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IN CRISIS, WE PRAY: RELIGIOSITY AND THE COVID-19 PANDEMIC

Jeanet Bentzen

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Abstract

In times of crisis, humans have a tendency to turn to religion for comfort and explanation. The 2020 COVID-19 pandemic is no exception. Using daily data on Google searches for 95 countries, this research demonstrates that the COVID-19 crisis has increased Google searches for prayer (relative to all Google searches) to the highest level ever recorded. More than half of the world population had prayed to end the coronavirus. The rise amounts to 50% of the previous level of prayer searches or a quarter of the fall in Google searches for flights, which dropped dramatically due to the closure of most international air transport. Prayer searches rose at all levels of income, inequality, and insecurity, but not for the 10% least religious countries. The increase is not merely a substitute for services in the physical churches that closed down to limit the spread of the virus. Instead, the rise is due to an intensified demand for religion: We pray to cope with adversity.

Jeanet Bentzen - jeanet.bentzen@econ.ku.dk
University of Copenhagen and CEPR

In Crisis, We Pray:

Religiosity and the COVID-19 Pandemic

Jeanet Sinding Bentzen[*]

University of Copenhagen, CEPR, CAGE

May 28 2020

Abstract

In times of crisis, humans have a tendency to turn to religion for comfort and explanation. The 2020 COVID-19 pandemic is no exception. Using daily data on Google searches for 95 countries, this research demonstrates that the COVID-19 crisis has increased Google searches for prayer (relative to all Google searches) to the highest level ever recorded. More than half of the world population had prayed to end the coronavirus. The rise amounts to 50% of the previous level of prayer searches or a quarter of the fall in Google searches for flights, which dropped dramatically due to the closure of most international air transport. Prayer searches rose at all levels of income, inequality, and insecurity, but not for the 10% least religious countries. The increase is not merely a substitute for services in the physical churches that closed down to limit the spread of the virus. Instead, the rise is due to an intensified demand for religion: We pray to cope with adversity.

1 Introduction

The COVID-19 pandemic has brought sizeable costs for societies across the globe. A pandemic this size potentially changes our societies for years to come, especially if it impacts our ingrained values and beliefs. This research asks whether the COVID-19 crisis impacts one of the deepest rooted of human behaviors: Religion. Philosophers once predicted that religion would die out as societies modernize.[1] This has not happened.[2] Today, 83% of the world population believe in God and the role of religion is strengthening in some societies. Religion must be serving a purpose that modernization does not fulfill. Identifying who uses religion in crisis is paramount for understanding this role of religion and thus its' persistence and socio-economic consequences.

This research identifies empirically the extent to which the COVID-19 pandemic has induced people across the globe to pray, whether the phenomenon is global, and who prays in times of crisis. Google searches for prayer, as a share of all Google searches, provides a signal of peoples' interest in prayer in real time. Research documents that our behavior on the internet reflects our personal interests and the actions we take in the real world.[3] Likewise, whether or not we search for religious terms on the internet reflects our religious preferences (Yeung, 2019; Stephens-Davidowitz, 2015). Events that instigate intensified actual prayer are clearly visible in the data. Before the COVID-19 pandemic, the Ramadan contributed to the largest yearly increase in the global search intensity for prayer (Panel (a) of Fig. 1). Also, prayer search shares spike up on Sundays everywhere (Stephens-Davidowitz, 2015). Searches for prayer surged in Iran on January 7 2020, coinciding with the funeral of Qassem Soleimani, the Iranian major general killed by US troops, in Australia on January 5 2020, when the movement "Prayer for Australia" swept across Australia in the midst of the unprecedented bushfires, and in Albania on November 26 2019 when a 6.4 magnitude earthquake stroke the country. The countries that search more for prayer on the internet are also ranked in surveys as being more religious (Fig. A.1).

In March 2020, the share of Google searches for prayer surged to the highest level ever recorded, surpassing all other major events that otherwise call for prayer, such as Christmas, Easter, and Ramadan (Fig. 1, Fig. A.11, and Appendix C). The World Health Organization declared the COVID-19 a pandemic on March 11, 2020. The level of prayer search shares in March 2020 was more than 50% higher than the average during February 2020. For comparison, the surge in Google searches for prayer was 1.3 times larger than the rise in searches for

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[1]Marx (1844); Weber (1905); Durkheim (1912); Freud (1927).
[2]Norris and Inglehart (2011); Stark and Finke (2000); Iannaccone (1998).
[3]Moat et al. (2016); Olivola et al. (2019); Goldstone and Lupyan (2016); Cavazos-Rehg et al. (2015); Ginsberg et al. (2009).

takeaway and amounted to 12% of the rise in Netflix searches or 26% the fall in searches for flights, which all saw massive changes globally, since most countries were in lock down and air traffic was shut down (cf. Appendix B.4).[4]

Figure 1: Worldwide Google searches for "prayer" during the past 4 years

(a) Jan 1 2016 - Apr 11 2020

(b) Feb 1 - Apr 1 2020
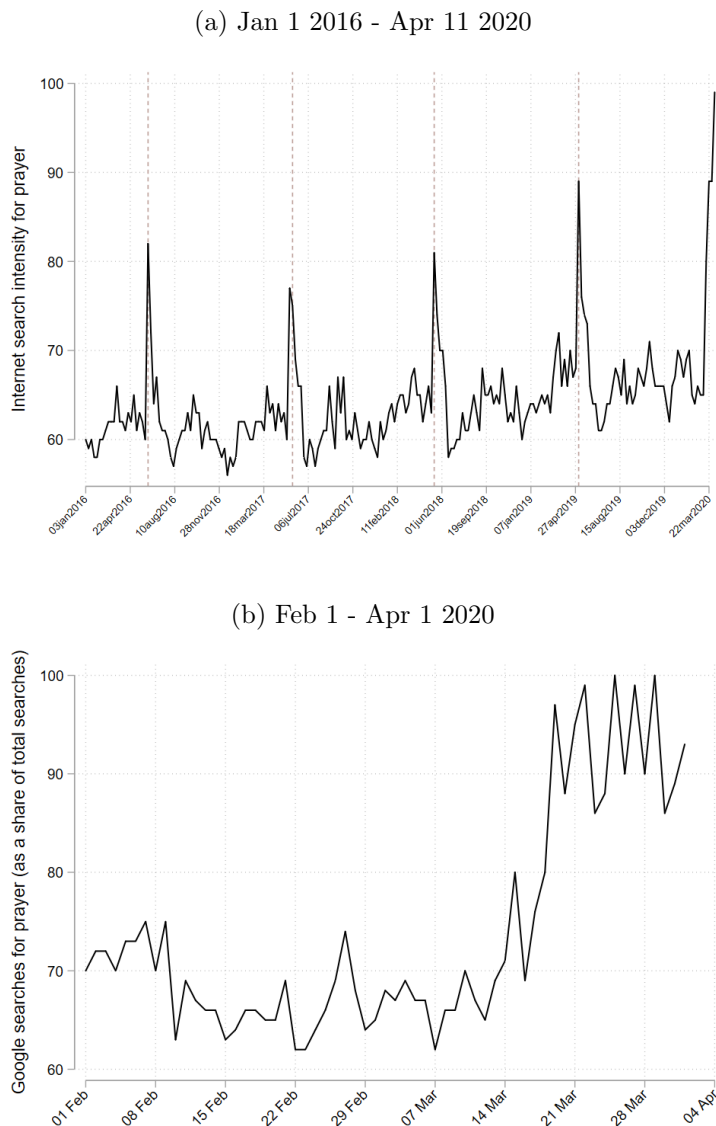
Google searches for prayer relative to the total number of Google searches. The maximum shares were set to 100 by Google Trends. The searches encompass all topics related to prayer, including alternative spellings and languages. The red vertical stippled lines in panel (a) represent the first week of the Ramadan. The period in panel (a) is the longest period for which comparable data was available at the time of writing. The period in panel (b) is the period used in the main analysis (before COVID-19 became a pandemic and before the onset of Easter and the Ramadan). Data source: Google Trends. For the development since 2004, see Fig. A.11. Find more details in Appendix A.1 and C.

