise.[14]

We then implement an event study design similar to the global analysis, but with an interaction term between the timing of the Pope's speeches and the Catholic majority indicator. This approach enables us to assess whether countries with stronger Catholic representation exhibit distinct temporal patterns of online engagement relative to non-Catholic-majority countries. Specifically, we estimate the following specification.

$$\begin{aligned} GoogleVAW_{ct} = \alpha &+ \sum_{l=2}^{7+} \beta_l^{lead} \text{Catholic}_c \times 1\{\text{lead}_t = l\} + \sum_{k=0}^{7+} \beta_k^{lag} \text{Catholic}_c \times 1\{\text{lag}_t = k\} \\ &+ \delta_c + \gamma_t + \theta_c t + \lambda_c t^2 + \varepsilon_{ct} \end{aligned} \tag{3}$$

where most of the notation remains the same as in Eq. (2). The key distinction is the inclusion of the variable $Catholic_c$, which is equal to 1 for countries of Catholic majority, as defined above, and 0 otherwise. This variable interacts with a series of leads and lags around the dates of Pope's speeches on VAW, enabling us to capture the temporal dynamics of exposure across countries with differing degrees of Catholic representation.

[14]The dataset covers 249 countries and territories, of which 47 are classified as Catholic-majority.

Consistent with the previous specification, we include seven leads and lags, where the seventh term aggregates all periods beyond seven weeks before or after the speech date. The week immediately preceding each speech serves as the reference category. The specification further incorporates country and year fixed effects (δ_c and γ_t) to control for unobserved, time-invariant heterogeneity and global time shocks. In addition, we include country-specific linear and quadratic time trends ($\theta_c t$ and $\lambda_c t^2$) to account for gradual changes in policies or other contextual factors that could affect online search behaviour. Robust standard errors are clustered at the country level. As in Eq. (2), the coefficients β^{lag} represent the primary parameters of interest, capturing the dynamic association between Pope's speeches and changes in VAW-related search activity.

To examine whether media attention to VAW-related topics responds to Pope Francis' speeches, we employ an event study framework similar to that used in our Google Trends analysis. Specifically, we analyse whether coverage from all global sources that mention both Pope Francis' and VAW-related terms increases in the days following each speech. This approach allows us to identify changes in media focus and assess whether Pope's public statements acted as catalysts for increased reporting on violence against women.

4 Results

4.1 Influence of Pope's speeches on VAW attitudes

Table 2 examines the relationship between Pope's speeches and VAW, estimating Eq. (1). We present six specifications. Column (1) includes fixed effects for the country and year. Column (2) adds a comprehensive set of religious denomination dummies. In column (3) we further refine the specification by controlling for demographic variables, followed by the introduction of labour market controls in column (4). Column (5) includes fixed effects for interview days, and column (6) controls for country-specific linear time trends. The estimated coefficients remain fairly stable in all specifications. Our results indicate that Catholics who reside closer to the Vatican and who are exposed to Pope's speeches are approximately 2.2% less likely to justify VAW.[15]

[15]The size of the estimated effect is comparable to those found for political leadership (Anukriti et al. 2022, Bochenkova et al. 2023), information campaigns (Colagrossi et al. 2023), and persuasive speeches (Bassi & Rasul 2017, Deiana et al. 2023) on outcomes such as domestic violence reporting and long-term

We also present detailed results in Appendix Table D1. Importantly, the estimated coefficients are consistent with our theoretical expectations regarding how exposure to Pope's speeches operates on religious and spatial dimensions. The negative and statistically significant coefficient on the *Catholic* × *Index VAW* interaction indicates that the influence of Pope's speeches is indeed more pronounced among Catholic individuals, particularly when the intensity of VAW-related messages is higher. Similarly, the negative and significant coefficient for the *Index VAW* × *Proximity* interaction suggests that the effect of exposure intensifies in countries geographically closer to the Vatican, where dissemination through religious networks and media coverage is likely greater. In particular, the triple interaction term (*Catholic* × *Index VAW* × *Proximity*) is negative and significant in all specifications, confirming that combined exposure through religious identity, message intensity, and spatial proximity amplifies the effect of Pope's speeches.

Overall, our results show that Pope Francis' speeches on VAW lead to a meaningful reduction in its justification, particularly among Catholic individuals, and the influence is even stronger for Catholics who reside closer to the Vatican.

fertility beliefs.

Table 2. Influence of Pope's speeches on VAW attitude

	(1)	(2)	(3)	(4)	(5)	(6)
Catholic × Index VAW × Proximity	-0.024***	-0.024***	-0.024***	-0.024***	-0.022***	-0.022***
	(0.006)	(0.007)	(0.007)	(0.007)	(0.007)	(0.006)
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Religion denomination dummies		Yes	Yes	Yes	Yes	Yes
Demographic controls			Yes	Yes	Yes	Yes
Labour market controls				Yes	Yes	Yes
Interview day FEs					Yes	Yes
Country-specific linear trends						Yes
R^2	0.088	0.089	0.098	0.098	0.121	0.122
Mean Dep. Variable	0.276	0.276	0.276	0.276	0.276	0.276
No. of countries (clusters)	64	64	64	64	64	64
No. of years	8	8	8	8	8	8
N	96,340	96,340	96,340	96,340	96,340	96,340

Notes: OLS regressions. Each column shows a different specification. Outcome variable is *JustifiableVAW* which is the beliefs of individuals that VAW can be justified. *Catholic* is a binary indicator equal to 1 if the respondent is identified as Catholic and 0 otherwise. *VAW Index* represents the first four standardized principal components of variables derived from Pope's speeches in trigram terms related to violence against women. *Proximity* refers to the geographical distance of countries relative to the Vatican. The demographic controls include gender, marital status, number of children, age, and education. Labour market controls include income and employment. Religious denomination dummies include Atheist (omitted category), Protestant, Orthodox, Muslim, Buddhist and others. Results use nationally-representative WVS sampling weights. Standard errors, which are specified in parentheses, are clustered at the country level. ***, ** and * indicate statistical significance level at 1%, 5% and 10%.

4.2 Mechanisms

4.2.1 Salience of religious values

Our baseline results indicate that people exposed to Pope's speeches are less likely to justify VAW. One possible mechanism is that speeches increase the importance of religious values, thus reinforcing moral norms that discourage violence.[16] This mechanism could be particularly relevant if the Pope explicitly framed VAW as incompatible with religious teachings. By linking acts of violence to violations of moral or spiritual principles, his

[16]Prior research documents a consistent negative association between religiosity and violent or antisocial behaviour. Individuals with stronger religious beliefs are generally less likely to engage in criminal activity or associate with delinquent peers (Baier & Wright 2001, Hoeben & Weerman 2016). Religiosity has also been shown to shape moral values and gender-related attitudes (Campante & Yanagizawa-Drott 2015, Davis 2024), foster interfaith tolerance and support for women's rights (Kremer et al. 2008), and improve psychological well-being (Campante & Yanagizawa-Drott 2015, Fruehwirth et al. 2019). Of particular relevance, Johnston et al. (2025) find that Pope Francis' 2015 visit to Philadelphia led to a measurable decline in crime and drug offences.

speeches may have heightened the perceived moral stakes of such behavior. In our context, exposure to the Pope's speeches could strengthen the salience of religious norms, prompting individuals to internalise these values and subsequently reduce VAW justification.

Table 3 explores this potential channel by examining the association between exposure to Pope's speeches and measures of religiosity. Using the detailed information available in the WVS, we construct binary indicators to measure whether respondents affirm belief in God, Heaven, Hell, and life after death, as well as self-reported religiosity, frequency of prayer, and church attendance. This allows us to assess whether exposure to speeches is related to shifts in religious beliefs and practices that could underlie changes in attitudes toward VAW. Our results suggest a positive and significant association, indicating that exposure to Pope's speeches on VAW may have enhanced the salience of religious values, which in turn could reinforce moral norms that discourage VAW.[17]

Table 3 Influence of Pope's speeches on religious values

	(1) Believe in God	(2) Believe in Hell	(3) Believe in Heaven	(4) After death believe	(5) Self reported religiosity	(6) Pray	(7) Attend
Catholic × Index VAW × Proximity	0.041***	0.016**	0.036**	0.043***	0.053***	0.026***	0.011*
	(0.008)	(0.007)	(0.016)	(0.009)	(0.009)	(0.006)	(0.006)
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Religion denomination dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labour market controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interview day FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-specific linear trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.684	0.496	0.573	0.463	0.561	0.724	0.548
Mean Dep. Variable	0.737	0.541	0.556	0.526	0.617	0.795	0.740
No. of countries (clusters)	64	64	64	64	64	64	64
No. of years	8	8	8	8	8	8	8
N	96,340	96,340	96,340	96,340	96,340	96,340	96,340

Notes: OLS regressions. Each column shows the estimates with different outcome variables. Outcome variables specified in columns (1-7) are binary indicators, equals 1 if the respondent: believes in God (column (1)), believes in Hell (column (2)), believes in Heaven (column (3)), believes in life after death (column (4)), identifies as religious (column (5)), prays to God (column (6)) and attends religious services (column (7)). *Catholic* is a binary indicator equal to 1 if the respondent is identified as Catholic and 0 otherwise. *VAW Index* represents the first four standardized principal components of variables derived from Pope's speeches in trigram terms related to violence against women. *Proximity* refers to the geographical distance of countries relative to the Vatican. The demographic controls include gender, marital status, number of children, age, and education. Labour market controls include income and employment. Religious denomination dummies include Atheist (omitted category), Protestant, Orthodox, Muslim, Buddhist and others. Results use nationally-representative WVS sampling weights. Standard errors, which are specified in parentheses, are clustered at the country level. ***, ** and * indicate statistical significance level at 1%, 5% and 10%.

We also conduct a detailed examination of Pope Francis' speeches on VAW to determine

[17]We additionally explore the differences in exposure to Pope's speeches on salience of religious beliefs and practices by gender. Appendix Table E1 shows that the effects are more prominent among women than among men, in line with the findings of the studies that women, on average, tend to be more religious than men (Trzebiatowska & Bruce 2012), and therefore more susceptible to the Pope's speeches.

whether he explicitly framed such violence as inconsistent with religious teachings. Our findings confirm that he frequently addressed VAW in the context of Catholic moral ethics and religious principles. In the following, we present selected examples from his speeches that illustrate this framing.

> "—— The physical, economic, sexual and psychological exploitation of men and women, boys and girls, currently holds tens of millions in inhumane and humiliating bondage. Every human being —man, woman, boy and girl — is the image of God ——", *Casina Pio IV, 2 December 2014*.
>
> "—— I also encourage you to continue your pastoral work, paying particular attention to the situation of women: promoting women's role in society and fighting against abuse and violence toward women is also a way of proclaiming the Gospel of Jesus Christ, who chose to be born of a women, the Virgin Mary ——", *Paul VI Audience Hall, 7 May 2015*.
>
> "—— Acts of violence and exploitation directed at women are not merely wrong; they are crimes that destroy the harmony, the poetry and beauty that God wished to bestow on the world ——", *Regia Hall, 9 January 2020*.
>
> "—— Every form of violence inflicted upon a woman is a blasphemy against God ——", *Regia Hall, 9 January 2020*.

Furthermore, we examine whether Pope Francis' speeches on general, non-gendered violence influence religiosity. The results, reported in Appendix Table D7, indicate that there is no significant relationship between exposure to these speeches and measures of religiosity. This suggests that the observed effects on attitudes toward VAW are not simply driven by a general increase in religious engagement but are specific to the content of speeches addressing violence against women.

4.2.2 Interest and engagement in VAW following the Pope's speeches

Another possible mechanism underlying our baseline results is that exposure to Pope's speeches may have increased the interest and engagement of individuals with the VAW issue. Increased attention to the topic could have encouraged the individuals to seek information, reflect on the issue, and ultimately become less likely to justify such violence.

We examine this mechanism by analysing Google Trends search data on VAW-related topics at both the daily global and weekly country levels. The analysis is divided into these two temporal dimensions for several reasons. First, Google restricts access to daily search data at the country level over extended periods, making global data the most granular option available for high-frequency analysis. Second, examining global search activity enables us to capture broad, worldwide patterns of public engagement and information seeking behaviour after the Pope's speeches. Third, the use of daily global data allows us to construct precise event-time variables, aligning search activity relative to the exact date of each speech. Finally, weekly country-level data allow us to assess whether effects differ between countries with Catholic and non-Catholic majorities, given our initial assumption that Pope speeches are more likely to influence populations with stronger Catholic representation and cultural ties to the Church (Deiana et al. 2023). In both analyses, we maintain the same Google search terms associated with VAW topics such as "violence", "violence women", "abuse", and "sexual abuse".[18]

Figure 2 presents the estimation results of Eq. (2). We find a short-term increase in online search activity related to VAW topics, particularly within the first one to three days following the Pope's speeches. Interestingly, this effect also emerges when we use broader search terms such as 'violence' or 'abuse', which are not explicitly gender specific. In these cases, however, we detect some evidence of pre-existing trends in search interest prior to the speeches. This is not entirely unexpected, given that these general terms may capture searches related to other forms of violence.

By contrast, when we explicitly look at VAW-related terms, we observe no significant pre-trends and a clear, post-speech increase in search interest. This pattern strengthens our interpretation that Pope Francis' speeches were followed by heightened public engagement and awareness specifically concerning violence against women, rather than a broader interest in general violence topics.

Furthermore, we investigate whether countries with a Catholic majority exhibit similar

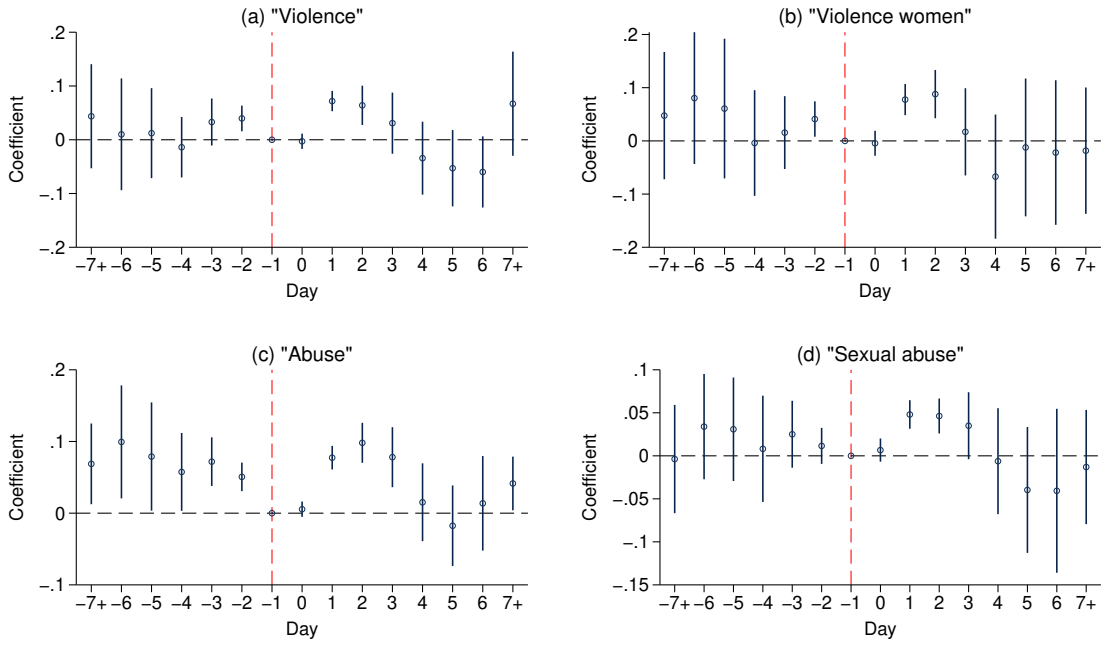
[18]Following Jetter & Molina (2022), we also examine the related queries feature in Google Trends to identify the most frequent searches associated with each of our primary VAW-related terms. The related queries metric reports other search terms entered by users within the same time frame and assigns each a relative popularity score based on search frequency. Appendix Figure F1 presents the top ten related Google search queries between January 1, 2013, and December 31, 2022. The results indicate that the searches most frequently associated largely mirror our main set of VAW-related keywords, confirming the consistency and relevance of our chosen terms.

patterns of online engagement by estimating Eq. (3). The results, presented in Figure 3, reveal a comparable increase in search interest for VAW-related topics after the Pope's speeches. In particular, we observe a statistically significant increase in search activity for the term "violence women" lasting approximately one to two weeks after a speech. However, we do not find significant effects for search terms related to "abuse." Overall, these findings suggest that online engagement with VAW topics tends to increase in predominantly Catholic countries after the Pope's public interventions, although the intensity and persistence of this response vary by specific keywords.