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[4]In an attempt to limit the spread of COVID-19, most countries implemented lock downs and most air traffic was shut down. As a result, many people were at home ordering takeaway and watching Netflix much more than usual.

When googling prayer what you find is specific prayer texts to use when praying. Prayers may be recited from memory, read from a book of prayers, or composed spontaneously as they are prayed. In modern times, these books of prayer or verses of prayer can be found on the internet. The most common form of prayer in Christianity is to directly appeal to a deity to grant one's requests (Kurian and Smith, 2010). One of the most searched for prayers in March 2020 was "Coronavirus prayer", which are prayers that ask God for protection against the coronavirus, prayers to stay strong, and prayers to thank nurses for their efforts (Appendix Figures B.2 and B.3). According to a Pew Research Center survey from March 2020, more than half of Americans had prayed to end the coronavirus (Pew, 2020b).

Using daily data on Google searches for prayer for 95 countries across the globe, this research documents that the rise visible in Fig. 1 is not driven by a few countries, but instead is a global phenomenon. Google searches for prayer surge after March 11 for most countries, and even more so after their own populations had been infected. Prayer searches rose more for the more religious countries, and more for Christians and Muslims. Searches for topics related to God, Allah, Muhammad, Quran, Bible, and Jesus, and to a lesser extent Buddha, Vishnu, and Shiva, also rose (Fig. A.12). Prayer search shares rose more in poorer, more insecure, and more unequal countries, but this heterogeneity is exclusively due to these countries being more religious. A back of the envelope calculation shows that more than half of the global population have prayed to end the coronavirus.

The main reason for the rising interest in prayer on the internet is religious coping: People use their religion to cope with adversity.[5] They pray for relief, understanding, and comfort. Research has documented that people struggling with cancer, death in close family, or severe illness are more religious, and also that adversity in the form of natural disasters *cause* people to use their religion more intensely.[6]

People may google prayer for a reason unrelated to religious coping. They may be searching for online forums to replace their physical churches that closed down in an attempt to enforce social distancing. Theoretically, we would not expect this to be the main explanation for the rising search shares for prayer. People tend to use mainly their intrinsic religiosity (such as private prayer) rather than their extrinsic religiosity (such as churchgoing) to cope with adversity.[7] In addition, a recent survey reveals that 95% of Americans who pray, pray alone, while only 2% pray collectively in a church (Barna, 2017). Another survey shows that 24% of Americans respond that their faith has strengthened since the coronavirus, which we would not have predicted if people are simply replacing their physical churchgoing with online church

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[5]Pargament (2001); Norenzayan and Hansen (2006); Cohen and Wills (1985); Park et al. (1990); Williams et al. (1991).

[6]Bentzen (2019) and reviews by Ano and Vasconcelles (2005) and Pargament (2001).

[7]Johnson and Spilka (1991); Pargament (2001); Bentzen (2019).

(Pew, 2020a). They must be doing something that strengthens their faith. The empirical results reveal that replacement of physical churches is not the main reason for the rise in Google searches for prayer (cf. Appendix C.3). For instance, searches for "internet church" also rise, but follow a distinctly different pattern than the prayer searches and is of a much smaller magnitude, the search shares on prayer continue to rise long after the church closures, and the rise in prayer searches is not limited to Sundays, where most masses are held, but occur on all days of the week, except Fridays.

There are reasons to believe that the rise in Google searches for prayer underestimates the true rise in prayer intensity, which is potentially much larger than what is visible from Fig. 1. First, most prayers are performed without the use of the internet, instead recited from memory or read from physical books. Second, among those who use the internet to find prayers, the data encompasses only those who google prayer, while those who enter their preferred prayer websites directly are not included. Third, the elderly, who were most severely affected by the pandemic, are not the most active internet users and thus, their prayer intensity will not show up in Google. Fourth, the month of March 2020 saw an even larger rise in internet searches on topics related to COVID-19 and other topics since people across the globe were at home due to lock downs (see also B.4). These searches enter the denominator of all other search shares, which mechanically reduces the search shares for these other searches, including prayer. Fifth, the data includes only countries with enough internet users and thus the poorest countries or countries with restricted internet access, such as China, are not included. Poorer countries are on average more religious (Inglehart and Norris, 2003) and thus more prone to engage in religious coping (Pargament, 2001).

This research contributes to the literature on religious coping. While previous research has documented a rise in religiosity in the aftermath of natural disasters (Bentzen, 2019; Bulbulia, 2004; Belloc et al., 2016), these disasters do not hit all countries. For instance, Northern European countries are rarely hit and studying disasters cannot reveal whether these societies use religion for coping. Instead, the COVID-19 pandemic hit the entire world and thus provides a unique experiment to study which types of societies use religion for coping.

More broadly, this research relates to a literature that regards cultural values as a fundamental determinant of economic outcomes (Nunn and Puga, 2012; Spolaore and Wacziarg, 2013). This literature has linked gender roles to past agricultural practices (Alesina et al., 2013), individualism to past trading strategies and migration patterns (Greif, 1994; Knudsen, 2019), trust to the slave trade in Africa and climatic risk (Nunn and Wantchekon, 2011; Buggle and Durante, 2017), time-preference to variation in land productivity (Galor and Özak, 2016), and anti-Semitism to the Black Death (Voigtländer and Voth, 2012). The current study links a cultural value with evident implications for economic outcomes (religiosity) to one of its

potential roots: the need for coping in the face of disaster.

The results also relate to previous research documenting correlations between religiosity and socio-economic factors from peoples' ability to cope with stress and uncertainty and less criminal behavior (Guiso et al., 2003; Koenig et al., 1998; Miller et al., 2014) to lower GDP growth, lower innovation, and more traditional gender roles (McCleary and Barro, 2006; Campante and Yanagizawa-Drott, 2015; Inglehart and Norris, 2003). If the COVID-19 pandemic strengthens religion permanently, this may have socio-economic consequences later on.

More broadly, this research contributes to a literature on the mental health effects of the COVID-19 pandemic. Other research has documented symptoms of stress and anxiety among health personnel and the population in China (Wang et al., 2020; Xiao et al., 2020) and a rising economic distress in the US (Fetzer et al., 2020; Binder, 2020). The current results reveal that people from across the globe experience emotional distress in the face of the COVID-19 pandemic, and they use religion to cope. The economic consequences of these emotional effects may be large. A study found that the main part of the economic downturn in the face of COVID-19 are due to the perceived risk of the virus rather than government mandated lock downs of the economy (Andersen et al., 2020).

2 Religious coping

The tendency for people to use religion to deal with crisis can be understood within the religious coping terminology (Pargament, 2001; Bentzen, 2019; Norenzayan and Hansen, 2006; Cohen and Wills, 1985; Park et al., 1990; Williams et al., 1991). The theory states that people use religion as a means to cope with adversity and uncertainty. They pray, seek a closer relation to God, or explain the tragedy by reference to an Act of God. Research has documented that people who experienced adverse life events, such as cancer, heart problems, death in close family, divorce, or injury are more religious than others (Ano and Vasconcelles, 2005; Pargament, 2001). Novel research attests that the impact is global and causal: Adversity, caused by natural disasters, instigates people across the globe to use their religion more intensively (Bentzen, 2019).[8] They are more likely to rank themselves as a religious person, find comfort in God, and to state that God is important in their lives when hit by earthquakes, tsunamis, and volcanic eruptions. This surge in average religiosity occurs on all continents, for people belonging to all major religions, income groups, and from all educational backgrounds. However, religiosity of Catholics and Buddhists increased less than average, while religiosity of Muslims increased somewhat more than average. Recent research also found that people who

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[8]Other research has documented an impact on religiosity of specific disasters, such as the 2012 Christchurch earthquake and the 1927 Great Mississippi river flood (Ager et al., 2016; Sibley and Bulbulia, 2012) and of ecological duress in more general (Botero et al., 2014).

experienced conflict are more religious (Henrich et al., 2019) and that earthquakes increased the power of religious authorities in Medieval Italy (Belloc et al., 2016).