We also perform a supplementary analysis for search terms such as "trafficking", "trafficking women", "sexual", and "abuse women".[19] The results, presented in Appendix Figure F2, reveal a similar short-term spike in search interest following Pope's speeches, strengthening our earlier findings based on our set of baseline terms. In a further robustness check, we examine widely recognised VAW-related terms frequently used in the academic and policy literature, namely "violence against women", "intimate partner violence", "gender-based violence", and "sexual assault". As shown in Appendix Figure F3, these results also indicate a pronounced short-term increase in online search activity in the days immediately following speeches. Collectively, these findings consistently point to heightened public attention and engagement with issues related to violence against women in response to Pope Francis' public addresses.

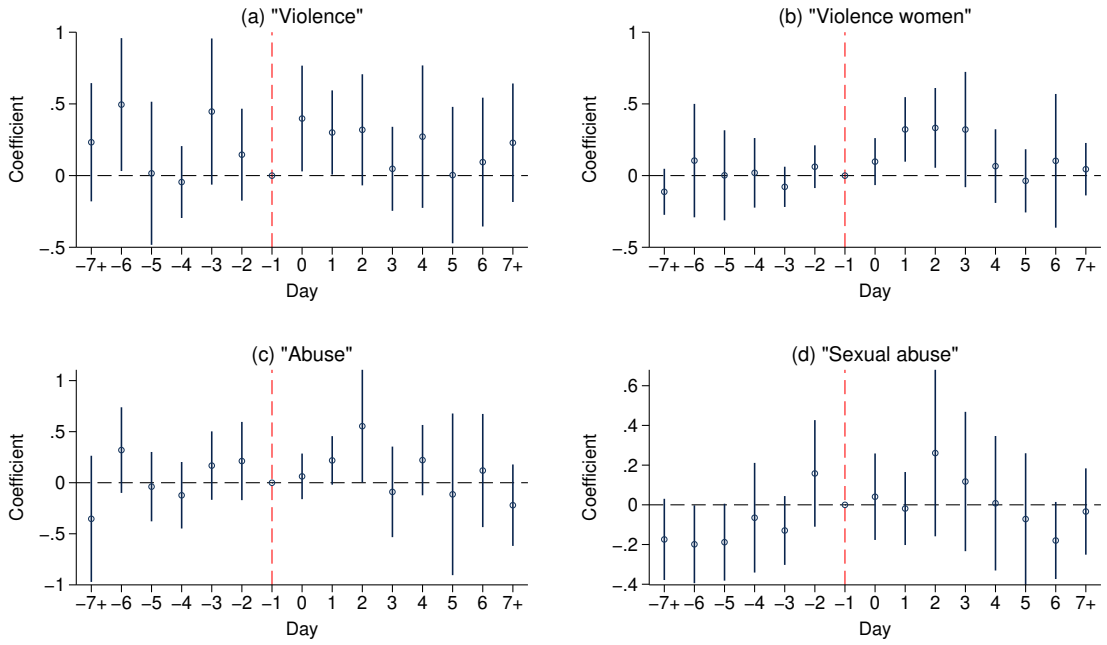
[19]These are the same terms used in KWIC for the construction of the VAW index.

Figure 2. Event study plot on daily global online search interest on VAW-related terms using Google Trends



Notes: This figure plots the coefficients of the lead (β_l^{lead}) and lag (β_k^{lag}) terms of the event study Eq. (2), with the outcome variable being the natural logarithm of VAW-related search terms. Coefficients are shown as point estimates with 95% confidence intervals. The specification includes year and week fixed effects, and time intervals beyond seven days before or after the speech are aggregated into a single '7+' category. Standard errors are clustered at the search-week level. The omitted reference category is the day immediately preceding the speech, indicated by the vertical red dashed line at t=-1. The dataset comprises 3,652 observations spanning January 1, 2013, to December 31, 2022. Detailed point estimates for all coefficients are provided in Appendix Table F1.

Figure 3. Event study plot on weekly online search interest on VAW-related terms for Catholic-majority countries using Google Trends



Notes: This figure plots the coefficients of the interaction terms on lead ($\beta_l^{lead} \times \text{Catholic}_c$) and lag ($\beta_k^{lag} \times \text{Catholic}_c$) terms of the event study Eq. (3), with the outcome variable being the natural logarithm of VAW-related search terms. Coefficients are shown as point estimates with 95% confidence intervals. The specification includes year, country fixed effects and country-specific time trend, and time intervals beyond seven days before or after the speech are aggregated into a single '7+' category. Standard errors are clustered at the search-week level. The omitted reference category is the day immediately preceding the speech, indicated by the vertical red dashed line at t=-1. The dataset comprises 130,227 observations from 2013 to 2022, with 249 locations including countries and territories. Detailed point estimates for all coefficients are provided in Appendix Table F2.

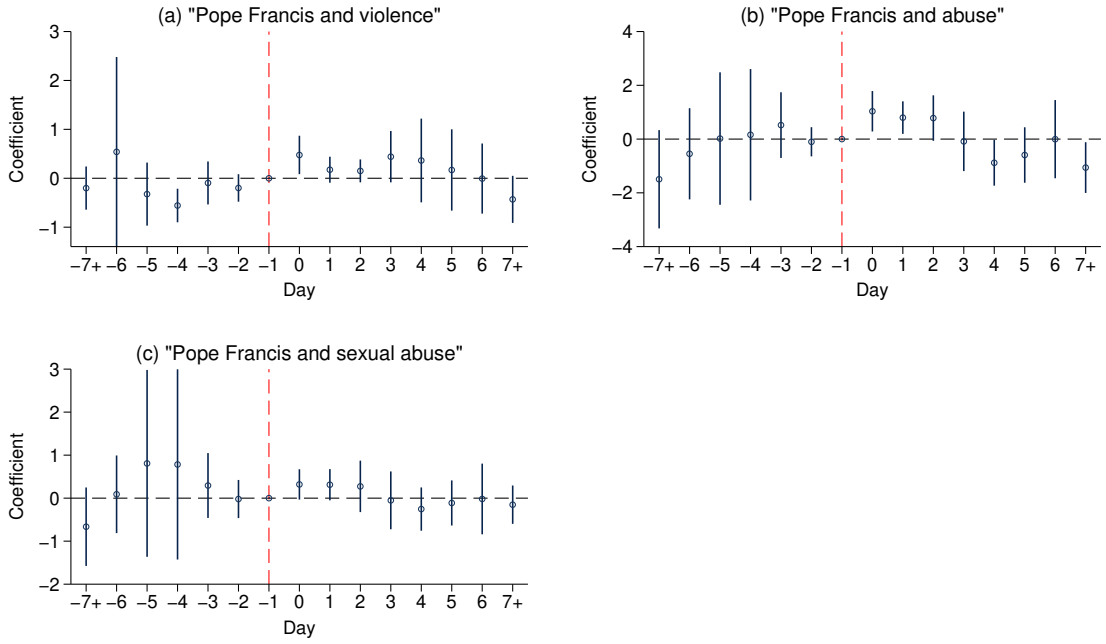
4.2.3 VAW-related media coverage

Next, we turn to the analysis of media coverage on VAW-related topics to examine whether Pope Francis' speeches also influenced public discourse through news reporting. Figure 4 presents the results estimating Eq.(2).[20] We find evidence of a short-term increase in the coverage of English-language media that contains VAW-related terms after Pope's speeches. This pattern suggests that Pope's public statements on violence against women not only captured public attention but also stimulated media engagement with the issue, amplifying

[20]We additionally examine articles referencing "Pope Francis and trafficking", "Pope Francis and sexual", "Pope Francis and VAW", and "Pope Francis and sexual assault". The results of the corresponding event studies are reported in Appendix Table F3. Articles that rarely appeared in the dataset, such as those that mentioned 'Pope Francis and violence women" (2 articles), "Pope Francis and abuse women" (1 article), and "Pope Francis and GBV" (4 articles), are excluded from the analysis due to insufficient observations.

the reach and impact of his messages through news dissemination.

Figure 4. Event study plot of media coverage of VAW-related terms using Dow Jones' Factiva database



Notes: This figure plots the coefficients of the lead (β_l^{lead}) and lag (β_k^{lag}) terms of the event study Eq. (2). The outcome variables are "Pope Francis and VAW terms". The lead and lag terms are provided as point estimates along with the confidence intervals 95%. The estimates are with year and week fixed effects. Time intervals extending beyond 7 days from the speech day are represented by a single '7+' indicator. Standard errors are clustered at search week level. The omitted base category corresponds to the day before the speech, represented by the vertical red dashed line at t=-1. The detailed coefficient point estimates are provided in Appendix Table F3.

4.3 Do Pope's VAW-related speeches influence other moral and ethical values?

We also investigate whether Pope Francis' speeches on VAW may influence people's beliefs on a broader set of moral and ethical values. We hypothesise that these speeches could have effects beyond attitudes toward VAW because of their religious framing. For example, by condemning violence against women, the Pope often situates VAW within a wider moral and ethical framing. Furthermore, by denouncing violence while simultaneously promoting respect for human dignity, speeches can reinforce fundamental moral principles that affect other behaviours related to VAW and social responsibility.

To examine this, we use a set of questions from the WVS that measure the perceived justifiability of various moral behaviours. Specifically, we analyse responses regarding the

justifiability of prostitution, abortion, suicide, divorce, claiming government benefits to which one is not entitled, and evading public transport fares.

The results presented in Table 4 are consistent with our hypothesis. Individuals plausibly more exposed to the Pope's speeches are approximately 2% less likely to justify prostitution. However, we do not find a significant association between exposure to Pope's speeches and ethical beliefs unrelated to VAW. This pattern suggests that Pope Francis' speeches may have influenced attitudes closely related to VAW, while showing no discernible spillover effects on attitudes unrelated to VAW.

In the following, we present selected examples from his speeches that illustrate the way Pope Francis used to frame these topics[21].

> "—— I therefore urge the international community to devise a more united and effective strategy against human trafficking ——", *Clementine Hall, 12 December 2013*.
>
> "—— Many young women are victims of trafficking who end up on the streets of our cities, it is because many men here — young, middle-aged, elderly — demand these services and are willing to pay for their pleasure ——", *Clementine Hall, 12 February 2018*.
>
> "—— Women are deceived and exploited to do prostitution in our cities. ——", *10 September 2019*.

[21] We provide examples of some of the excerpts from Pope's speeches on prostitution and trafficking in Appendix B.

Table 4 Influence of Pope's speeches on other moral and ethical values

	(1) Justifiable-prostitution	(2) Justifiable-abortion	(3) Justifiable-suicide	(4) Justifiable-divorce	(5) Justifiable-claiming government benefits not entitled	(6) Justifiable-cheating public transport fare
Catholic × Index VAW × Proximity	-0.021***	-0.025*	-0.009	0.001	0.000	-0.003
	(0.005)	(0.013)	(0.005)	(0.004)	(0.009)	(0.006)
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Religion denomination dummies	Yes	Yes	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes
Labour market controls	Yes	Yes	Yes	Yes	Yes	Yes
Interview day FEs	Yes	Yes	Yes	Yes	Yes	Yes
Country-specific linear trends	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.260	0.204	0.164	0.189	0.148	0.184
Mean Dep. Variable	0.276	0.276	0.276	0.276	0.276	0.276
No. of countries (clusters)	64	64	64	64	64	64
No. of years	8	8	8	8	8	8
N	96,340	96,340	96,340	96,340	96,340	96,340

Notes: OLS regressions. Each column shows the estimates with different outcome variables. Outcome variables specified in columns (1-6) are binary indicators, equals 1 if the respondent: believes that prostitution can be justified (column (1)), believes that abortion can be justified (column (2)), believes that suicide can be justified (column (3)), believes that divorce can be justified (column (4)), believes that claiming government benefits which are not entitled can be justified (column (5)), believes that avoiding a fare on public transport can be justified (column (6)). *Catholic* is a binary indicator equal to 1 if the respondent is identified as Catholic and 0 otherwise. *VAW Index* represents the first four standardized principal components of variables derived from Pope's speeches in trigram terms related to violence against women. *Proximity* refers to the geographical distance of countries relative to the Vatican. The description of outcome variables are provided in Appendix Appendix B3. The demographic controls include — gender, marital status, number of children, age, age-squared, primary education (omitted category), secondary education and tertiary education. Labour market controls include — low income (omitted category), medium income, high income and employment. Religious denomination dummies include — Atheist (omitted category), Protestant, Orthodox, Muslim, Buddhist and others. Standard errors, which are specified in parentheses, are clustered at the country level. ****, ** and * indicate statistical significance level at 1%, 5% and 10%. All observations are weighted using nationally representative weights.

4.4 Do Pope's VAW-related speeches influence gender norms and other violence attitudes?

Pope Francis' speeches, given the framing and context he used to condemn VAW, may have also influenced public beliefs about gender norms, as well as broader attitudes toward violence. To investigate this, we re-estimate Eq. (1), examining attitudes towards gender norms and non-gender-specific forms of violence.

Following previous research (Alesina et al. 2013, Davis et al. 2024), we measure attitudes toward gender norms based on individuals' agreement with the following six statements: (i) men make better political leaders than women, (ii) men make better business executives than women, (iii) it is almost certain to cause a problem if a woman earns more money than her husband, (iv) when jobs are scarce, men should have more right to a job than women, (v) women have the same right as men in democracy, and (vi) university is more important for a boy than for a girl. Respondents are classified according to whether they agree or disagree with each statement. We also focus on forms of violence that are not gender-specific, including: (i) political violence is justifiable, (ii) violence against other people is justifiable, and (iii) it is justifiable for parents to beat their children.

Table 5 Influence of Pope's speeches on gender norms and other violence attitudes

	(1) Men-better political leaders	(2) Men-better business executives	(3) Woman earning more is a problem	(4) Men have more right to a job	(5) Women have same right in democracy	(6) University is more for men	(7) Justifiable political violence	(8) Justifiable violence against others	(9) Justifiable beating children
Panel A									
Catholic × Index VAW × Proximity	-0.006	-0.006	0.012**	-0.005	-0.012***	0.007	-0.021***	-0.034***	-0.009
	(0.016)	(0.015)	(0.006)	(0.007)	(0.003)	(0.005)	(0.007)	(0.006)	(0.008)
Panel B									
Catholic × Non-VAW Index × Proximity	0.207	-0.007	0.097	0.221	-0.085	-0.060	-0.173	0.035	0.095
	(0.193)	(0.133)	(0.067)	(0.161)	(0.145)	(0.154)	(0.222)	(0.250)	(0.122)
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Religion denomination dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labour market controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interview day FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-specific linear trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.182	0.186	0.153	0.255	0.103	0.138	0.140	0.109	0.153
Mean Dep. Variable	0.436	0.380	0.351	0.426	0.520	0.749	0.266	0.318	0.484
No. of countries (clusters)	64	64	64	64	64	64	64	64	64
No. of years	8	8	8	8	8	8	8	8	8
N	96,340	96,340	96,340	96,340	96,340	96,340	96,340	96,340	96,340

Notes: OLS regressions. Each column shows the estimates with different outcome variables. Outcome variables specified in columns (1-9) are binary indicators, equals 1 if the respondent: agrees that men make better political leaders than women (column (1)), agrees that men make better business executives than women (column (2)), agrees that it is almost certain to cause a problem if a woman earns more money than her husband (column (3)), agrees that when jobs are scare, men should have more right to a job than women (column (4)), agrees that women have the same right as men in democracy (column (5)), agrees that university is more important for a boy than for a girl (column (6)), believes that political violence can be justified (column (7)), believs that violence against other people can be justified (column (8)), and believes that parents beating their children can be justified (column (9)). *Catholic* is a binary indicator equal to 1 if the respondent is identified as Catholic and 0 otherwise. *VAW Index* represents the first four standardized principal components of variables derived from Pope's speeches in trigram terms related to violence against women. *Other Violence Index* represents the first five standardized principal components of variables derived from Pope's speeches in trigram terms related to other violence. *Proximity* refers to the geographical distance of countries relative to the Vatican. The description of outcome variables are provided in Appendix Table C1. The demographic controls include — gender, marital status, number of children, age, age-squared, primary education (omitted category), secondary education and tertiary education. Labour market controls include — low income (omitted category), medium income, high income and employment. Religious denomination dummies include — Atheist (omitted category), Protestant, Orthodox, Muslim, Buddhist and others. Standard errors, which are specified in parentheses, are clustered at the country level. ****, ** and * indicate statistical significance level at 1%, 5% and 10%. All observations are weighted using nationally representative weights.

Table 5 presents the results. For gender norms, exposure to Pope's speeches is associated with a higher likelihood of perceiving women earning more than men as a problem and a lower likelihood of supporting equal democratic rights for women. However, we do not find a statistically significant effect on other gender-related outcomes. These findings suggest that Pope Francis' speeches on VAW may have some influence on gender attitudes, but the effects on broader gender norms appear limited.

For other forms of violence not specific to gender, we find a negative association with attitudes toward political and general violence, indicating that exposure to speeches may reduce the acceptance of violence more generally. This may reflect the broader moral framing in the speeches, which emphasises human dignity, ethical behaviour, and respect for others, leading listeners to generalise these principles beyond gender-specific issues.

In general, these findings suggest that Pope Francis' speeches on VAW help to discourage the acceptance of violence more broadly, extending beyond gender-specific forms. Their impact on gender norms is relatively limited, probably because religious teachings frame violence, including VAW, explicitly as a moral transgression, whereas traditional gender roles are less directly addressed. Although speeches influence attitudes toward general violence to some extent, their effect is strongest when moral or ethical principles are clearly linked to condemned behaviour.

4.5 Salience and quasi-random timing of the Pope's Speeches

A key identifying assumption in our analysis is that Pope Francis' speeches are both *highly salient* to the global public and *plausibly quasi-random* in their timing with respect to attitudes toward VAW.

First, we argue that the salience of the speeches stems from Pope Francis' moral authority and extensive communication reach. As the head of the Catholic Church and one of the most influential religious figures globally, his public messages attracted considerable attention across countries, faiths, and media platforms. The content of his speeches, often emphasising human dignity, peace, and compassion, positioned VAW not only as a social problem but also as a moral transgression. This framing may have enhanced the emotional and ethical resonance of his messages, giving them the potential to influence social norms and beliefs. Indeed, our event-study analysis (see Figures 2, 3 and 4) shows that the days after a speech

are characterized by sharp increases in online search interest and media coverage of VAW-related topics. These patterns demonstrate that the speeches successfully elevated public attention, triggering engagement and information-seeking behaviour.

Second, the timing of the Pope's speeches can be regarded as *plausibly quasi-random* with respect to temporal changes in attitudes toward VAW. Papal addresses tend to follow the Vatican's liturgical and pastoral calendar, often tied to religious observances rather than to contemporaneous developments in any particular country. The topics addressed usually reflect long-term Church priorities rather than reactive responses to specific social events. Consequently, the occurrence and timing of speeches addressing VAW are unlikely to systematically coincide with unobserved shifts in social attitudes or country-level changes in the treatment of women. Supporting this interpretation, our event study results show an increase in online search activity and media coverage immediately after a speech, indicating that the Pope's interventions generated attention rather than being triggered by external events related to VAW. Moreover, a series of placebo tests, where we randomly altered the speech dates (Appendix Table D6) or held the VAW Index constant while using outcomes unrelated to the speeches (Appendix Table D5 and D8), show no significant effects. Together, these findings reinforce the view that the timing of speeches can be considered *plausibly quasi-random* to broader social dynamics surrounding VAW, lending credibility to our identification strategy.

4.6 Heterogeneous effects

We explore the heterogeneous effects of Pope Francis' speeches on attitudes towards VAW in different subgroups of the population in Appendix E.

Appendix Table E2 presents results by various demographic characteristics. Columns (1)–(2) examine gender differences, showing that the estimated effects are primarily driven by women. In particular, exposure to Pope's speeches is strongly and significantly associated with a reduction in women's beliefs that VAW can be justified. We also investigate heterogeneity by marital status (columns (3)–(4)), education level (columns (5)-(6)) and age group (columns (7)–(10)). Significant effects are observed among single individuals, suggesting that attitudes toward marital relationships may be more malleable in this group compared to married individuals, whose relationship habits and social norms are more established. Furthermore,

the association between exposure to Pope's speeches and reduced justification of VAW is significant among individuals with lower educational attainment, which may reflect both increased receptivity to religious messages and a higher baseline prevalence of attitudes that justify VAW within this subgroup. The results are more pronounced among younger and older people.

4.7 Robustness Checks

4.7.1 Alternative specification and definitions

We perform a series of robustness tests and present these results in an extensive supplementary appendix. First, we test the robustness of our findings by redefining the main outcome variable using alternative cut-off values for binary classification. In the baseline specification, Justifiable VAW is coded as 1 if the respondent selects any value from 2 to 10, indicating some level of justification, and 0 if the response is "Never justifiable," reflecting complete rejection of such behaviour. To verify the stability of our results, we re-estimate the model using progressively higher cut-off points (e.g., 3, 4, and above) to define the binary indicator. The results, presented in Appendix Table D2, show that the estimated effect remains statistically significant at lower cut-off thresholds but gradually decreases as the threshold increases, aligning with the intuition that stronger forms of justification are less influenced by the Pope's speeches.

We also estimate an ordered probit model to account for the potential non-linear relationship between the dependent and explanatory variables. The results, shown in column (2) of Appendix Table D3, are consistent with those obtained from the linear probability model in column (1). Our baseline specification relies on a VAW Index constructed from the first four principal components of VAW-related trigrams in Pope's speeches. To test the robustness of of our results, we generate two alternative indices, the VAW Index2 (based on the first two components) and the VAW Index6 (based on the first six components). The results presented in columns (3) and (4) closely mirror those of the baseline model, reinforcing the reliability of our findings.

Lastly, we further refine our exposure measure by incorporating the regional locations of the respondents from the WVS dataset.[22] In this specification, we include both the distance

[22]WVS provides regional identifiers for survey respondents.

from the Vatican and the regional proximity to the locations of the Pope's speech. As shown in column (5), the estimated effects remain stable, confirming the robustness of our results to alternative exposure definitions.

4.7.2 Sensitivity to specific exclusion

We perform leave-one-religion-out, leave-one-country-out, and leave-one-year-out analyses to verify that our findings are not driven by any specific religion, country, or year. Specifically, we conduct the analysis by sequentially excluding one category at a time, focusing on religion, country, and year in succession. The results, shown in Appendix Figure D1, indicate that the estimated coefficients remain negative, statistically significant, and closely aligned with the baseline estimates in all specifications.

4.7.3 Additional controls and sample restriction

We examine the robustness of the results to a considerably more stringent specification whereby we draw comparisons amongst individuals sharing an ethnicity by controlling for ethnicity dummies available in the WVS. The results shown in column (2) of Appendix Table D4 align with those of the baseline model in column (1). Our speech corpus includes translations via Google cloud services, and this may affect our estimates if something was incorrectly translated. In column (3), we exclude all the translated speeches. The estimated coefficients remain largely unchanged. Furthermore, to address the concern that geographical proximity to the Vatican may not be relevant when Pope's messages can be disseminated through various communication channels, we conduct a robustness check by distinguishing between speeches delivered within the Vatican and those delivered elsewhere. We then re-estimate the baseline model, omitting all speeches delivered within the Vatican in column (4). The results remain similar.

Next, a potential confounder in our study would be the influence of the global #MeToo movement. It is difficult to identify the dates of women's movements or #MeToo events specific to each country due to the lack of verified sources. We take an alternative approach by controlling for Anglophone-country dummy, assigning a value of 1 to countries such as the United States, Australia, New Zealand and Canada, where the #MeToo movement has been highly visible and social media engagements are significant.[23] The results reported in

[23]An analysis of #MeToo presence on Twitter from October 2017 to December 2019 by UN women shows

column (5) remain robust and statistically significant, suggesting that the movement does not seem to confound the results. Columns (6) - (7) control for country-specific quadratic and cubic trends to account for any non-linear trends within each country. The estimates remain robust.

Finally, we also assess robustness to region×year fixed effects to address concerns about confounding due to global secular trends. Following the World Bank classification, we group countries into seven regions namely East Asia and Pacific; Europe and Central Asia; Latin America and the Caribbean; Middle East, North Africa, Afghanistan and Pakistan; North America; South Asia; and Sub-Saharan Africa. We then re-estimate the baseline specification, with results reported in column (8) of Appendix Table D4. The findings remain robust.

4.7.4 Placebo checks

We conduct a series of placebo tests to ensure that our results are not driven by spurious correlations. Specifically, we re-estimate our baseline specification using outcomes that are unlikely to be affected by the Pope's speeches on VAW. As placebo outcomes, we use all nine items from the WVS Democracy module, which ask respondents to evaluate the importance of various characteristics deemed essential to democracy. These variables serve as suitable placebos for two reasons. First, they are conceptually unrelated to Pope's VAW-focused messages. Second, using the full set of variables within the module helps mitigate concerns about selective reporting. For each item, we create a binary indicator equal to 1 if the respondent considers the characteristic essential to democracy, and 0 otherwise.

We re-estimate our baseline specification using nine placebo outcomes from the WVS Democracy module, and the results are presented in Appendix Table D5. The outcomes include: (i) support for taxing the rich and subsidizing the poor; (ii) belief that religious authorities should interpret laws; (iii) support for free elections; (iv) belief that the unemployed should receive state aid; (v) acceptance of military intervention when the government is incompetent; (vi) support for civil rights protecting individuals from state oppression; (vii) belief that the state should equalize incomes; (viii) belief that citizens should obey their rulers; and (ix) belief that it is important to live in a democratically governed country.

significant media engagements by Anglophone countries particularly the US, UK, Australia and Canada; see https://www.unwomen.org/en/digital-library/publications/2020/08/brief-metoo-headlines-from-a-global-movement.

Across all placebo outcomes, the estimated coefficients are statistically insignificant and close to zero, confirming that the effects identified in our main analysis are specific to attitudes toward VAW rather than reflecting a broader shift in unrelated political or social attitudes. We also run regressions with other outcomes unrelated to the speeches, and the results, presented in Appendix Table D8, remain null.

We also investigate the validity of our main explanatory variable, the VAW Index. To ensure that the observed association between this VAW index and attitudes toward VAW is not driven by random variation, we perform a placebo test by randomly assigning index values to treated units. The results, presented in columns (1) to (5) of Appendix Table D6, do not show statistically significant effects, while all coefficients are close to zero. This confirms that our main findings are not due to chance. Furthermore, we test whether exposure to Pope's speeches on other forms of non-gendered violence influences individuals' beliefs about the justifiability of VAW. As shown in column (6), the estimated coefficients are negative but statistically insignificant, reinforcing that the observed effects are unique to speeches addressing VAW rather than general discussions of violence.

Lastly, we conduct a similar placebo test using our event study framework, in which we randomly reassign speech dates while keeping all other variables, including the main outcomes, unchanged. This exercise tests whether the observed post-speech responses could arise from spurious correlations driven by time trends or other coincidental events. The results, presented in Appendix Figure D2, show no discernible changes in search interest following randomly assigned speech dates. This absence of effects reinforces the validity of our empirical strategy and supports the interpretation that the observed responses are genuinely attributable to the timing of the actual Pope's speeches rather than to random temporal variation.

5 Conclusion

This paper provides evidence on the role of religious leaders in shaping social attitudes, focusing on Pope Francis and beliefs regarding the justification of violence against women. As a prominent religious figure, Pope Francis has repeatedly condemned VAW, advocated for respect and dignity, and highlighted the societal value of women, positioning him to influence public perceptions of violence and its acceptability.

Using a comprehensive content analysis of his speeches, we apply LDA topic modelling to identify recurring themes and construct a VAW Index based on relevant terms. Analysis of data from the World Values Survey shows that exposure to Pope Francis' speeches is associated with a significant reduction in the belief that VAW can be justified. This relationship is identified through a DDD approach that leverages variation in speech timing and intensity, Catholic affiliation, and proximity to the Vatican, while controlling for fixed effects for country and year, religious denomination, and ethnicity. Placebo tests and robustness checks confirm the validity of these findings.

We identify two potential mechanisms that may drive these effects. First, we find that Pope's speeches heighten the salience of religious values that, in turn, may discourage violence. Second, Pope's speeches generate increased public engagement, evidenced by short-term surges in online searches for VAW-related terms and heightened media coverage following a speech.

Our results highlight the capacity of figures of religious authority to shape attitudes toward VAW. Given the global reach and influence of religious leaders, their involvement in social issues can complement formal policy interventions aimed at reducing VAW. In addition, incorporating faith-based narratives into public awareness campaigns may enhance their effectiveness, particularly in communities where religious identity is strongly held. Finally, the observed increase in public interest following speeches suggests that timely, targeted interventions by religious leaders can catalyse societal engagement with issues of violence and gender justice.

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Supplementary Appendix

"Holy words, worldly deeds: The role of Pope Francis in Violence Against Women"

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Appendix A - Content analysis of Pope's speeches

In This section, we discuss the content analysis of the Pope's speeches, focusing on how the speech corpus was prepared. In addition, we detail the construction of the indices used in our analysis.

A1 Preparation of speech corpus

To prepare a corpus of speech transcripts, we downloaded a total of 1,812 speeches by Pope Francis between 2013 and 2022 from the Holy See Archive.[1] Each speech transcript has a unique identifier and is in pdf format. We translated speeches that are not in English using Google Cloud Translation. We used the "readtext-R" package to extract data from the speeches, which are available as PDF documents. We used package "stringr-R" for text preprocessing. We remove headings, titles, dates, and footnotes. We also remove hyperlinks, unwanted characters or patterns, extra white space, symbols, and hyphens. Furthermore, since speeches also contain commas, parentheses, quotation marks, full stops, semicolons, colons, and exclamation marks, they were removed. To prepare the text in a structured format to further facilitate our analysis, a package "quanteda-R" was used to manage the corpus. We applied common pre-processing of text, such as token preparation, normalisation to lowercase, removal of punctuation, stop words, etc.