Using religion for coping is part of what is termed emotion-focused coping, in which people aim to reduce the emotional distress arising from a situation (Lazarus and Folkman, 1984). While people use religion for coping with various types of situations, religion is used mainly for coping with negative and unpredictable situations (Pargament, 2001; Bjorck and Cohen, 1993; Smith et al., 2000). Indeed, religiosity increases more in response to unpredictable natural disasters, such as earthquakes, tsunamis, and volcanic eruptions compared to more predictable ones, such as storms and in response to earthquakes in areas that are otherwise rarely hit compared to frequently hit areas (Bentzen, 2019). On the other hand, when we face perceived negative, but predictable events, such as an approaching job interview, we are more likely to engage in problem-focused coping, where we aim to directly tackle the problem that is causing the stress. Being a negative and highly unpredictable event, the COVID-19 crisis certainly fits the criteria for being an event that could instigate religious coping. As of April 20 2020, the COVID-19 had affected 210 countries and territories, infected more than 2.4 mio. individuals worldwide and taken more than 165,000 lives.

People are more likely to use their intrinsic religiosity to cope with adversity rather than their extrinsic religiosity (Johnson and Spilka, 1991; Pargament, 2001). Intrinsic religiosity involves private prayer and one's personal relation to God, while an example of extrinsic religiosity is going to church for social needs or other more ultimate ends than beliefs per se (Allport and Ross, 1967). When faced with adversity, people are thus more likely to use their private beliefs to cope rather than to go to church. Likewise, natural disasters increase private religious beliefs and affect churchgoing much less (Bentzen, 2019). We would therefore expect the COVID-19 pandemic to impact private prayer more than churchgoing, had the churches been open (in an effort to enforce social distancing, most churches closed down as the virus went global).

The intensified use of religion may translate into a permanently larger role of religion, even after the disaster has passed. While the main surge in religiosity occurred during the few years immediately following earthquakes, a residual of elevated religiosity remained and was passed on to future generations (Bentzen, 2019). This results in significant differences in religiosity depending on natural disaster risk in parents' country of origin, even for children of migrants who never lived in the disaster-prone countries. Thus, natural disasters have strengthened the role of religion across the globe permanently. Only time will show whether the same is true for the COVID-19 crisis.

Examples abound of people using prayer as a way of dealing emotionally with the uncertainty and fear surrounding the COVID-19 outbreak. While the title of a sermon at an

Evangelical Christian megachurch in Dallas asks "Is the Coronavirus a Judgement from God?", political leaders from Mr. Akufo-Addo of Ghana to Mr. Morrison of Australia urge their populations to pray as the coronavirus finds its' way into their economies. Even in Denmark, one of the most secular countries, some people get together in online groups to pray. The rest of this paper examines the significance of this.

3   Data: The rise in prayer intensity

To identify which countries experienced an increased interest in prayer and whether some are more likely to use religion for coping, four types of databases were constructed (see also Appendix A). First, a database on Google searches for topics related to prayer as a share of total Google searches for the 95 countries in the world with enough internet users (downloaded from Google Trends). These searches include all topics related to prayer, including alternative spellings and searches for prayer in other languages. Two series of data were constructed: Daily data for all 95 countries for the period January 29 to April 1 2020 and global weekly data from 2016 to 2020. The series stop on April 1, well before the onset of Easter 2020 (Palm Sunday was April 5) and the Ramadan (first day of the Ramadan 2020 was April 24). The daily series start on January 29, after the January holidays and after the fires in Australia. January 29 is chosen to February 1 to get a sample consisting of full weeks, which does not matter for the analysis using daily data, but could matter for the analysis aggregating the daily data to weeks.

Google Trends provides two types of data: Time-series data and cross-section data. The time-series data is available for one a country at a time or as an average for the world. The cross-section data is available for countries or subnational regions as an average over a specified period of time.[9] For the time-series data, Google Trends normalized the search shares to equal 100 for the highest search share during the period for each country. For the cross-country data, the search share was set to 100 for the country with the highest search shares in the sample. This means that only the growth rates, and not the levels, of the time-series data have a meaningful interpretation and can be compared across countries. For the cross-country data, the levels *can* be compared across countries. The analysis includes country fixed effects throughout and thus does not compare countries, but in Section C.2 I identify the characteristics of the countries who pray more, which means that comparison across countries occurs. To construct a panel dataset, I combined the growth rates from the time-series data with the levels from the cross-section data. For each country, I downloaded the average prayer search shares for 2019 based on the cross-section data, set this to the search share on January

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[9]The current analysis uses countries instead of subnational regions, as no time-series data exist for the regions.

29 2020, and calculate the search shares for the rest of the period based on the growth rates from the time-series data.[10]

Most tables and figures are based on these comparable data, except Fig. 1 (and other figures in the Appendix that use world aggregates) which includes the raw data from Google Trends, Fig. 2 where the search shares in all countries are instead normalized to 1 on February 15 2020, Panel (a) of Fig. 3 and Tables A.9-A.10, which are based exclusively on the growth rates in the prayer search shares.

The google searches for prayer will fall as people access their prayer websites directly without googling them or memorize the prayers. Likewise, searches on prayer surge dramatically on the first week of the Ramadan only to drop the week after, even though Muslims pray every day during the Ramadan (cf. Fig. 1). An increasing prayer share reveals that new people are searching for prayer or people who already searched for prayer are searching for prayer again (one person googling prayer many times over a short period of time will not enter the search data many times, though). Thus, falling search shares for prayer are difficult to interpret. Therefore, observations are dropped after the prayer search shares reached their maximum level in Figures 2 and 3. Most remaining figures and maps include the full dataseries, unless stated otherwise. These are therefore conservative estimates.

A second database identifies what people are searching for when searching for the topic prayer (see also B.2). Apart from searches for prayer in different languages, the four search queries that contribute the most to the rise in search shares for prayer are "prayer for coronavirus", "pray for the world", "spiritual communion prayer", and "pray for italy" (cf. Fig. A.2). When googling "prayer for coronavirus", various websites offer prayers related to the coronavirus. These include prayers to prevent the virus from spreading and prayers to thank nurses and other care-takers for their work in relation to the pandemic (see Appendix B.2).

The third database consists of daily data on registered cases and deaths by COVID-19 for each country of the world (see also Appendix A.2). These numbers depend on the amount of testing in each country and general policies regarding registration of cases and deaths, and are therefore neither comparable across countries nor across time (where policies may change). Inclusion of country fixed effects throughout takes care of the difficulty of comparison across countries, but does not account for the difficulty of comparison over time. As an attempt to account of the latter, measures of the timing of the first case or death will be used, but the main results will depend on a measure independent of the registered cases and deaths: The point in time when COVID-19 was declared a pandemic; March 11 2020.

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[10]For instance, the average prayer search share in 2019 was 3 for Denmark, while that in Morocco was 87. I therefore set the prayer search share on January 29 to 3 in Denmark and 87 in Morocco. From January 29 to 30, prayer search shares rose by 68% in Denmark and by 6% in Morocco. The prayer search share on January 30 2020 therefore amounts to 5.1 in Denmark and 92.4 in Morocco, and so forth.

Fourth, to identify the characteristics of those who search more for prayer, the database with Google searches for prayer was combined with data on various characteristics of the countries, such as religiosity levels before COVID-19, the share of Christians, Muslims, Hindus, and Buddhists, and various socio-economic characteristics.

4   Results

To parsimoniously illustrate the findings, Fig. 2 shows daily search-shares for prayer during the period February 15 to April 1 2020 for all 95 countries, split into fourteen regions. Each panel shows two groups of countries within the particular region. The darker curves represent the average for the particular group, while the lighter curves represent the raw data for each country. The search-shares are set to 1 on February 15, which means that the figure shows the change in search-shares, relative the initial level of searches for prayer in the particular country. The vertical line represents March 11, where WHO declared the COVID-19 a pandemic. Search-shares for prayer rose around mid March for most regions, even for the most secular regions of Northern Europe.

The map in panel (a) of Fig. 3 also shows the relative changes in prayer search shares. The map illustrates the growth rate in prayer search shares from February to the highest level reached in March: $\frac{prayer_{march} - prayer_{feb}}{prayer_{feb}}$.[11] The growth rates are large for Northern Europe, where few people searched for prayer before COVID-19. Likewise, the somewhat smaller increases in Northern Africa are due to the high initial levels of prayer searches. Panel (b) of Fig. 3 documents the *absolute* increases in prayer search shares, which is the relevant metric to identify the global spread of intensified prayer. The largest absolute increases occur in South America and Africa, some of the most religious regions of the world. The econometric analysis will rely on the absolute changes, while robustness checks are performed in Tables A.9 and A.10 based on the growth rates.

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[11]To prevent a general rise in prayer search shares from being associated with COVID-19, potential increases in February were subtracted from the numerator in both panels. The map is very similar without this correction. See more on the growth rates in Appendix C and Section C.4.

Figure 2: Daily Google searches for the topic "prayer" by region

(a) Northern Europe
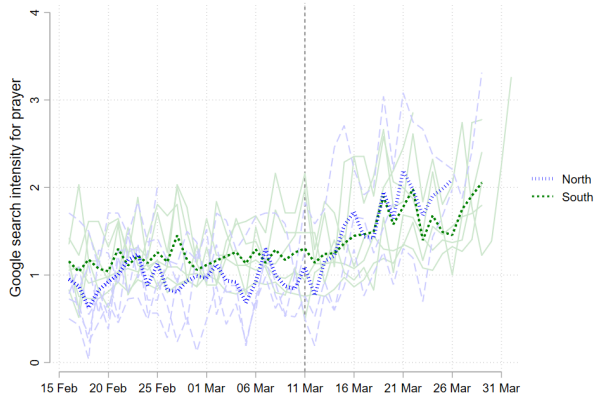
(b) Southern Europe
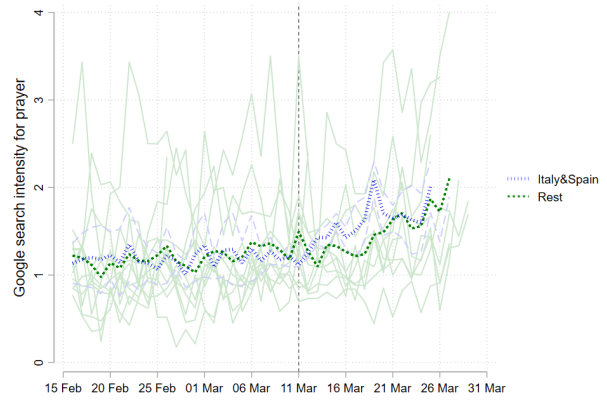
(c) North and Middle America
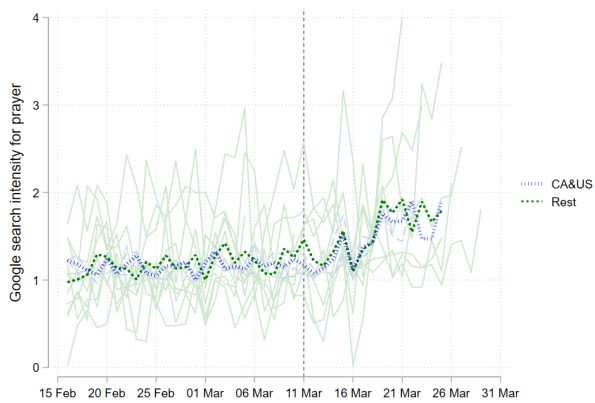
(d) South America
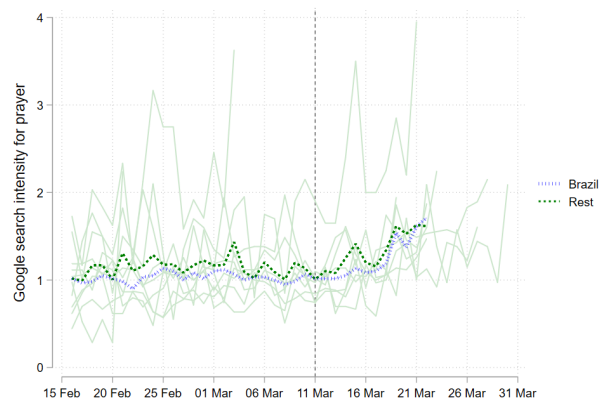
(e) SE Asia
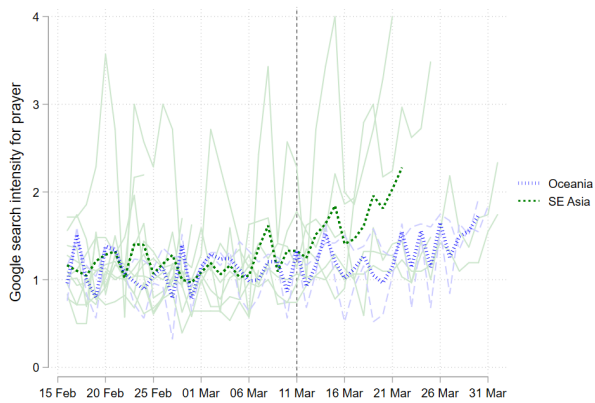
(f) Rest of Asia
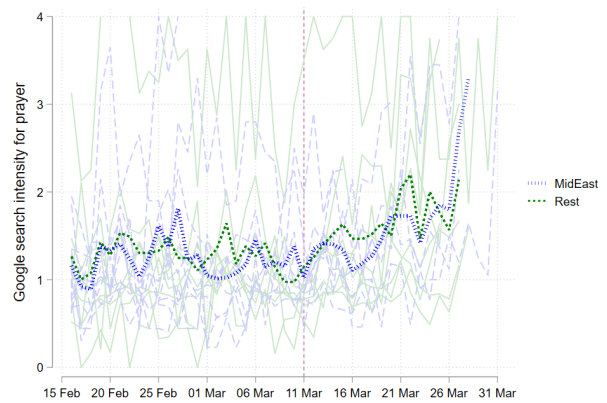
(g) Africa
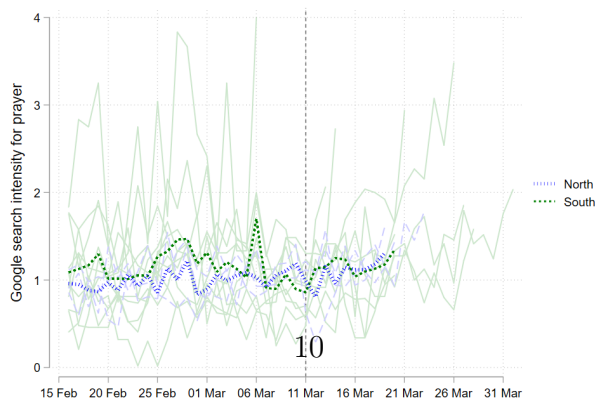
Google searches for prayer as a share of the total number of Google searches on the particular day, set to 1 on February 15 2020. A country drops out of the sample after it reaches its' peak during the period Feb 15 to Apr 1. The searches encompass topics related to prayer, including alternative spellings and languages. The light-coloured lines represent a country. The darker-coloured lines represent the average prayer intensity for the particular group. The countries behind the blue curves are italicized in the following. **Northern Europe**: *Belgium, Denmark, Finland, Netherlands, Norway, Sweden*, Austria, France, Germany, Ireland, Switzerland, United Kingdom. **Southern Europe**: *Italy, Spain*, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Greece, Moldova, Poland, Portugal, Romania, Slovak Republic, Ukraine, Yugoslavia. **North and Middle America**: *Canada, USA*, Costa Rica, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Trinidad and Tobago, **South America**, *Brazil*, Argentina, Bolivia, Chile, Colombia, Ecuador, Paraguay, Peru, Puerto Rico, Uruguay, Venezuela, **SE Asia**: *Australia, New Zealand*, **Rest of Asia**: *Cyprus, Iran, Israel, Jordan, Kuwait, Lebanon, Qatar, Saudi Arabia, Turkey, United Arab Emirates,* Azerbaijan, Bangladesh, Georgia, India, Kazakhstan, Pakistan, Russia, Sri Lanka, **Africa**: *Egypt, Morocco, Tunesia*, Algeria, Angola, Cameroon, Ghana, Ivory Coast, Kenya, Nigeria, South Africa, Tanzania, Uganda, Zambia. See more details in Appendix A.1 and C.