A2 LDA Topic model

We ran the LDA topic model in R using the "topicmodels" package of Blei et al. (2003). We performed text pre-processing using the "Quanteda" package version 3.3.1 of Benoit et al. (2018). We also evaluated the optimal number of topics based on the perplexity score with different number of topics at 10, 15, 20, 30 and 50. Since the number of topics was not the primary concern in our analysis, we performed the LDA model for k = 30 to obtain more granular topics (Table A1). We noted two distinct topics: Topics 19 and 24. The topic model provided evidence of violence against women related terms, especially in topic 19 with the highest terms with abuse, victims, trafficking, minor, etc. which are related to violence.

[1] See official website of the Holy See, https://www.vatican.va/content/francesco/en.html, for details of Pope Francis' speeches. The archival of speeches is on a monthly basis and starts from 2013 onwards. Accessed on 5 May 2024.

Topic 24 also contains terms such as peace, dialogue, religious, war, violence, etc. The top 100 terms for the respective topics 19 and 24 are shown in Table A2.

A3 Identification of VAW-related terms

For our exploration of VAW-related terms, we examined the corpus through the generation of N-grams. N-grams in text analysis is a common practice researchers employ to identify the co-occurrence of words, helping to understand the text's meaning and context. By dividing the text into smaller segments, we can better understand how words relate to each other and their common occurrences within the dataset. We prepared a Document Feature Matrix (DFM) with 1,812 documents and 962,868 features. Our DFM contains the frequency of N-grams with detailed information on document IDs, total length of the document (word counts) and status on whether or not the speech was translated into English.[2] This additional information was compiled for further robustness checks. The document IDs includes the date of speech.

Next, we investigated VAW-related terms by conducting a keyword-in-context (KWIC) search following the UN Women's definition for various forms of violence against women and girls.[3] We used terms such as "abuse", "torture", "violence", "mistreatment", "exploitation", "suffering", "coercion", "endurance", "discrimination", "threats", "injustice", "slavery", "trafficking", "prostitution", "sexual", "victimization", "violation", "denial", "exclusion", "infliction", "inequality", "isolation", "offend", "wound", "demean", "enslave", and "rape". We focus on these terms in relation to "women". KWIC search analysis gives evidence of the presence of VAW-related terms. We selected the top 20 trigrams or less as produced by each keyword associated with "women". For other violence-related terms, we used similar terms in KWIC search analysis for VAW-related terms, but this time we focused on terms outside the context of "women". This gives us trigrams related to other violence, which does not focus on "women". For a nonviolence index, we used terms derived from the most common nonviolence terms in speeches, such as "god", "good", "work", "love", "peace", "human",

[2]The Vatican website provides a variety of speech transcripts in languages such as Arabic, English, French, German, Italian, Polish, Portuguese, and Spanish. We scraped all transcripts for which English translations are provided. However, for 195 transcripts that do not have English translations, we used Google Cloud Translation services to translate them.

[3]See https://unwomen.org.au/types-of-violence-against-women-and-girls/ for UN Women's definitions and types of violence against women and girls.

"community", "hope", "dialogue", and "heart".

A4 Index construction

Our primary objective for performing the content analysis of Pope's speeches is to create indices for VAW, other violence, and nonviolence. Using KWIC search terms provided in Table A3, we prepared a single data frame containing trigrams for VAW, other violence, and nonviolence. A total of 250 trigrams for VAW, 160 for other violence, and 177 for nonviolence formed the basis for the construction of the indices. Using the first principal components of the identified trigram terms, we constructed three separate indices: the VAW Index, the Other Violence Index, and the NonViolence Index. We included respectively the first four components, the first five components and the first three components to construct the VAW index, the Other Violence index, and the NonViolence index. The combined scree plots that show the eigenvalues after PCA are shown in Figure A1. We normalised the indices to a scale of 0 to 1. Similarly, we also constructed the VAW Index2 and the VAW Index6 based on the first two and the first six principal components of the identified trigram terms related to VAW for robustness checks.

Table A1. List of 30-topic specifications

Topic Number	Top 5 words	Topic Assignment
Topic 1	unity, spirit, christians, churches, communion	Harmony
Topic 2	earth, environment, food, water, climate	Enironment
Topic 3	mercy, forgiveness, forgive, reconciliation, sins	Spirituality
Topic 4	school, lorenzo, earthquake, florence, institute	Lorenzo
Topic 5	pray, work, service, families, christmas	Social
Topic 6	work, economy, money, poor, business	Economy
Topic 7	ignatius, jesuits, jesuit, society, exercises	Indigenous
Topic 8	gratuitousness, bolivia, ecuador, claret, carmelite	Mission
Topic 9	chatter, diocesanity, deacons, diaconate, presbytery	Clergy
Topic 10	migrants, mediterranean, migration, refugees, migrant	Migration
Topic 11	latin, america, aparecida, american, indigenous	Latin America
Topic 12	catechist, chaos, catechists, sardinia, airport	Catechist
Topic 13	spirit, mission, god, pastoral, faith	Faith
Topic 14	martyrs, korea, mongolia, japan, korean	Asia
Topic 15	problem, countries, good, women, visit	Empowerment
Topic 16	education, university, educational, theology, students	Education
Topic 17	jews, jewish, sri, lanka, shalom	Jewish
Topic 18	good, children, work, help, tell	Children
Topic 19	abuse, victims, trafficking, minors, prison	Violence
Topic 20	music, liturgy, liturgical, art, harmony	Workshop
Topic 21	sick, health, care, healthcare, suffering	Healthcare
Topic 22	human, work, good, social, society	Society
Topic 23	curia, communication, justice, law, roman	Justice
Topic 24	peace, dialogue, religious, war, violence	Conflict
Topic 25	family, families, marriage, children, couples	Family
Topic 26	tonino, bianchetti, solitude, lorena, charles	Leadership
Topic 27	sport, sports, team, play, football	Sports
Topic 28	cadet, scout, orione, pharaoh, zambia	Zambia
Topic 29	albania, hungary, hungarian, budapest, hungarians	Hungary
Topic 30	god, love, lord, heart, hope	Religion

Notes: This table shows 30 different topics from the LDA topic model with 5 most common terms. For brevity, we present only the top 5 most common terms. Topic assignments are based on the most common terms.

Table A2. Top 100 terms in topic 19 and 24

Topic Number	Top 100 words
Topic 19	abuse, victims, trafficking, minors, prison, children, sexual, crimes, law, criminal, evil, crime, protection, death, slavery, vulnerable, corruption, punishment, penalty, phenomenon, violence, scourge, prisons, cases, prisoners, reintegration, drugs, child, protect, committed, drug, power, commission, digital, abused, detention, justice, exploitation, internet, rehabilitation, mafia, pornography, suffering, redemption, measures, survivors, painful, adults, sin, combat, prevention, corrupt, gravity, age, victim, physical, catechism, regarding, torture, net, chaplains, experienced, scandal, sentence, detainees, abuses, enslaved, prostitution, harm, centres, pain, suffered, addiction, penal, slave, mistakes, data, traffickers, innocent, vulnerability, forms, images, reported, police, addictions, abolition, tourism, public, healing, cruel, criminals, revenge, shame, enforcement, legislation, psychological, armed, web, innocence, online
Topic 24	peace, dialogue, religious, war, violence, land, conflict, conflicts, future, countries, hope, fraternity, nations, religions, respect, reconciliation, east, international, freedom, visit, hatred, christians, justice, women, rights, leaders, political, name, efforts, suffering, human, middle, communities, religion, africa, common, build, united, children, weapons, refugees, unity, coexistence, peaceful, men, entire, traditions, wars, humanitarian, great, diplomatic, nation, humanity, region, ethnic, mutual, syria, republic, destruction, interreligious, members, history, victims, continue, authorities, express, arms, particular, building, citizens, past, recent, spiritual, encounter, harmony, desire, relations, identity, presence, death, situation, civil, cooperation, wish, offer, south, continent, interests, president, path, friendship, god, dignity, beloved, crisis, values, representatives, possible, lands, security

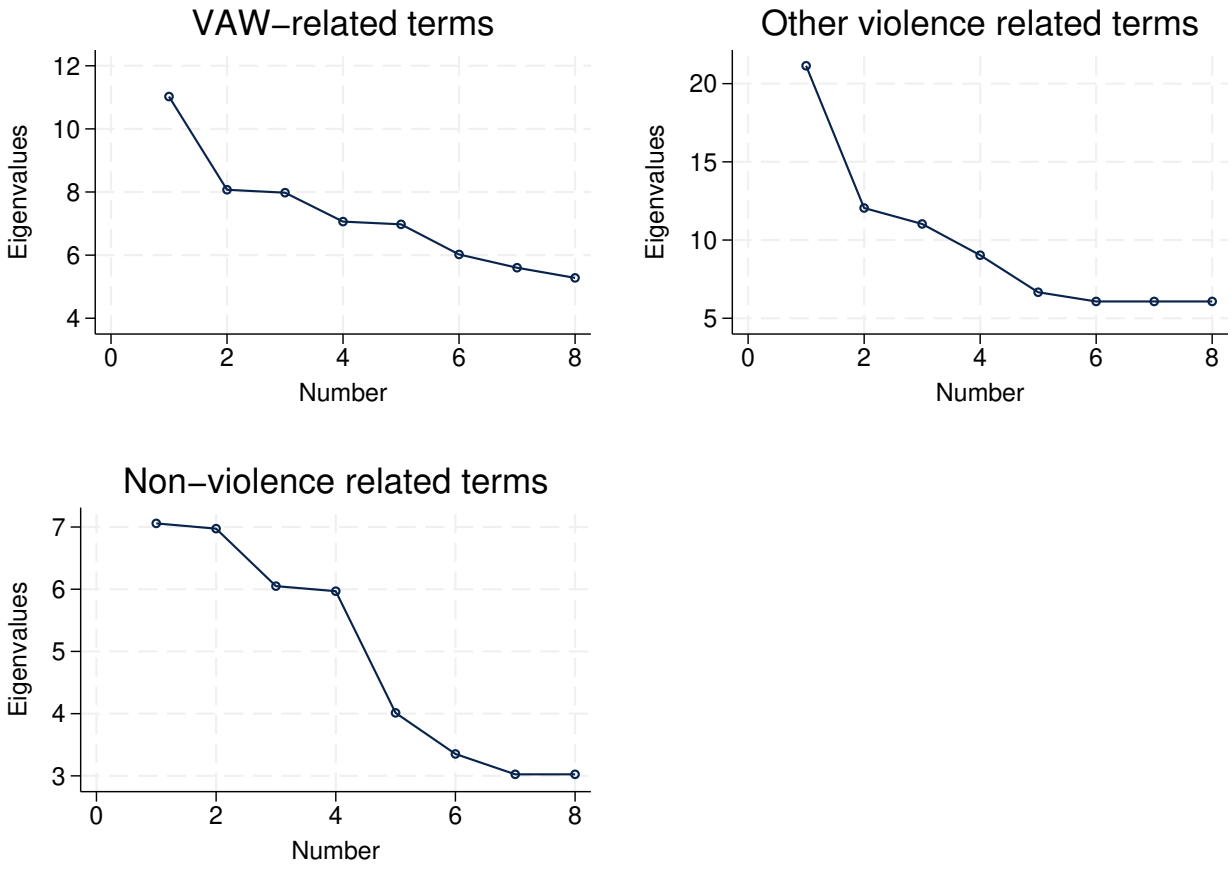
Notes: This table presents the top 100 terms in topic 19 and 24. The top 100 terms in the remaining topics are not shown to save the space.

Table A3. KWIC search terms to identify VAW-related trigrams for index construction

Index	KWIC	Context
VAW index	abuse, torture, violence, mistreat, exploit, suffer, force, endure, discriminate, kill, threaten, injustice, slavery, trafficking, prostitution, sexual, victim, violate, denied, exclude, inflict, inequality, isolation, discrimination, offend, wound, demean, enslave, rape	Search conducted in the context of "women", capturing gender-specific violence
Other violence index	abuse, torture, violence, mistreat, exploit, suffer, force, endure, discriminate, kill, threaten, injustice, slavery, trafficking, prostitution, sexual, victim, violate, denied, exclude, inflict, inequality, isolation, discrimination, offend, wound, demean, enslave, rape	Search conducted outside the context of "women", capturing broader violence
Non-violence index	god, good, work, love, peace, human, community, hope, dialogue, heart	Search conducted using frequent non-violence terms from speeches

Notes: This table presents the KWIC search terms used to identify VAW-related trigrams. The trigrams are used to construct the main explanatory variable, the *VAW Index*.

Figure A1. First Principal Components of trigram terms - Eigenvalues



Notes: This figure presents a scree plot of PCA eigenvalues related to VAW, other violence, and non-violence terms in papal speeches. An index for VAW is created using the first four components from trigram terms related to VAW, other violence is created with the first five components using the trigram terms related to other violence language, and a non-violence index uses the first three components from trigram terms related to non-violence language.

Appendix B - Excerpts from Pope's speeches on VAW

We present a few examples of Pope Francis' speeches on VAW. These examples demonstrate the use of terms related to VAW.

B1 Violence

"—— I would like once again from the depths of my heart to appeal to the leaders of nations and of international organizations, to the believers of every religion, and to men and women of good will for an end to all suffering, all violence, and all religious, cultural, and social discrimination ——", *Consistory Hall, 20 June 2013.*

"—— We also observe with great concern, and can only deplore, an increase in violence against women and children ——", *Vatican, 25 April 2014.*

"—— Sadly, even apart from situations of war, all too many women even today are victims of violence ——", *Sala Regia, 12 January 2015.*

"—— I also encourage you to continue your pastoral work, paying particular attention to the situation of women: promoting women's role in society and fighting against abuse and violence toward women is also a way of proclaiming the Gospel of Jesus Christ, who chose to be born of a woman, the Virgin Mary ——", *Vatican, 7 May 2015.*

"—— It is painful to see how in this land, which is under the protection of the Mother of God, so many women are devalued, denigrated and exposed to endless violence ——", *Jorge Basadre Institute (Puerto Maldonado), 19 January 2018.*

"—— It is my hope that the invaluable role of women in society may be increasingly acknowledged worldwide and that all forms of injustice, discrimination and violence against women come to an end ——", *Regia Hall, 9 January 2020.*

"—— Every form of violence inflicted upon a woman is a blasphemy against God ——", *Regia Hall, 9 January 2020.*

"—— It is time that violence against women cease and that they be respected and not treated like bargaining chips ——", *Basilica of Saint Mary of the Angels (Assisi), 12 November 2021.*

B2 Sexual abuse and exploitation

"—— Acts of violence and exploitation directed at women are not merely wrong; they are crimes that destroy the harmony, the poetry and beauty that God wished to bestow on the world ——", *Regia Hall, 9 January 2020.*

"—— Our world demands of all government leaders a will which is effective, practical and constant, concrete steps and immediate measures for preserving and improving the natural environment and thus putting an end as quickly as possible to the phenomenon of social and economic exclusion, with its baneful consequences: human trafficking, the marketing of human organs and tissues, the sexual exploitation of boys and girls, slave labour, including prostitution, the drug and weapons trade, terrorism and international organized crime ——", *United Nations Headquarters, New York, 25 September 2015.*

"—— Truth means recognizing the pain of women who are victims of violence and abuse ——", *Las Malocas Park (Villavicencio), 8 September 2017.*

"—— Sexual abuse (ranging from groping to rape), according to some 2014 UNICEF estimates, would affect 120 million girls, who are the greatest number of victims ——", *Sala Regia, 24 February 2019.*

"—— Here I think, too, of all those women and children of our time, especially those who are wounded, violated and exposed to every form of exploitation, enslavement, violence and abuse ——", *"Inner Santi Maitri" Hall of the Government House (Bangkok), 21 November 2019.*

"—— Let us make heard the voices of women who are victims of abuse and exploitation, marginalization and undue pressures, like those I mentioned with regard to the workplace ——", *9 January 2020.*

B3 Prostitution and trafficking

"—— I therefore urge the international community to devise a more united and effective strategy against human trafficking so that, in every part of the world, men and women may never be used as instruments, but always be respected in their inviolable dignity ——", *Clementine Hall, 12 December 2013.*

"—— I think in particular of Nigeria where acts of violence continue to strike indiscriminately and there is a constant increase in the tragic phenomenon of kidnappings, often of young girls carried off to be made objects of trafficking ——", *Sala Regia, 12 January 2015*.