Figure 3: The rise in prayer search shares across the globe in March 2020

(a) Growth rate (%)

(b) Absolute increase
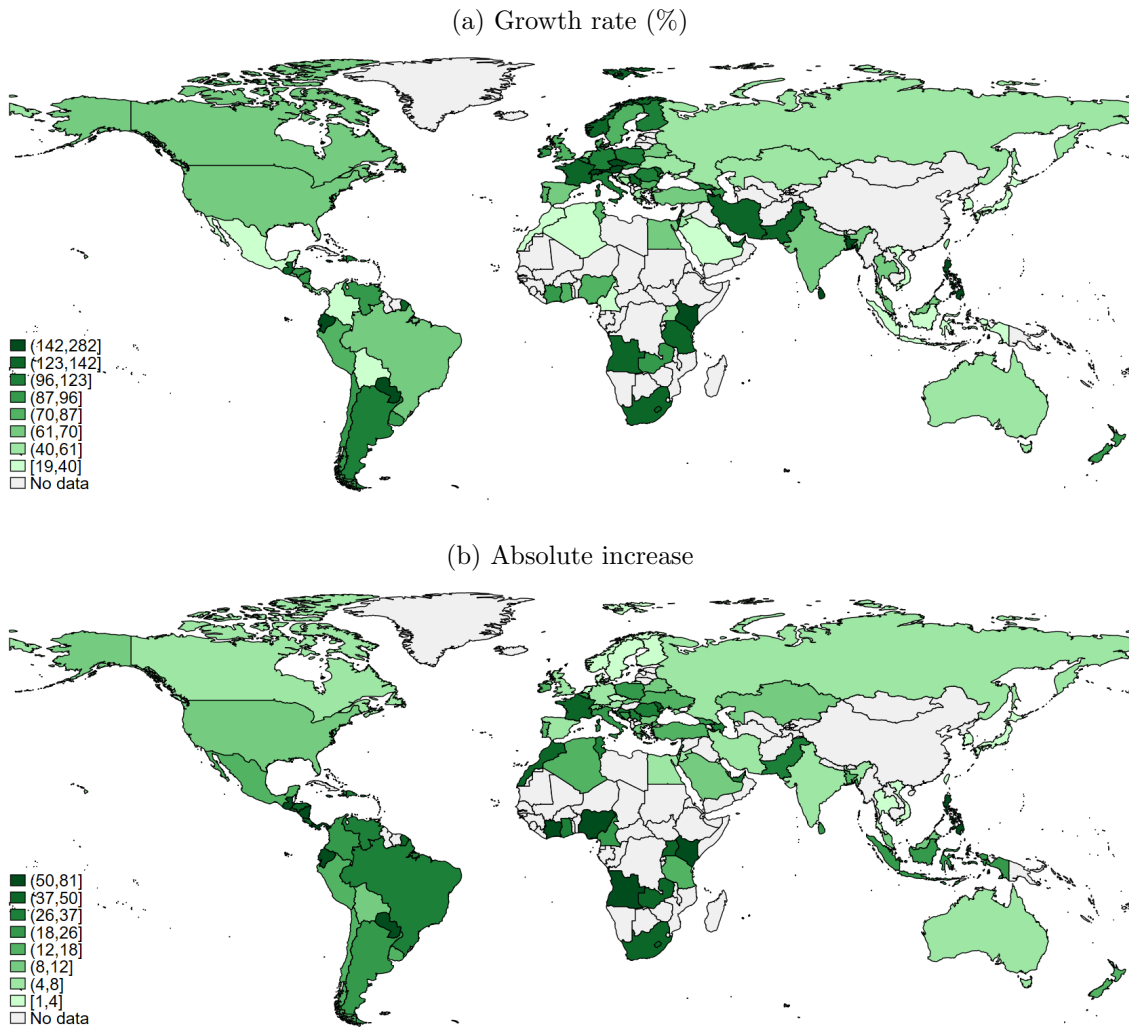
The map shows the rise in Google search shares from February 29 2020 to the highest level reached in March 2020 subtracted the rise in February 2020 in Panel (b). Panel (a) shows the rise as a percentage of the average level during February 2020 (the average rise was 91%, the minimum was 19%, and the maximum was 282%). Panel (b) shows the absolute rise (the average rise was 24, the minimum was 0.5, and the maximum rise was 81 units). Darker green indicates larger rises in prayer search shares. Missing data is indicated with grey. Find more details in Appendix A.1 and C.

Fig. 2 also showed that prayer search intensity rose just after March 11 for most of the fourteen regions, the date when WHO declared the COVID-19 a pandemic. More formally, Appendix B.5 documents that 94 of the 95 countries in the sample experienced significant increases in prayer search shares between January 29 and April 1. For the majority of these countries, the significant rise occurred on March 11 or later.

4.1 Econometric analysis

To identify formally what Figures 1, 2, and 3 showed visually, the following equation was estimated:

$$prayer_{ct} = \beta + \gamma covid19_{ct-1} + \alpha covid19^2_{ct-1} + \delta t_c + \kappa_c + \varepsilon_{ct} \tag{1}$$

where $prayer_{ct}$ measures the number of google searches on prayer in country c on day t as a share of total google searches on the same day for the same country. $covid19_{ct-1}$ captures the exposure to COVID-19 using different measures: A dummy variable, $pandemic$, equal to one on March 11 where WHO declared COVID-19 a pandemic, measures of the total number of registered people infected by COVID-19 and the total number of deaths, a dummy equal to one after the country registered its' first case or death, days since the first case or death, and days since March 11 (cf. Table 1 and Tables A.1-A.3). These variables are lagged a day in the main analysis. Alternative specifications are investigated, such as adding squared terms, aggregating to weekly data (cf. Tables A.1-A.3), and examining growth rates (Section C.4).

t_c is a country-specific time-trend. This variable captures the general upward or downward trend in prayer search shares for each country.[12] κ_c is a list of country fixed effects, ensuring that results are only compared within one country at a time. When the $covid19_{ct-1}$ variable is the pandemic dummy or the first case or death dummy, γ can be interpreted as the average rise in prayer search shares after March 11 or after the first registered case or death, respectively (these are the measures used in Table 1).

While it is theoretically probable that the causality in equation (1) instead runs from religiosity to COVID-19 exposure, this seems a highly unlikely explanation for the results. The increases in prayer search shares documented here are the largest ever recorded. For reverse causality to explain the results, one would have to come up with another explanation for this sudden rise in prayer intensity. Also, the main results are based on the pandemic dummy, which does not suffer from reverse causality or other endogeneity issues, as the WHO announcement was done centrally and thus independent of country-specific conditions.

Table 1 documents the estimates of equation (1), including country-fixed effects and

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[12]This is a generalization of the subtraction of $\Delta prayer_{feb}$ done for Fig. 3 (cf. Appendix C).

country-specific time trends throughout. The model in column (1) of Panel A documents that prayer search shares rose with 5.1 units since March 11. This amounts to 16.9% of the average prayer search shares over the period (30.2, calculated at the bottom of each Panel in Table 1). The model in column (2) adds a measure of the number of days passed since COVID-19 was declared a pandemic. The model documents that prayer search shares continued to rise daily after March 11. After 10 days, prayer search shares had risen by 19.7% of the mean ((2.45+3.5)/30.2), after 20 days 31.3% of the mean. The increase will probably not continue linearly, especially since those who start to access their prayer websites directly without googling them are not captured by the google search shares (analyzed more formally in Tables A.1 and A.2). Only time will show how much further the search shares for prayer will continue to rise.

Columns (3) and (6) document that prayer search share rose after a country registered its' first case or death, but nearly half of this is due to the timing of the pandemic declaration by WHO (columns 3 and 7). Fig. A.1 shows that these results are not caused by a distinct cluster of observations. Instead, the likelihood of rising prayer shares varies very homogenously with the likelihood of having passed March 11 of having registered the first case or death.

Columns (5) and (8) show that prayer search shares rose more after March 11 in countries where the COVID-19 had already arrived. This result is even stronger when restricting the sample to the sample where observations after prayer search shares reached their maximum level are dropped (Table A.2).[13]

In an attempt to circumvent endogeneity issues and issues related to comparison of registered deaths and cases over time and space, the remainder of the analysis will use the pandemic dummy to measure the impact of COVID-19. Panel B of Table 1 splits the sample into the different regions of the world and documents that prayer search shares rose significantly in all regions after March 11. Again, the absolute rise is larger in the Americas and Africa, where the overall search shares for prayer are higher (cf. MeanDepVar at the bottom of the table, which measures the average prayer intensity in that region).

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[13]The regression in column (5) may suffer from multicollinearity and results should be interpreted with care. In particular, the pandemic dummy and the interaction with the case dummy both have vifs of 12, which exceeds the critical value of 10, meaning that all coefficients in this regression may be biased.

Table 1: The impact of COVID-19 on prayer search shares

Dependent variable: Prayer search shares								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A								
Pandemic dummy	5.11***	2.45***		4.77***	2.07		4.49***	3.87***
	(0.752)	(0.762)		(0.752)	(1.835)		(0.795)	(0.839)
Days since Pandemic		0.35***						
		(0.059)						
First case dummy			2.92***	1.62**	1.05			
			(0.848)	(0.764)	(0.750)			
Pandemic x first case dummy					3.16*			
					(1.849)			
First death dummy						3.89***	2.47**	0.34
						(0.960)	(0.968)	(1.532)
Pandemic x first death dummy								2.84*
								(1.677)
R-squared	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Observations	6080	6080	6066	6066	6066	6080	6080	6080
Countries	95	95	95	95	95	95	95	95
MeanDepVar	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2
Panel B	All	N Europe	S Europe	N America	S America	SE Asia	Rest Asia	Africa
Pandemic dummy	5.11***	2.50**	2.87**	7.11***	8.72**	5.14*	4.34***	5.98***
	(0.752)	(0.912)	(1.281)	(2.054)	(3.906)	(2.499)	(1.458)	(1.503)
R-squared	0.84	0.91	0.77	0.73	0.78	0.92	0.63	0.70
Observations	6080	768	960	832	704	768	1152	896
Countries	95	12	15	13	11	12	18	14
MeanDepVar	30.2	10.0	24.5	50.4	40.7	15.5	19.3	53.0

OLS estimates. Units: Days × countries. Period: January 29 to April 1 2020. All regressions include a constant, country-specific time trends, and country fixed effects. The sample includes the full sample in panel A and in column (1) of Panel B, but varies across the remaining columns of panel B: Northern Europe in column (2), Southern Europe (3), North America (4), South America (5), South East Asia and Oceania (6), the rest of Asia (7), and Africa (8). Robust standard errors clustered at the country level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level. Find more details in Appendix A.1.
Result: Prayer intensity increases day-by-day after the WHO announces COVID-19 a pandemic for all regions. The rise is marginally larger in countries where the COVID-19 had physically arrived.

Google searches for prayer may rise for a reason unrelated to religious coping. Since the churches closed down to prevent the disease from spreading, part of the intensified prayer searches may be replacing physical church attendance. Theoretically, we would not expect this to be the main explanation for the rising search shares for prayer, as physical churchgoing belongs to extrinsic religiosity which is not the main type of religiosity used for coping with adversity (Johnson and Spilka, 1991; Pargament, 2001; Bentzen, 2019). Instead, the main type of religiosity used for coping is intrinsic religiosity, which includes private prayer. Surely, the pandemic would most likely have resulted in more churchgoers had the churches been open, just as experienced in the USA after the 9-11 attacks. The theory on religious coping suggests, though, that the rise in private prayer would be larger. In addition, a recent survey reveals that 95% of Americans who pray, pray alone, while only 2% pray collectively in a church (Barna, 2017).

There are also empirical indicators that the rise in searches for prayer is due to religious coping and not merely a shift from physical church to online church (Appendix C.3). First, data on the specific contents of the internet searches reveal that searches for topics related to "internet church" also rise, but compared to the rise in prayer search shares, the increase is

indistinguishable from zero (Fig. A.2). Second, the search shares on prayer continue to rise long after the church closures (Fig. 2). Third, the rise in prayer searches does not only occur on Sundays, where most masses are held. While the rise on Sundays is higher than other days, the search shares rise on all days of the week, except Fridays. Last, the heterogeneity of the rise in prayer searches documented in the next section is consistent with the religious coping theory (the poor and vulnerable pray more).

4.2 Characteristics of those who pray more

While prayer search intensity rose in nearly all countries, this section examines differences in the size of the increase depending on previous religiosity levels, dominating religious denominations, and socio-economic characteristics. This is an estimation of the following equation (see also Tables A.4 - A.7):

$$prayer_{ct} = \beta + \gamma pandemic_{t-1} + \lambda pandemic_{t-1} \times characteristic_c + \delta t_c + \kappa_c + \varepsilon_{ct} \quad (2)$$

where $characteristic_c$ includes different measures of country characteristics: the religiosity level in country c before the onset of the COVID-19 pandemic, a dummy equal to one for the dominating religious denomination, or various socio-economic characteristics. The rise in prayer search shares after March 11 now equals $\gamma + \lambda characteristic_c$. If the rise in prayer search shares after March 11 is larger for the more religious, certain religious denominations, or certain socio-economic characteristics, this is captured by $\lambda > 0$. Apart from the interaction term, the regression is otherwise the same with country-specific time-trends, δt_c and country-fixed effects, κ_c.

Panel (a) of Fig. 4 shows the estimates of equation (2) for different religiosity levels in 2019, measured by the average search shares for prayer in 2019.[14] The results show that prayer search shares rose more in more religious countries. Prayer search shares rose significantly for all levels of previous prayer intensity, but rose more for the countries that prayed more in 2019. For instance, prayer search shares rose more than five times more in the most religious quarter of countries, compared to the least religious. Using alternative measures of religiosity based on questions asked in global surveys conducted well before the COVID-19 pandemic documents that the rise in prayer searches is larger in countries where a larger share of the population reply that they prayed more, went more to church, or answered that God is important in their lives (Tables A.4 - A.6). Also, prayer searches rose significantly even in the 15% least religious countries for most measures of previous religiosity (Table A.4). Among the 10% least religious

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[14]Four dummy variables were constructed based on the quartiles of the prayer search share in 2019. Equation 2 was run for each of them. Each dot in Fig. 4 represents $\gamma + \lambda$ for each of the dummies.

countries, prayer search shares rose significantly only for 4 out of 9 religiosity measures. The 10% least religious countries are the Czech Republic, Denmark, Finland, Germany, Japan, the Netherlands, Norway, Sweden, Taiwan, Thailand, and Vietnam. Thus, Northern European countries, formerly communist countries (that prohibited religion), and Buddhist majority countries that were hit early by COVID-19.