"—— And the second is that this morning, as he was leaving Santa Marta, how already other times he had been greeted by some homeless people, this morning he was greeted by a group of eleven women and six children: they are women who have been victims of family violence, trafficking, prostitution and who were present with their children, and are now in a house of religious women who helps them with their recovery ——", *Rome-Nairobi Flight, 25 November 2015*.

"—— Suffice it to think how many very young African women arrive on our shores hoping to start a better life, thinking they will earn an honest living, and instead are enslaved, forced into prostitution ——", *Clementine Hall, 12 February 2018*.

"—— Allow me to say, if there are so many young women victims of trafficking who end up on the streets of our cities, it is because many men here — young, middle-aged, elderly — demand these services and are willing to pay for their pleasure ——", *Clementine Hall, 12 February 2018*.

"—— The maid paid a third of what she owes, the Africans didn't invent it; women deceived and exploited to do prostitution in our cities, Africans didn't invent it ——", *10 September 2019*.

Appendix C - Summary Statistics

Table C1. Variable description and detailed construction

Variable	Description
JustifiableVAW	Beliefs of individual that VAW can be justified. Constructed from WVS_trends_3_0 F199. Please tell me for each of the following actions whether you think it can always be justified, never be justified, or something in between, using this card. For a man to beat his wife. Options range from 1-Never justified, to 10-Always justified.
CATH	Equals 1 for Catholic and 0 otherwise. Constructed from WVS_trends_3_0 F025.
INDX_VAW	VAW index constructed from trigram terms related to violence against women. We include the first four components to construct an index. Takes values between 0 and 1.
Proximity	Proximity to Vatican in '000 km sourced from Pellegrino et al. (2021). We define proximity as the negative of the geographical distance to the Vatican with values closer to 0 represent greater geographic proximity and a higher probability of exposure to papal speeches.
INDX_NonGV	Other violence Index constructed from trigram terms related to other violence. We include the first five components to construct an index. Takes value between 0 and 1.
INDX_NonVAW	Non-Violence Index constructed from trigram terms related to non-violence. We include the first three components to construct an index. Takes value between 0 and 1.
Index_VAW2	VAW index2 constructed from trigram terms related to violence against women. We include the first two components to construct an index. Takes values between 0 and 1.
Index_VAW6	VAW index6 constructed from trigram terms related to violence against women. We include the first six components to construct an index. Takes values between 0 and 1.
Male	Equals 1 for male and 0 otherwise. Constructed from WVS_trends_3_0 X001.
Age	Age in years. Constructed from WVS_trends_3_0 X003.
Married	Equals 1 for married and 0 otherwise. Constructed from WVS_trends_3_0 X007.
Children	Number of children. Constructed from WVS_trends_3_0 X011.
Primary	Equals 1 for primary education and 0 otherwise. Constructed from WVS_trends_3_0 X025R.
Secondary	Equals 1 for secondary education and 0 otherwise. Constructed from WVS_trends_3_0 X025R.
Tertiary	Equals 1 for tertiary education and 0 otherwise. Constructed from WVS_trends_3_0 X025R.
Employed	Equals 1 for employed and 0 otherwise. Constructed from WVS_trends_3_0 X028.

Variable	Description
IncomeGroup1	Equals 1 if subjective level of income is low and 0 otherwise. Constructed from WVS_trends_3_0 X047R_WVS.
IncomeGroup2	Equals 1 if subjective level of income is medium and 0 otherwise. Constructed from WVS_trends_3_0 X047R_WVS.
IncomeGroup3	Equals 1 if subjective level of income is high and 0 otherwise. Constructed from WVS_trends_3_0 X047R_WVS.
religionGroupD	Seven categories of religion denomination identified based on WVS_trends_3_0 F025 and WVS_trends_3_0 F034. We label 0-Convinced Atheist; 1-Catholic; 2-Protestant; 3-Orthodox; 4-Muslim; 5-Buddhist; and 6-Others.
DemocraryReligiousAuthority	Reigious authorities interpret. Many things are desirable, but not all of them are essential characteristics of democracy. Please tell me for each of the following things how essential you think it is as a characteristic of democracy. Religious authorities ultimately interpret the laws . The options range from 1-Not an essential characteristic of democracy to 10-An essential characteristic of democracy. Constructed from WVS_trends_3_0 E225.
DemocraryChooseLeader	People choose leader. Many things are desirable, but not all of them are essential characteristics of democracy. Please tell me for each of the following things how essential you think it is as a characteristic of democracy. People choose their leaders in free elections. The options range from 1-Not an essential characteristic of democracy to 10-An essential characteristic of democracy. Constructed from WVS_trends_3_0 E226.
DemocraryTaxRich	Tax rich people. Many things are desirable, but not all of them are essential characteristics of democracy. Please tell me for each of the following things how essential you think it is as a characteristic of democracy. Governments tax the rich and subsidize the poor. The options range from 1-Not an essential characteristic of democracy to 10-An essential characteristic of democracy. Constructed from WVS_trends_3_0 E224.
DemocraryStateAid	State aid for unemployment. Many things are desirable, but not all of them are essential characteristics of democracy. Please tell me for each of the following things how essential you think it is as a characteristic of democracy. People receive state aid for unemployment. The options range from 1-Not an essential characteristic of democracy to 10-An essential characteristic of democracy. Constructed from WVS_trends_3_0 E227.
DemocraryArmyTakesover	Army takes over. Many things are desirable, but not all of them are essential characteristics of democracy. Please tell me for each of the following things how essential you think it is as a characteristic of democracy. The army takes over when government is incompetent. The options range from 1-Not an essential characteristic of democracy to 10-An essential characteristic of democracy. Constructed from WVS_trends_3_0 E228.

Variable	Description
DemocraryCivilRights	Civil rights protect. Many things are desirable, but not all of them are essential characteristics of democracy. Please tell me for each of the following things how essential you think it is as a characteristic of democracy. Civil rights protect people from state oppression. The options range from 1-Not an essential characteristic of democracy to 10-An essential characteristic of democracy. Constructed from WVS_trends_3_0 E229.
DemocraryPeopleIncome	People's income equal. Many things are desirable, but not all of them are essential characteristics of democracy. Please tell me for each of the following things how essential you think it is as a characteristic of democracy. The state makes peoples incomes equal. The options range from 1-Not an essential characteristic of democracy to 10-An essential characteristic of democracy. Constructed from WVS_trends_3_0 E233A.
menBetterPolLeaders	Better political leaders. For each of the following statements I read out, can you tell me how strongly you agree or disagree with each. Do you strongly agree, agree, disagree, or strongly disagree? On the whole, men make better political leaders than women do. Constructed from WVS_trends_3_0 D059.
menBetterBusinessExecutives	Better business executives. For each of the following statements I read out, can you tell me how strongly you agree or disagree with each. Do you strongly agree, agree, disagree, or strongly disagree? On the whole, men make better business executives than women do. Constructed from WVS_trends_3_0 D078.
problemWomenIncome	More income. How would you feel about the following statements? Do you agree or disagree with them? If a woman earns more money than her husband, it's almost certain to cause problems. The options provided are agree strongly, agree, neither agree nor disagree, disagree and disagree strongly. Constructed from WVS_trends_3_0 D066_B.
menRight2Job	Right to job. How would you feel about the following statements? Do you agree or disagree with them? When jobs are scarce, men should have more right to a job than women. The options provided are agree strongly, agree, neither agree nor disagree, disagree and disagree strongly. Constructed from WVS_trends_3_0 C001.
DemocraryObeyRules	People obey rulers. Many things are desirable, but not all of them are essential characteristics of democracy. Please tell me for each of the following things how essential you think it is as a characteristic of democracy. People obey their rulers. The options range from 1-Not an essential characteristic of democracy to 10-An essential characteristic of democracy. Constructed from WVS_trends_3_0 E233A.
DemocracyImport	Democracy is important. How important is it for you to live in a country that is governed democratically? The options range from 1-Not at all important to 10-Absolutely important. Constructed from WVS_trends_3_0 E235.

Variable	Description
womenRightDemocracy	Right in Democracy. Many things are desirable, but not all of them are essential characteristics of democracy. Please tell me for each of the following things how essential you think it is as a characteristic of democracy. Women have the same rights as men. The options range from 1-Not an essential characteristic of democracy to 10-An essential characteristic of democracy. Constructed from WVS_trends_3_0 E233.
university4Boy	University for men. For each of the following statements I read out, can you tell me how strongly you agree or disagree with each. Do you strongly agree, agree, disagree, or strongly disagree? A university education is more important for a boy than for a girl. Constructed from WVS_trends_3_0 D060.
JustifiablePV	Political violence. Please tell me for each of the following actions whether you think it can always be justified, never be justified, or something in between, using this card. Political violence. The options range from 1-Never justified to 10-Always justified. Constructed from WVS_trends_3_0 E290.
JustifiableAbortion	Justifiability of abortion. Please tell me for each of the following actions whether you think it can always be justified, never be justified, or something in between, using this card. Abortion. The options range from 1-Never justified to 10-Always justified. Constructed from WVS_trends_3_0 F120.
JustifiableSuicide	Justifiability of suicide. Please tell me for each of the following actions whether you think it can always be justified, never be justified, or something in between, using this card. Suicide. Options range from 1-Never justified, to 10-Always justified. Constructed from WVS_trends_3_0 F123.
JustifiableDivorce	Justifiability of divorce. Please tell me for each of the following actions whether you think it can always be justified, never be justified, or something in between, using this card. Divorce. Options range from 1-Never justified, to 10-Always justified. Constructed from WVS_trends_3_0 F121.
JustifiableGovtBenefit	Justifiability of claiming government benefits. Please tell me for each of the following actions whether you think it can always be justified, never be justified, or something in between, using this card. Claiming government benefits to which you are not entitled. Options range from 1-Never justified, to 10-Always justified. Constructed from WVS_trends_3_0 F114A.
JustifiableAvoidFare	Justifiability of cheating public transport fare. Please tell me for each of the following actions whether you think it can always be justified, never be justified, or something in between, using this card. Avoiding a fare on public transport. Options range from 1-Never justified, to 10-Always justified. Constructed from WVS_trends_3_0 F115.

Variable	Description
JustifiableVAOP	Violence against other. Please tell me for each of the following actions whether you think it can always be justified, never be justified, or something in between, using this card. Political violence. The options range from 1-Never justified to 10-Always justified. Constructed from WVS_trends_3_0 F114D.
JustifiableChildBeating	Beating children. Please tell me for each of the following actions whether you think it can always be justified, never be justified, or something in between, using this card. Parents beating children. The options range from 1-Never justified, to 10-Always justified. Constructed from WVS_trends_3_0 F114C.
JustifiableProstitution	Justifiability of prostitution. Please tell me for each of the following actions whether you think it can always be justified, never be justified, or something in between, using this card. Prostitution. The options range from 1-Never justified to 10-Always justified. Constructed from WVS_trends_3_0 F119.
BelieveGod	Believe in God. Which, if any, of the following do you believe in God? The option provided is 1-Yes and 2-No. Constructed from WVS_trends_3_0 F050.
BelieveHell	Believe in Hell. Which, if any, of the following do you believe in Hell? The option provided is 1-Yes and 2-No. Constructed from WVS_trends_3_0 F053.
BelieveHeaven	Believe in heaven. Which, if any, of the following do you believe in Heaven? The option provided is 1-Yes and 2-No. Constructed from WVS_trends_3_0 F054.
BelieveLAD	Believe in life after death. Which, if any, of the following do you believe in Life after death? The option provided is 1-Yes and 2-No. Constructed from WVS_trends_3_0 F051.
Pray	Pray to God. Apart from weddings and funerals, about how often do you pray? The options range from 1-Several times a day; 2-Once a day; 3-Several times each week; 4-Only when attending religious services; 5-Only on special holy days; 6-Once a year; 7-Less often; 8-Never, practically never. Constructed from WVS_trends_3_0 F028B.
Attend	Attend religious services. Apart from weddings and funerals, about how often do you attend religious services these days? The options range from 1-More than once a week; 2-Once a week; 3-Once a month; 4-Only on special holy days; 5-Once a year; 6-Less Often; 7-Never, practically never. Constructed from WVS_trends_3_0 F028.
Religious	Religious person. Independently of whether you attend religious services or not, would you say you are...? The options range from 1-A religious person; 2-Not a religious person; 3-An atheist. Constructed from WVS_trends_3_0 F034.

Table C2. Country-specific observations and WVS wave

	Wave 6			Wave 7					
Country	2013	2014	2017	2018	2019	2020	2021	2022	Total
Andorra				999					999
Argentina	22		989						1,011
Australia				1,690					1,690
Bangladesh				1,200					1,200
Armenia							1,218		1,218
Bolivia			2,056						2,056
Brazil		1,430							1,430
Myanmar						1,199			1,199
Canada						4,017			4,017
Chile				950					950
China	604			2,989					3,593
Taiwan ROC					1,220				1,220
Colombia				1,520					1,520
Cyprus					986				986
Czechia								1,184	1,184
Ecuador				1,175					1,175
Ethiopia						1,227			1,227
Georgia		1,199							1,199
Palestine	994								994
Germany			614	896					1,510
Greece			1,180						1,180
Guatemala					1,130	72			1,202
Hong Kong SAR				1,003					1,003
Indonesia				3,196					3,196
Iran						1,472			1,472
Iraq	1,197			1,200					2,397
Japan					1,262				1,262
Kazakhstan				1,133					1,133
Jordan				1,201					1,201
Kenya							1,210		1,210
South Korea			79	1,166					1,245
Kyrgyzstan					841	309			1,150
Lebanon				1,196					1,196
Libya		2,042					854	280	3,176
Macau SAR					809				809
Malaysia				1,313					1,313
Maldives							1,012		1,012
Mexico				1,646					1,646
Mongolia					1,003	610	6		1,619
Morocco							1,200		1,200
Netherlands								1,883	1,883
New Zealand					931	6			937

	Wave 6				Wave 7				
Country	2013	2014	2017	2018	2019	2020	2021	2022	Total
Nicaragua					1,145	55			1,200
Nigeria			75	1,155					1,230
Pakistan				1,940					1,940
Peru				1,388					1,388
Philippines					1,194				1,194
Puerto Rico				1,099					1,099
Romania			686	512					1,198
Russia			1,673						1,673
Serbia			990						990
Slovakia								1,182	1,182
Vietnam					650	550			1,200
Zimbabwe						1,206			1,206
Tajikistan						1,200			1,200
Thailand	1,186		368	1,120					2,674
Tunisia	1,189				1,198				2,387
Turkey				2,383					2,383
Ukraine						984			984
Egypt	1,518			1,191					2,709
United States			2,519						2,519
Uruguay								989	989
Venezuela							1,190		1,190
Yemen		985							985

Appendix D - Additional Robustness Tests

Table D1. Influence of papal speeches on VAW attitudes - Expanded baseline results

	(1)	(2)	(3)	(4)	(5)
Catholic × Index VAW	-0.173***	-0.178***	-0.179***	-0.168***	-0.168***
	(0.049)	(0.057)	(0.059)	(0.057)	(0.057)
Catholic × Proximity	0.006	0.006	0.006	0.006	0.006
	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)
Index VAW × Proximity	-0.031**	-0.032**	-0.032***	-0.160***	-0.167***
	(0.013)	(0.013)	(0.012)	(0.007)	(0.008)
Catholic × Index VAW × Proximity	-0.024***	-0.024***	-0.024***	-0.022***	-0.022***
	(0.006)	(0.007)	(0.007)	(0.007)	(0.006)
Male			0.075***	0.076***	0.076***
			(0.012)	(0.012)	(0.012)
Married			-0.023***	-0.024***	-0.025***
			(0.008)	(0.008)	(0.008)
No. of children			0.003	0.003	0.003
			(0.003)	(0.003)	(0.003)
Age			-0.001	-0.000	-0.000
			(0.001)	(0.001)	(0.001)
Age-squared			0.000	-0.000	-0.000
			(0.001)	(0.001)	(0.001)
Secondary education			-0.034***	-0.037***	-0.036***
			(0.010)	(0.010)	(0.010)
Tertiary education			-0.051***	-0.055***	-0.054***
			(0.018)	(0.018)	(0.018)
Employed				-0.005	-0.005
				(0.004)	(0.004)
Medium income				0.021**	0.021**
				(0.009)	(0.009)
High income				0.011	0.012
				(0.024)	(0.024)
Country FEs	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes
Religion denomination dummies		Yes	Yes	Yes	Yes
Demographic controls			Yes	Yes	Yes
Labour market controls				Yes	Yes
Interview day FEs				Yes	Yes
Country-specific linear trends					Yes
R^2	0.088	0.089	0.098	0.121	0.122
Mean Dep. Variable	0.276	0.276	0.276	0.276	0.276
No. of countries (clusters)	64	64	64	64	64
No. of years	8	8	8	8	8
N	96,340	96,340	96,340	96,340	96,340

Notes: OLS regressions. This table reports all coefficient estimates corresponding to the baseline results presented in Table 2 of the main text. ***, ** and * indicate statistical significance level at 1%, 5% and 10%.