Previous religiosity levels may be endogenous and correlate with various other country-characteristics. To exploit instead exogenous variation in religiosity, panel (b) documents a very similar relation with earthquake risk.[15] Previous research has documented that earthquakes increase religiosity (Bentzen, 2019; Bulbulia, 2004; Belloc et al., 2016) for the same reason that COVID-19 increase religiosity: Religious coping. In line with the results in panel (a), panel (b) shows that prayer search shares rose more in countries with more earthquake risk.

Fig. 4 shows that prayer search intensity rose for Christians (particularly Catholics), Muslims, Hindus, and Buddhists, but insignificantly so for the latter two. The countries are categorized into the major denominations based on there being at least 25% adherents to the particular denomination. The insignificance for Hindus and Buddhists is due to the larger standard errors and to a lesser extent smaller parameter estimates. There are rather few countries in these two groups, which produces larger standard errors. The two only countries defined as Hindu in the sample are India and Trinidad and Tobago, while countries defined as Buddhist are Japan, Sri Lanka, Taiwan, Thailand, and Vietnam. Fig. A.12 documents that global Google searches for god, allah, jesus, mohammad, bible, quran, buddha, vishnu, and shiva also rose in March 2020. For the latter three search terms, though, the rise in March is not larger than other holy events during the year, such as Buddhas birthday or Hindu holidays for Lord Shiva or Lord Vishnu. Thus, while Hindu and Buddhist traditions also use religion for coping, these traditions seem more focused on celebration than coping. Another interpretation of the lower impact among the Buddhist countries is that these countries were hit before the virus was declared a pandemic and they have experienced more pandemics than the rest of the world. Thus, the rise in fear and emotional distress may be lower in these countries.

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[15]The measure is the inverse of the distance to high earthquake risk zones, as used in Bentzen (2019).

Figure 4: The rise in prayer search shares for different religiosity and denominations

(a) Prayer search shares in 2019
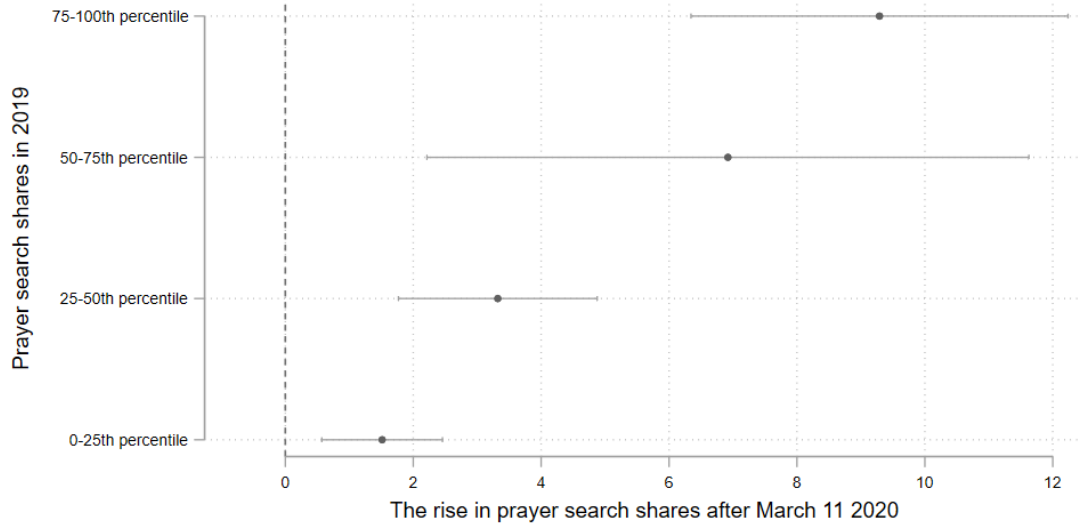
(b) Earthquake risk

Figure 4: cont. The rise in prayer search shares for different religiosity and denominations

(c) Religious denominations

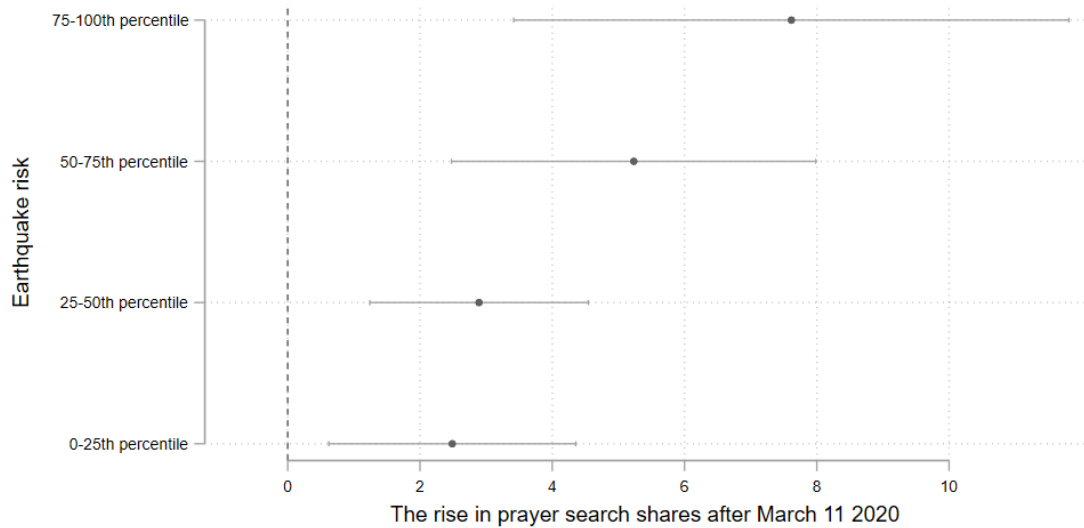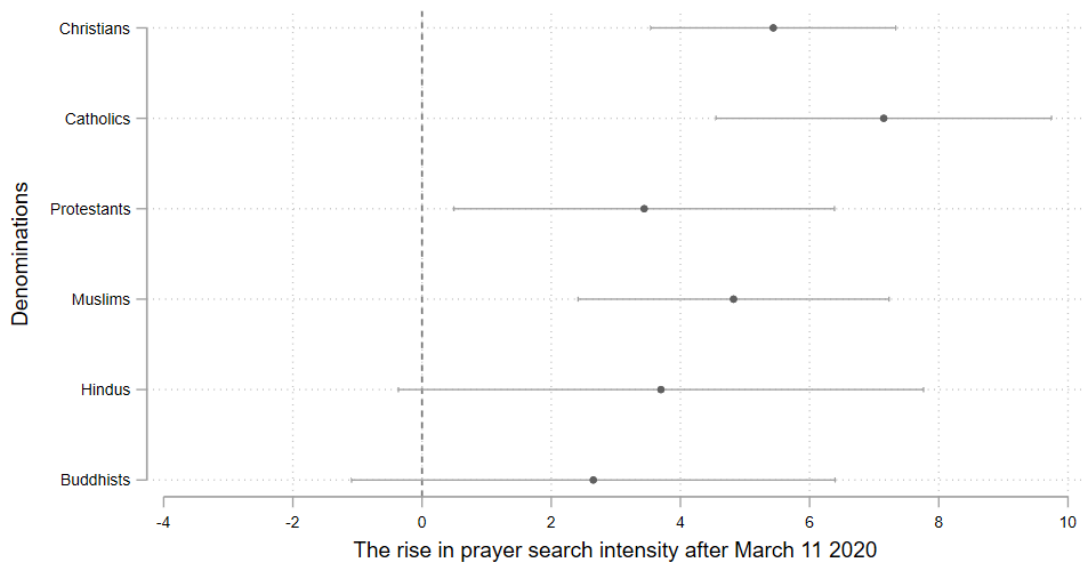The rise in prayer intensity for different prayer search shares in 2019 in panel (a), different earthquake risk intensities in panel (b), divided into quartiles, and different major religious denominations in panel (c). Each dot represents the estimate of the rise in prayer search shares after March 11 in an OLS regression, where the rise in prayer search shares is allowed to vary with initial religiosity levels in panels (a) and (b) and with religious denominations in panel (c), controlling for country-specific time trends and country fixed effects. The denominations are defined based on there being at least 25% adherents of the particular denomination in a country. The horizontal lines represent the 95% confidence bounds. See more details in Appendix A.1 and C.2.