Table D2. Alternative definitions of the main outcome variable - Justifiable VAW

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Catholic × Index VAW × Proximity	-0.022***	-0.006**	-0.012***	-0.004	-0.006***	0.001	0.004***	0.000	-0.000	0.002
	(0.006)	(0.002)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Religion denomination dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labour market controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interview day FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-specific linear trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.123	0.039	0.044	0.040	0.040	0.038	0.028	0.023	0.020	0.040
Mean Dep. Variable	0.276	0.276	0.276	0.276	0.276	0.276	0.276	0.276	0.276	0.276
No. of countries (clusters)	64	64	64	64	64	64	64	64	64	64
No. of years	8	8	8	8	8	8	8	8	8	8
N	96,340	96,340	96,340	96,340	96,340	96,340	96,340	96,340	96,340	96,340

Notes: OLS regressions. The outcome variable for each column is a binary indicator. Column (1) is estimated using binary outcome variable that equals 1 if the respondent believes wife beating as never justifiable, and 0 otherwise. Columns (2-9) are estimated using the binary outcome variables that equals 1 if the respondent believes wife beating as justifiable, and 0 otherwise. Column (10) is estimated using the binary outcome variable equals 1 if the respondent believes wife beating as always justifiable, and 0 otherwise. All controls and fixed effects are the same as in Table D1. Results use nationally-representative WVS sampling weights. Standard errors, which are specified in parentheses, are clustered at the country level. ***, **, and * indicate statistical significance level at 1%, 5% and 10%.

Table D3. Robustness to alternative ways of constructing the VAW Index and Proximity variables

	(1)	(2)	(3)	(4)	(5)
Catholic × Index VAW × Proximity	-0.022***	-0.043***			
	(0.006)	(0.015)			
Catholic × Index VAW2 × Proximity			-0.030*		
			(0.017)		
Catholic × Index VAW6 × Proximity				-0.026***	
				(0.008)	
Catholic × Index VAW × Adjusted Proximity					-0.014**
					(0.006)
Country FEs	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes
Religion denomination dummies	Yes	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes	Yes
Labour market controls	Yes	Yes	Yes	Yes	Yes
Interview day FEs	Yes		Yes	Yes	Yes
Country-specific linear trends	Yes	Yes	Yes	Yes	Yes
R^2	0.122		0.123	0.123	0.123
Mean Dep. Variable	0.276	0.276	0.276	0.276	0.276
No. of countries (clusters)	64	64	64	64	64
No. of years	8	8	8	8	8
N	96,340	96,340	96,340	96,340	96,340

Notes: OLS regressions. Each column shows a different specification. Column (1) is a baseline estimation. Column (2) is estimated using ordered probit model. Columns (3-4) are estimated using VAW index constructed from the first two and first six components of the trigram terms related to VAW. Column (5) is estimated by incorporating the locations of the respondents. Outcome variable is *JustifiableVAW* which is the beliefs of individuals that VAW can be justified. All controls and fixed effects are the same as in Table D1. Results use nationally-representative WVS sampling weights. Standard errors, which are specified in parentheses, are clustered at the country level. ***, ** and * indicate statistical significance level at 1%, 5% and 10%.

Table D4. Robustness to additional controls and sample restrictions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Catholic × Index VAW × Proximity	-0.022***	-0.022***	-0.020***	-0.033***	-0.022***	-0.022***	-0.022***	-0.022***
	(0.006)	(0.006)	(0.006)	(0.008)	(0.006)	(0.006)	(0.006)	(0.006)
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Religion denomination dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labour market controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interview day FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FEs		Yes						
Anglo country dummies					Yes			
Country-specific linear trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Country-specific quadratic trends					Yes	Yes	Yes	
Country-specific cubic trends							Yes	
Region x Year FEs								Yes
R^2	0.122	0.122	0.131	0.112	0.122	0.122	0.122	0.122
Mean Dep. Variable	0.276	0.276	0.285	0.240	0.276	0.276	0.276	0.276
No. of countries (clusters)	64	64	57	36	64	64	64	64
No. of years	8	8	8	6	8	8	8	8
N	96,340	96,340	69,730	25,833	96,340	96,340	96,340	96,340

Notes: OLS regressions. Outcome variable is *JustifiableVAW* which is the beliefs of individuals that VAW can be justified. Column (1) is a baseline estimation. Column (2) controls for ethnicity dummies. Column (3) excludes sample that include translated speeches. Column (4) excludes sample that include speeches delivered within the Vatican. Column (5) controls for anglo-country dummy. Columns (6-7) control for country-specific quadratic and cubic trends. All controls and fixed effects are the same as in Table D1. Results use nationally-representative WVS sampling weights. Standard errors, which are specified in parentheses, are clustered at the country level. ***, ** and * indicate statistical significance level at 1%, 5% and 10%.

Table D5. Robustness to placebo outcomes - perceptions on the characteristics of democracy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Catholic × Index VAW × Proximity	-0.002	0.004	0.006*	0.001	0.013***	0.004	0.002	0.006	-0.000
	(0.002)	(0.005)	(0.003)	(0.002)	(0.004)	(0.003)	(0.006)	(0.006)	(0.002)
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Religion denomination dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labour market controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interview day FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-specific linear trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.064	0.205	0.052	0.082	0.275	0.085	0.110	0.147	0.036
Mean Dep. Variable	0.276	0.276	0.276	0.276	0.276	0.276	0.276	0.276	0.276
No. of countries (clusters)	64	64	64	64	64	64	64	64	64
No. of years	8	8	8	8	8	8	8	8	8
N	96,340	96,340	96,340	96,340	96,340	96,340	96,340	96,340	96,340

Notes: OLS regressions. Outcome variables specified in columns (1-9) are binary indicators equal 1 if respondent evaluates it as an essential characteristics of democracy: government tax the rich and subsidize the poor (column (1)); religious authorities interpret the laws (column (2)); people choose their leaders in free election (column (3)); people receive state aid for unemployment (column (4)); the army takes over when government is incompetent (column (5)); civil rights protect people's liberty against oppression (column (6)); the state makes people's incomes equal (column (7)); people obey their rulers (column (8)); and importance of democracy (column (9)). All controls and fixed effects are the same as in Table D1. Results use nationally-representative WVS sampling weights. Standard errors, which are specified in parentheses, are clustered at the country level. ***, ** and * indicate statistical significance level at 1%, 5% and 10%.

Table D6. Robustness to placebo VAW indices

	(1)	(2)	(3)	(4)	(5)	(6)
Catholic × Placebo VAW index1 × Proximity	0.006					
	(0.006)					
Catholic × Placebo VAW index2 × Proximity		-0.005				
		(0.007)				
Catholic × Placebo VAW index3 × Proximity			0.003			
			(0.004)			
Catholic × Placebo VAW index4 × Proximity				0.008		
				(0.005)		
Catholic × Placebo VAW index5 × Proximity					0.003	
					(0.004)	
Catholic × Other violence index × Proximity						-0.155
						(0.215)
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Religion denomination dummies	Yes	Yes	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes
Labour market controls	Yes	Yes	Yes	Yes	Yes	Yes
Interview day FEs	Yes	Yes	Yes	Yes	Yes	Yes
Country-specific linear trends	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.122	0.122	0.122	0.122	0.122	0.122
Mean Dep. Variable	0.276	0.276	0.276	0.276	0.276	0.276
No. of countries (clusters)	64	64	64	64	64	64
No. of years	8	8	8	8	8	8
N	96,340	96,340	96,340	96,340	96,340	96,340

Notes: OLS regressions. Each column shows a different specification. All controls and fixed effects are the same as in Table D1. Placebo VAW index1 to Placebo VAW index5 are randomly assign index values to the treated units. Other violence index is an index constructed from the first five components of trigram terms related to other violence. Results use nationally-representative WVS sampling weights. Standard errors, which are specified in parentheses, are clustered at the country level. ***, ** and * indicate statistical significance level at 1%, 5% and 10%.

Table D7. Pope's speeches on general violence and religious values

	(1) Believe in God	(2) Believe in Hell	(3) Believe in Heaven	(4) After death believe	(5) Self reported religiosity	(6) Pray	(7) Attend
Catholic × Non-GV Index × Proximity	0.071	0.328	0.113	-0.051	0.035	0.166	-0.035
	(0.290)	(0.330)	(0.202)	(0.175)	(0.355)	(0.298)	(0.256)
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Religion denomination dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labour market controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interview day FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-specific linear trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.685	0.497	0.573	0.463	0.561	0.723	0.548
Mean Dep. Variable	0.276	0.276	0.276	0.276	0.276	0.276	0.276
No. of countries (clusters)	64	64	64	64	64	64	64
No. of years	8	8	8	8	8	8	8
N	96,340	96,340	96,340	96,340	96,340	96,340	96,340

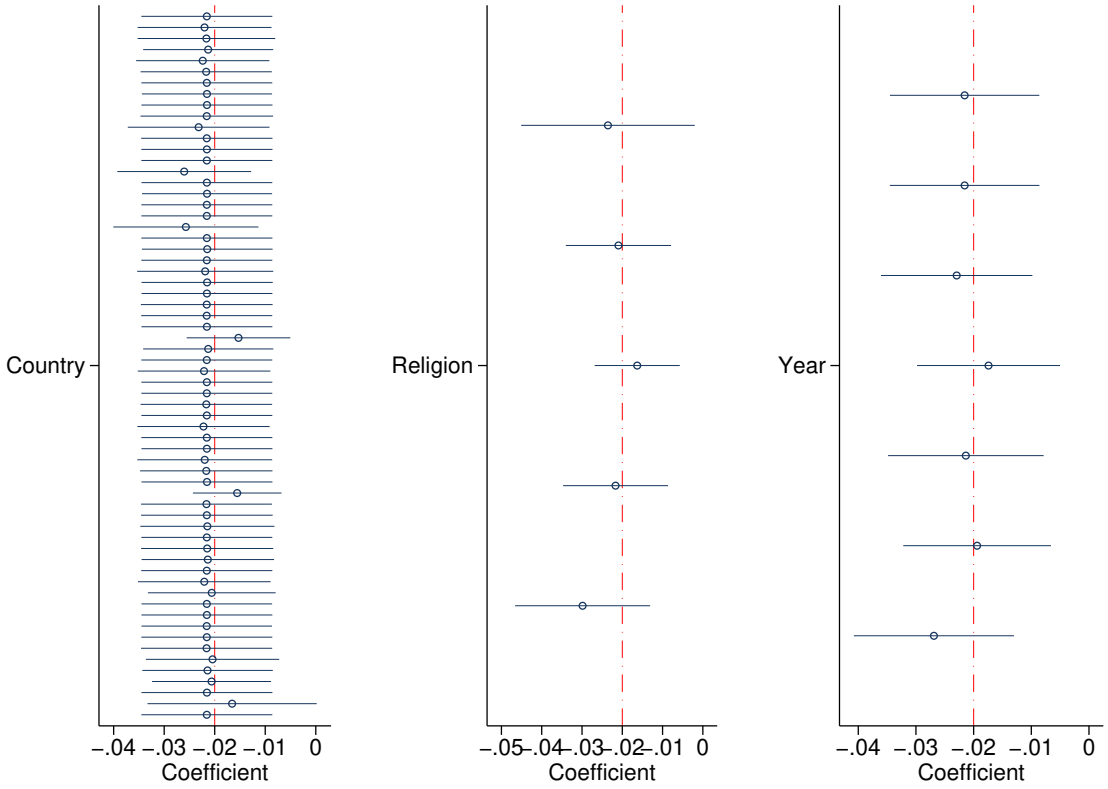
Notes: OLS regressions. Outcome variables specified in columns (1-7) are binary indicators equal 1 if the respondent believes in God (column (1)); believe in hell (column (2)); believe in heaven (column (3)); believe in life after death (column (4)); identifies as religious (column (5)); prays to God (column (6)); and attends religious services apart from weddings, funerals and christenings (column (7)). All controls and fixed effects are the same as in Table D1. Results use nationally-representative WVS sampling weights. Standard errors, which are specified in parentheses, are clustered at the country level. ***, ** and * indicate statistical significance level at 1%, 5% and 10%.

Table D8. Robustness to placebo outcomes - perceptions on the technology and science

	(1) Technology-make life easier	(2) Technology-more opportunities	(3) Technology-dependent	(4) Technology-breaks ideas	(5) Technology-not important to know
Catholic × Index VAW × Proximity	-0.005	0.003	-0.008	-0.002	0.001
	(0.005)	(0.004)	(0.009)	(0.003)	(0.012)
Country FEs	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes
Religion denomination dummies	Yes	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes	Yes
Labour market controls	Yes	Yes	Yes	Yes	Yes
Interview day FEs	Yes	Yes	Yes	Yes	Yes
Country-specific linear trends	Yes	Yes	Yes	Yes	Yes
R^2	0.085	0.078	0.058	0.076	0.081
Mean Dep. Variable	0.276	0.276	0.276	0.276	0.276
No. of countries (clusters)	64	64	64	64	64
No. of years	8	8	8	8	8
N	96,340	96,340	96,340	96,340	96,340

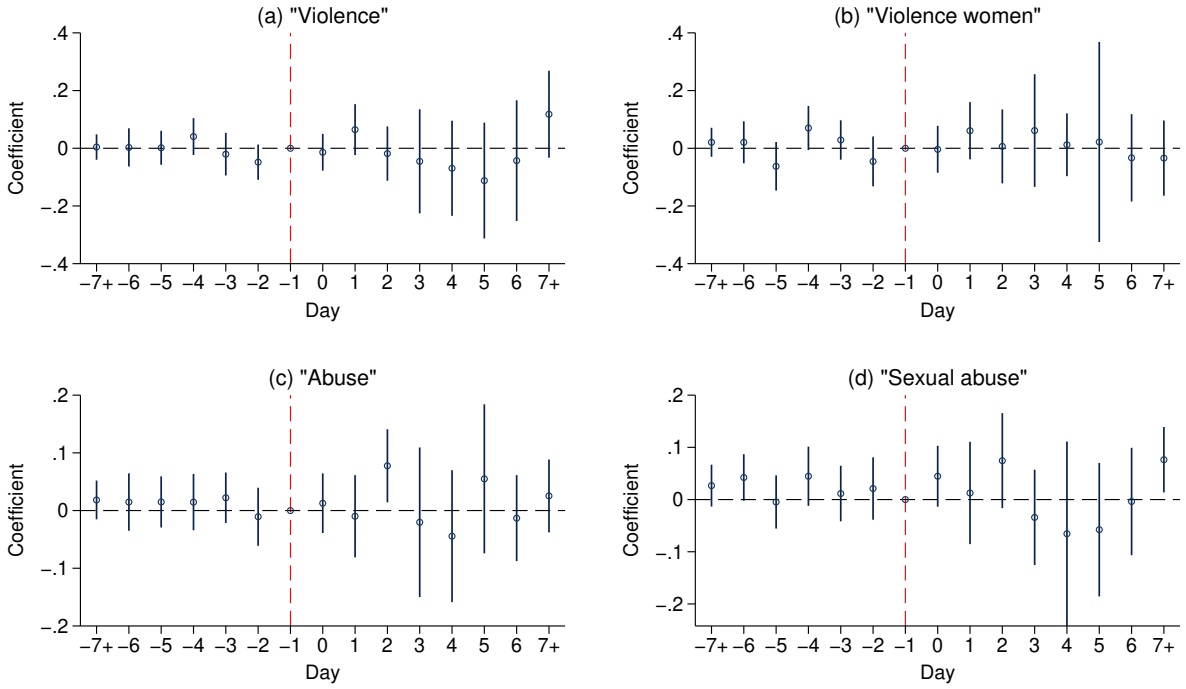
Notes: OLS regressions. Outcome variables specified in columns (1-5) are binary indicators, equals 1 if the respondent completely agrees to the statement that science and technology are making our lives healthier, easier, and more comfortable (column (1)); because of science and technology, there will be more opportunities for the next generation (column (2)); we depend too much on science and not enough on faith (column (3)); one of the bad effects of science is that it breaks down people's ideas of right and wrong (column (4)); and it is not important for me to know about science in my daily life (column (5)). All controls and fixed effects are the same as in Table D1. Results use nationally-representative WVS sampling weights. Standard errors, which are specified in parentheses, are clustered at the country level. ***, ** and * indicate statistical significance level at 1%, 5% and 10%.

Figure D1. Robustness to specific exclusion



Notes: This figure plots the coefficients on the triple interaction term (*Catholic* × *Index VAW* × *Proximity*) of Eq. (1) by leaving one country out (left), one religion out (middle) and one year out (right) sequentially. Coefficients are shown as point estimates with 95% confidence intervals. All controls and fixed effects are the same as in Table D1. The baseline coefficient on the triple interaction term is indicated by the vertical red dashed line.

Figure D2. Placebo check on daily global online search interest on VAW-related terms using Google Trends



Notes: This figure plots the coefficients of the lead (β_l^{lead}) and lag (β_k^{lag}) terms of the event study Eq. (2), with the outcome variable being the natural logarithm of VAW-related search terms. Coefficients are shown as point estimates with 95% confidence intervals. The specification includes year and week fixed effects, and time intervals beyond seven days before or after the speech are aggregated into a single '7+' category. Standard errors are clustered at the search-week level. The omitted reference category is the day immediately preceding the speech, indicated by the vertical red dashed line at t=-1. The dataset comprises 3,652 observations spanning January 1, 2013, to December 31, 2022.

Appendix E - Heterogenous Effects

Table E1. Influence of papal speeches on religious values by gender

	(1) Believe in God	(2) Believe in Hell	(3) Believe in Heaven	(4) After death believe	(5) Self reported religiosity	(6) Pray	(7) Attend
Panel A.Women							
Catholic × VAW Index × Proximity	0.042***	0.019***	0.028***	0.045***	0.065***	0.037***	0.013**
	(0.008)	(0.006)	(0.010)	(0.006)	(0.011)	(0.006)	(0.005)
R^2	0.684	0.483	0.560	0.445	0.583	0.735	0.551
Mean Dep. Variable	0.753	0.545	0.570	0.538	0.643	0.806	0.719
No. of countries (clusters)	64	64	64	64	64	64	64
No. of years	8	8	8	8	8	8	8
N	50,676	50,676	50,676	50,676	50,676	50,676	50,676
Panel B.Men							
Catholic × VAW Index × Proximity	0.041***	0.008	0.046*	0.039**	0.040***	0.013*	0.003
	(0.007)	(0.009)	(0.023)	(0.016)	(0.009)	(0.007)	(0.007)
R^2	0.700	0.532	0.605	0.506	0.554	0.727	0.578
Mean Dep. Variable	0.720	0.536	0.542	0.514	0.587	0.784	0.764
No. of countries (clusters)	64	64	64	64	64	64	64
No. of years	8	8	8	8	8	8	8
N	45,499	45,499	45,499	45,499	45,499	45,499	45,499
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Religion denomination dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labour market controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interview day FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-specific linear trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: OLS regressions. Outcome variables specified in columns (1-7) are binary indicators, equals 1 if the respondent: believes in God (column (1)), believes in Hell (column (2)), believes in Heaven (column (3)), believes in life after death (column (4)), identifies as religious (column (5)), prays to God (column (6)) and attends religious services (column (7)). All controls and fixed effects are the same as in Table D1. Results use nationally-representative WVS sampling weights. Standard errors, which are specified in parentheses, are clustered at the country level. ***, ** and * indicate statistical significance level at 1%, 5% and 10%.

Table E2. Heterogenous effects by demographic characteristics

	(1) Male	(2) Female	(3) Married	(4) Single	(5) Below secondary	(6) Post secondary	(7) 15-24 yrs.	(8) 25-55 yrs.	(9) 56-64 yrs	(10) 65 years and above
Catholic × VAW index × Proximity	-0.011	-0.033***	-0.010	-0.024**	-0.031**	0.000	-0.044***	-0.014	0.001	-0.026*
	(0.008)	(0.010)	(0.008)	(0.010)	(0.013)	(0.008)	(0.011)	(0.010)	(0.022)	(0.013)
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Religion denomination dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Labour market controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interview day FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-specific linear trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.123	0.143	0.129	0.170	0.129	0.168	0.170	0.134	0.213	0.240
Mean Dep. Variable	0.312	0.244	0.285	0.289	0.280	0.237	0.310	0.287	0.253	0.199
No. of countries (clusters)	64	64	64	64	60	60	64	64	64	64
No. of years	8	8	8	8	6	6	8	8	8	8
N	45,499	50,676	54,813	22,577	48,763	26,974	14,216	57,386	11,372	10,908

Notes: OLS regressions. Outcome variable is *JustifiableVAW* which is the beliefs of individuals that VAW can be justified. All controls and fixed effects are the same as in Table D1. For age-based analysis, we adopt the International Labour Organisation (ILO) classification, dividing the sample into youth (15–24 years), prime working age (25–55 years), near retirement (56–64 years), and seniors (65 years and older). Results use nationally-representative WVS sampling weights. Standard errors, which are specified in parentheses, are clustered at the country level. ***, ** and * indicate statistical significance level at 1%, 5% and 10%.

Appendix F - Supplementary Event Studies

Table F1. Detailed event study results on daily global online search interest on VAW-related terms using Google Trends

	(1) Ln (violence)	(2) Ln (violence women)	(3) Ln (abuse)	(4) Ln (sexual abuse)	(5) Ln (trafficking)	(6) Ln (trafficking women)	(7) Ln (sexual)	(8) Ln (abuse women)	(9) LnVAW	(10) LnIPV	(11) LnGBV	(12) Ln (sexual assault)
7+ Days before speech	0.044	0.047	0.069**	-0.004	0.173*	-0.001	-0.010	0.068***	0.048	-0.034	-0.002	-0.084
	(0.049)	(0.061)	(0.029)	(0.032)	(0.098)	(0.034)	(0.022)	(0.024)	(0.074)	(0.065)	(0.119)	(0.081)
6 Days before speech	0.010	0.080	0.099**	0.034	0.166*	-0.009	0.012	-0.008	0.071	0.005	-0.130	-0.078
	(0.053)	(0.063)	(0.040)	(0.031)	(0.099)	(0.051)	(0.027)	(0.032)	(0.088)	(0.074)	(0.114)	(0.056)
5 Days before speech	0.012	0.061	0.079**	0.031	0.109	0.004	0.005	-0.011	0.060	0.005	-0.097	-0.097*
	(0.043)	(0.067)	(0.039)	(0.031)	(0.085)	(0.040)	(0.023)	(0.037)	(0.077)	(0.062)	(0.103)	(0.056)
4 Days before speech	-0.014	-0.004	0.058**	0.008	0.112	0.061	-0.007	-0.000	0.038	-0.011	-0.089	-0.063
	(0.029)	(0.051)	(0.028)	(0.032)	(0.070)	(0.052)	(0.016)	(0.027)	(0.065)	(0.054)	(0.078)	(0.060)
3 Days before speech	0.033	0.016	0.072***	0.025	0.059	-0.050*	0.021	0.046*	0.022	0.005	-0.031	0.015
	(0.022)	(0.035)	(0.017)	(0.020)	(0.038)	(0.029)	(0.014)	(0.023)	(0.035)	(0.028)	(0.042)	(0.030)
2 Days before speech	0.040***	0.041**	0.051***	0.012	0.038*	0.006	0.022***	0.043***	0.039*	0.033	0.036	0.016
	(0.012)	(0.017)	(0.010)	(0.011)	(0.020)	(0.023)	(0.008)	(0.013)	(0.022)	(0.021)	(0.034)	(0.022)
Day of speech	-0.003	-0.004	0.006	0.007	0.030**	0.010	0.002	-0.018**	-0.014	-0.004	-0.006	0.048***
	(0.007)	(0.012)	(0.005)	(0.007)	(0.015)	(0.017)	(0.005)	(0.008)	(0.016)	(0.014)	(0.020)	(0.011)
1 Day after speech	0.072***	0.078***	0.077***	0.048***	0.113***	0.026	0.034***	0.040***	0.078***	0.033*	0.065**	0.094***
	(0.010)	(0.015)	(0.008)	(0.008)	(0.018)	(0.017)	(0.005)	(0.011)	(0.018)	(0.019)	(0.026)	(0.016)
2 Days after speech	0.064***	0.088***	0.098***	0.046***	0.134***	-0.002	0.041***	0.068***	0.080***	0.019	0.080*	0.070***
	(0.019)	(0.023)	(0.014)	(0.010)	(0.034)	(0.023)	(0.011)	(0.018)	(0.029)	(0.026)	(0.041)	(0.024)
3 Days after speech	0.031	0.017	0.078***	0.035*	0.127**	-0.031	0.027	0.039	0.029	-0.003	0.042	0.009
	(0.029)	(0.042)	(0.021)	(0.020)	(0.048)	(0.037)	(0.017)	(0.028)	(0.047)	(0.040)	(0.057)	(0.037)
4 Days after speech	-0.034	-0.067	0.015	-0.006	0.134*	-0.019	-0.023	0.010	-0.085	-0.027	-0.152	-0.123*
	(0.035)	(0.060)	(0.028)	(0.031)	(0.072)	(0.050)	(0.022)	(0.031)	(0.069)	(0.063)	(0.096)	(0.062)
5 Days after speech	-0.053	-0.012	-0.018	-0.040	0.131	0.083	-0.052**	0.006	-0.051	-0.127***	-0.149	-0.141
	(0.036)	(0.066)	(0.029)	(0.037)	(0.097)	(0.075)	(0.023)	(0.035)	(0.084)	(0.043)	(0.098)	(0.085)
6 Days after speech	-0.060*	-0.022	0.014	-0.041	0.145	-0.007	-0.040	-0.033	-0.061	-0.075	-0.351***	-0.191**
	(0.034)	(0.069)	(0.034)	(0.049)	(0.104)	(0.049)	(0.027)	(0.037)	(0.084)	(0.095)	(0.092)	(0.089)
7+ Days after speech	0.067	-0.018	0.041**	-0.013	0.059	0.035	-0.024	0.043	-0.025	-0.080*	-0.073	-0.115
	(0.049)	(0.061)	(0.019)	(0.034)	(0.078)	(0.035)	(0.024)	(0.031)	(0.076)	(0.044)	(0.115)	(0.081)
R^2	0.355	0.768	0.306	0.355	0.578	0.268	0.379	0.405	0.755	0.414	0.396	0.400
Mean Dep. Variable	3.956	3.314	4.181	4.119	3.761	3.867	4.323	3.991	3.049	3.846	3.652	3.651
No. of years	10	10	10	10	10	10	10	10	10	10	10	10
N	3,652	3,652	3,652	3,652	3,652	2,282	3,652	3,652	3,650	2,174	2,664	3,652

Notes: OLS regressions. Each column shows a different specification. This table presents the coefficients of the lead (β_k^{lead}) and lag (β_k^{lag}) terms of the event study Eq. (2), with the outcome variable being the natural logarithm of VAW-related search terms. VAW, IPV, and GBV respectively represent violence against women, intimate partner violence, and gender-based violence. Coefficients are shown as point estimates with 95% confidence intervals. The specification includes year and week fixed effects, and time intervals beyond seven days before or after the speech are aggregated into a single '7+' category. Standard errors are clustered at the search-week level. The omitted reference category is the day immediately preceding the speech at t=-1.

Table F2. Detailed event study results on weekly online search interest on VAW-related terms for Catholic majority countries using Google Trends

	(1) Violence	(2) Violence women	(3) Abuse	(4) Sexual abuse
Catholic x 7+ Weeks before speech	0.233	-0.113	-0.354	-0.174*
	(0.210)	(0.082)	(0.315)	(0.104)
Catholic x 6 Weeks before speech	0.495**	0.105	0.320	-0.199**
	(0.236)	(0.202)	(0.214)	(0.100)
Catholic x 5 Weeks before speech	0.016	0.002	-0.038	-0.188*
	(0.255)	(0.160)	(0.173)	(0.099)
Catholic x 4 Weeks before speech	-0.045	0.019	-0.123	-0.065
	(0.128)	(0.124)	(0.166)	(0.141)
Catholic x 3 Weeks before speech	0.447*	-0.078	0.168	-0.129
	(0.260)	(0.072)	(0.171)	(0.088)
Catholic x 2 Weeks before speech	0.146	0.062	0.212	0.158
	(0.164)	(0.076)	(0.195)	(0.137)
Catholic x Week of speech	0.398**	0.098	0.062	0.041
	(0.188)	(0.084)	(0.114)	(0.111)
Catholic x 1 Week after speech	0.301**	0.322***	0.218*	-0.019
	(0.150)	(0.115)	(0.121)	(0.094)
Catholic x 2 Weeks after speech	0.319	0.333**	0.554*	0.261
	(0.198)	(0.142)	(0.282)	(0.214)
Catholic x 3 Weeks after speech	0.047	0.321	-0.090	0.117
	(0.149)	(0.205)	(0.226)	(0.179)
Catholic x 4 Weeks after speech	0.272	0.066	0.221	0.008
	(0.253)	(0.131)	(0.176)	(0.173)
Catholic x 5 Weeks after speech	0.004	-0.037	-0.113	-0.072
	(0.243)	(0.112)	(0.404)	(0.169)
Catholic x 6 Weeks after speech	0.094	0.103	0.120	-0.180*
	(0.229)	(0.238)	(0.283)	(0.099)
Catholic x 7+ Weeks after speech	0.229	0.045	-0.220	-0.034
	(0.211)	(0.093)	(0.203)	(0.111)
Region FEs	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Region-specific trends	Yes	Yes	Yes	Yes
Region-specific quadratic trends	Yes	Yes	Yes	Yes
R^2	0.492	0.199	0.587	0.294
Mean Dep. Variable	3.147	0.415	3.611	0.586
No. of regions (clusters)	249	249	249	249
No. of years	10	10	10	10
N	130,227	130,227	130,227	130,227

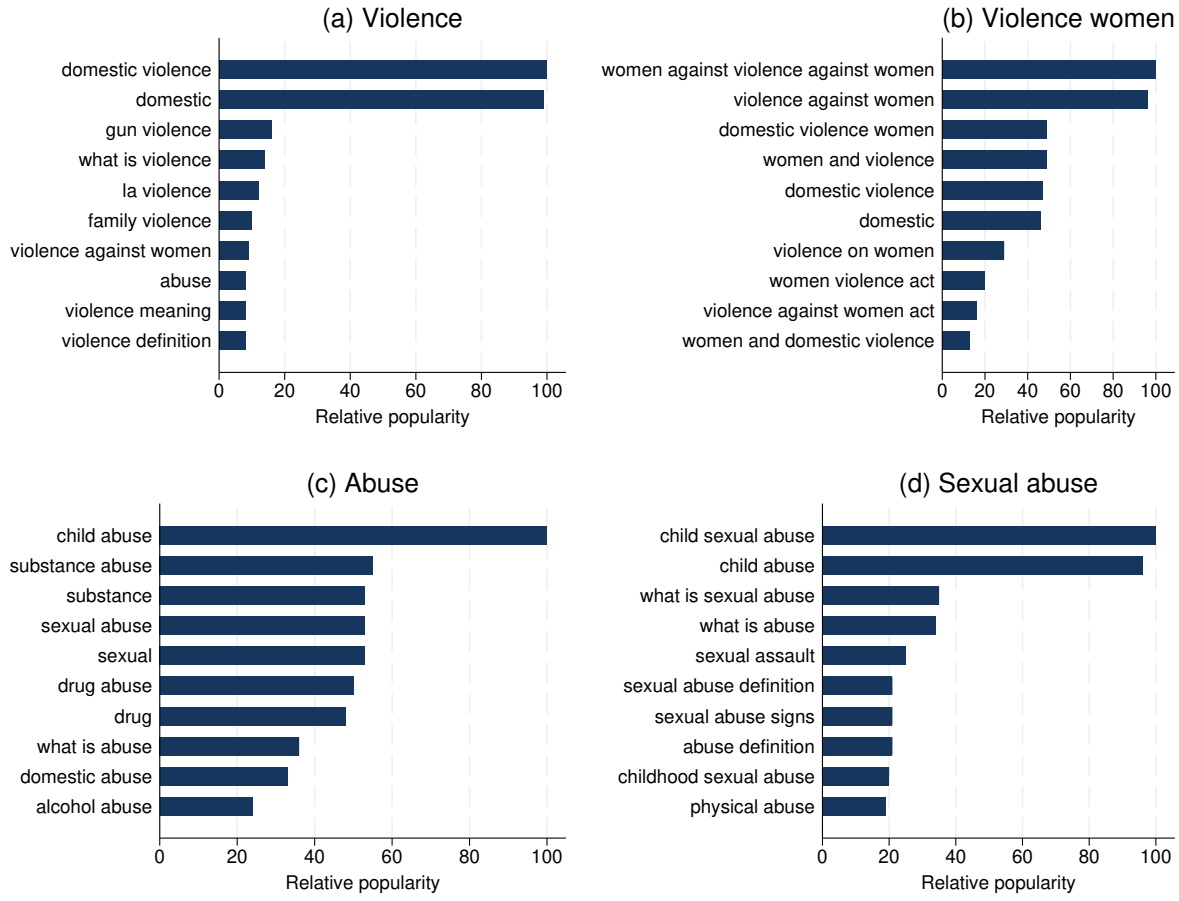
Notes: OLS regressions. Each column shows a different specification. This table presents the coefficients of the lead (β_l^{lead}) and lag (β_k^{lag}) terms of the event study Eq. (3), with the outcome variable being the natural logarithm of VAW-related search terms. Coefficients are shown as point estimates with 95% confidence intervals. The specification includes year and week fixed effects, and time intervals beyond seven days before or after the speech are aggregated into a single '7+' category. Standard errors are clustered at the search-week level. The omitted reference category is the day immediately preceding the speech at t=-1.

Table F3. Detailed event study results on media coverage on VAW-related topics using the Daw Jones' Factiva database

	(1) Pope Francis and violence	(2) Pope Francis and abuse	(3) Pope Francis and sexual abuse	(4) Pope Francis and trafficking	(5) Pope Francis and sexual	(6) Pope Francis and VAW	(7) Pope Francis and sexual assault
7+ Days before speech	-0.201	-1.494	-0.664	-0.116***	-0.579	0.061	0.135
	(0.225)	(0.933)	(0.465)	(0.039)	(0.496)	(0.070)	(0.082)
6 Days before speech	0.541	-0.547	0.090	-0.136**	0.126	0.593	0.337
	(0.989)	(0.865)	(0.460)	(0.062)	(0.589)	(0.531)	(0.252)
5 Days before speech	-0.324	0.019	0.808	-0.161***	0.117	0.143	0.011
	(0.329)	(1.257)	(1.108)	(0.043)	(0.761)	(0.130)	(0.037)
4 Days before speech	-0.557***	0.160	0.784	-0.113**	0.130	-0.052	-0.007
	(0.175)	(1.247)	(1.128)	(0.050)	(0.764)	(0.039)	(0.025)
3 Days before speech	-0.096	0.520	0.294	-0.022	0.282	0.001	-0.006
	(0.224)	(0.623)	(0.385)	(0.050)	(0.429)	(0.045)	(0.015)
2 Days before speech	-0.198	-0.101	-0.021	0.018	-0.082	-0.002	0.005
	(0.143)	(0.277)	(0.226)	(0.069)	(0.213)	(0.012)	(0.016)
Day of speech	0.477**	1.035***	0.319*	0.056	0.431*	0.019*	0.011
	(0.200)	(0.384)	(0.180)	(0.044)	(0.241)	(0.010)	(0.013)
1 Day after speech	0.175	0.798**	0.312*	-0.039	0.366*	0.028**	0.060
	(0.136)	(0.309)	(0.185)	(0.035)	(0.192)	(0.012)	(0.043)
2 Days after speech	0.151	0.781*	0.274	-0.012	0.351	0.033	-0.008
	(0.119)	(0.432)	(0.305)	(0.048)	(0.299)	(0.025)	(0.013)
3 Days after speech	0.441	-0.086	-0.051	0.045	-0.152	0.014	0.027
	(0.268)	(0.564)	(0.343)	(0.065)	(0.300)	(0.011)	(0.035)
4 Days after speech	0.363	-0.881**	-0.254	0.069	-0.545**	0.001	-0.010
	(0.437)	(0.435)	(0.257)	(0.089)	(0.269)	(0.022)	(0.022)
5 Days after speech	0.170	-0.593	-0.112	0.097	-0.280	0.040	-0.014
	(0.424)	(0.526)	(0.268)	(0.173)	(0.293)	(0.076)	(0.027)
6 Days after speech	-0.006	-0.004	-0.019	-0.132**	0.118	0.049	-0.053**
	(0.366)	(0.742)	(0.419)	(0.060)	(0.479)	(0.060)	(0.026)
7+ Days after speech	-0.431*	-1.060**	-0.152	-0.067	-0.627**	-0.021	-0.017
	(0.246)	(0.481)	(0.228)	(0.063)	(0.266)	(0.022)	(0.055)
R^2	0.071	0.130	0.149	0.055	0.121	0.069	0.042
Mean Dep. Variable	0.951	2.338	1.071	0.160	1.386	0.035	0.054
No. of articles in English	3,473	8,540	3,910	586	5,061	129	197
N	3,652	3,652	3,652	3,652	3,652	3,652	3,652

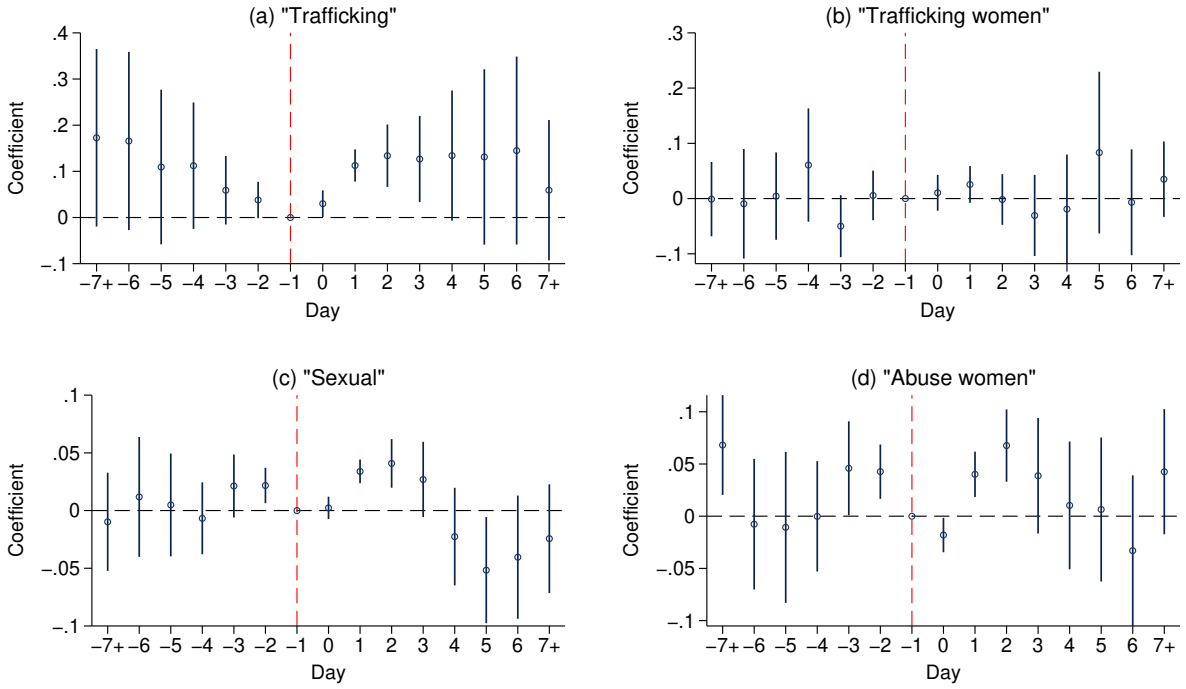
Notes: OLS regressions. Each column shows a different specification. This table presents the coefficients of the lead (β_l^{lead}) and lag (β_k^{lag}) terms of the event study Eq. (2), with the outcome variable being the natural logarithm of VAW-related search terms. Coefficients are shown as point estimates with 95% confidence intervals. The specification includes year and week fixed effects, and time intervals beyond seven days before or after the speech are aggregated into a single '7+' category. Standard errors are clustered at the search-week level. The omitted reference category is the day immediately preceding the speech at t=-1.

Figure F1. Top 10 most frequently related search queries in Google on terms related to VAW



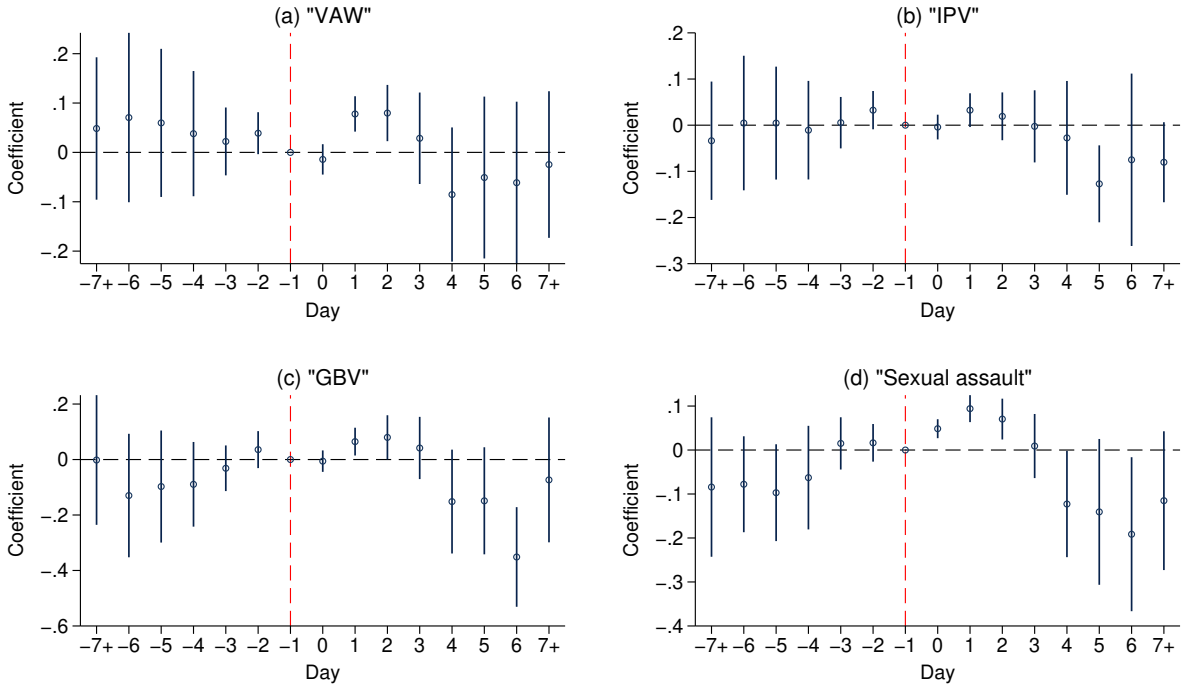
Notes: This figure plots the 10 most frequently related search queries in Google on terms related to VAW. The related queries gives the searches individual have made between January 1, 2013 to December 31, 2022. "Relative popularity" is the popularity of a term relative to the most popular term.

Figure F2. Supplementary event study plot on daily global online search interest on VAW-related terms using Google Trends



Notes: This figure plots the coefficients of the lead (β_l^{lead}) and lag (β_k^{lag}) terms of the event study Eq. (2), with the outcome variable being the natural logarithm of VAW-related search terms. Coefficients are shown as point estimates with 95% confidence intervals. The specification includes year and week fixed effects, and time intervals beyond seven days before or after the speech are aggregated into a single '7+' category. Standard errors are clustered at the search-week level. The omitted reference category is the day immediately preceding the speech, indicated by the vertical red dashed line at t=-1. The dataset comprises 3,652 observations spanning January 1, 2013, to December 31, 2022. Detailed point estimates for all coefficients are provided in Table F1.

Figure F3. Supplementary event study plot on daily global online search interest on commonly used VAW-related terms using Google Trends



Notes: This figure plots the coefficients of the lead (β_l^{lead}) and lag (β_k^{lag}) terms of the event study Eq. (2), with the outcome variable being the natural logarithm of VAW-related search terms. VAW, IPV, and GBV respectively represent violence against women, intimate partner violence, and gender-based violence. Coefficients are shown as point estimates with 95% confidence intervals. The specification includes year and week fixed effects, and time intervals beyond seven days before or after the speech are aggregated into a single '7+' category. Standard errors are clustered at the search-week level. The omitted reference category is the day immediately preceding the speech, indicated by the vertical red dashed line at t=-1. The dataset comprises 3,652 observations spanning January 1, 2013, to December 31, 2022. Detailed point estimates for all coefficients are provided in Table F1.