Result: Prayer intensity rose at all levels of previous religiosity and major religious denominations, but more in more religious countries and not significantly in Hindu and Buddhist societies.

Research argues that religion provides a sense of existential security, which is most needed among vulnerable populations, especially those living in poorer nations, facing personal survival-threatening risks (Norris and Inglehart, 2011). One could therefore expect that religion is used more extensively to cope with the COVID-19 pandemic in poorer, more unequal, and more insecure states (Norris and Inglehart, 2011). Table 2 investigates whether this is also the case for the COVID-19 pandemic, using different measures of economic development, inequality, and mortality measures.

The simple model in Panel A of Table 2 documents that prayer search shares rose more in poorer, more unequal, and more insecure countries. Prayer searches rose more in poorer countries, where development is defined by the share of people living below 1.9US$ a day (col 1), GDP per capita (col 2), the Human Development Index, which is an alternative measure of general well-being of a country (col 3), more unequal countries, where inequality is measured by the Gini coefficient of the degree of economic inequality (col 4) and a measure of the degree to which economic development is unevenly distributed (col 5), more fragile states (col 6), and in states with larger demographic pressures (col 7) or higher mortality rates (col 8).

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Panel B documents, though, that these effects are due to poorer and more insecure countries being more religious: When adding an interaction term with religiosity (measured by average prayer search shares in 2019), all of the mentioned effects turn insignificant.[16] The only significant variable is the interaction between the pandemic dummy and the prayer search shares in 2019: Religious countries are more likely to search for prayer on the internet in the face of COVID-19. The same results are found using other measures of religiosity based on surveys (Table A.7). However, these societies may be more religious because they are poor, unequal, and uncertain and thus some of the impact of the socio-economic confounders may work through religiosity. To account for this, Panel C exploits the exogenous variation in religiosity due to earthquake risk and instruments the interaction between the pandemic dummy and prayer search shares in 2019 with an interaction between the pandemic dummy and earthquake risk. The First stage F statistic is above 10 in most specifications, which means that the instrument is valid.[17] The results confirm that the heterogeneity with respect to the socio-economic characteristics is due to the fact that poorer, more unequal and insecure countries are also more religious.

This means that prayer shares rose in all countries, independent of their economic status, whether or not they are unequal, fragile or more mortal. The only thing that matters for whether people use religion for coping or not is how religious they are to start. That religion is not used more for coping in poor and uncertain societies may be because these populations do not feel more emotional distress when faced with COVID-19 compared to richer countries. One observation speaks for this explanation: COVID-19 arrived earlier in Western societies and thus the initial fear may have been larger in these societies. Alternatively, the availability of religion as a coping tool may be more important than the need for such a tool. Either way, the finding is consistent with previous research documenting that people use religion to cope with natural disasters at all levels of income and education (Bentzen, 2019). On a more technical note, studies documenting differential effects of religious coping for poor and insecure societies should be aware that these differential effects could be simply a result of higher religiosity levels in these societies. This matters for the conclusion whether people use religion for coping more because they need it or simply because they can. Here, COVID-19 generates a need for emotional coping, and societies use religion to cope, independent on whether they are rich or poor, uncertain or secure.

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[16]This is not due to multicollinearity: The Variance Inflation Factor for the three main variables in Panel B is well below the critical value of 10 in all columns.

[17]The exclusion restrictions are rather unlikely to be violated: It is unlikely that earthquake risk influences the rise in prayer search shares after March 11 2020 through other channels (apart from previous religiosity levels) that are not already included in the regression.

Table 2: The rise in prayer search shares across country characteristics

Dependent variable: Prayer								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: OLS	Poverty	GDP	HDI	Gini	Uneven	Fragile	Demography	Mortality
Pandemic dummy	5.34***	18.4***	13.0***	-4.45	0.34	1.76	1.08	2.91**
	(0.948)	(5.096)	(2.981)	(3.525)	(1.516)	(1.159)	(1.187)	(1.139)
Pandemic x Variable	0.32***	-1.48***	-11.0***	0.25**	0.95***	0.057**	0.86***	0.018**
	(0.083)	(0.519)	(3.602)	(0.100)	(0.355)	(0.024)	(0.280)	(0.008)
R-squared	0.85	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Observations	4544	6016	5888	5248	5824	5824	5824	5888
Countries	71	94	92	82	91	91	91	92
Panel B: OLS								
Pandemic dummy	1.68*	4.21	0.48	-2.16	1.08	1.73	0.40	1.67
	(0.951)	(5.310)	(3.630)	(3.588)	(1.460)	(1.085)	(1.125)	(1.046)
Pandemic x Variable	0.040	-0.29	0.94	0.11	0.080	-0.0081	0.28	-0.0046
	(0.158)	(0.518)	(4.113)	(0.115)	(0.460)	(0.027)	(0.318)	(0.012)
Pandemic x Prayer 2019	0.16***	0.14***	0.15***	0.12***	0.14***	0.15***	0.13***	0.16***
	(0.052)	(0.037)	(0.041)	(0.042)	(0.049)	(0.041)	(0.040)	(0.046)
R-squared	0.85	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Observations	4544	6016	5888	5248	5824	5824	5824	5888
Countries	71	94	92	82	91	91	91	92
Panel C: IV								
Pandemic dummy	-1.75	-7.39	-4.84	-3.21	-0.0036	-0.050	-2.47	-2.04
	(1.760)	(8.748)	(7.607)	(3.659)	(1.693)	(1.443)	(1.659)	(1.623)
Pandemic x Variable	0.20	0.56	3.83	0.075	-0.66	-0.060	0.46	0.0052
	(0.281)	(0.796)	(7.728)	(0.114)	(0.868)	(0.049)	(0.373)	(0.013)
Pandemic x Prayer 2019	0.31***	0.32***	0.31***	0.24**	0.36**	0.38***	0.24**	0.28***
	(0.118)	(0.102)	(0.113)	(0.093)	(0.154)	(0.131)	(0.095)	(0.094)
R-squared	0.88	0.87	0.87	0.89	0.87	0.87	0.87	0.87
Observations	3456	4352	4352	3904	4352	4352	4352	4416
Countries	54	68	68	61	68	68	68	69
FirstStageF	14.9	12.2	11.1	12.0	7.17	8.62	14.2	21.3

OLS estimates. Units: Days × countries. Period: January 29 to April 1 2020. All regressions include a constant, country-specific time trends, and country fixed effects. Panel A includes an interaction between the Pandemic dummy and various socio-economic variables described in the text and in Appendix A.4. Panel B includes also an interaction between the Pandemic dummy and prayer search shares in 2019. Panel C instruments the interaction between prayer search shares in 2019 and the pandemic dummy with an interaction between earthquake risk and the pandemic dummy. In panel C, the sample is restricted to countries within 1500 km of high-risk earthquake zones. The scalar FirstStageF is the Kleibergen Paap first stage F statistic. Robust standard errors clustered at the country level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level. See more details in Appendix A.1 and C.2.

Result: Prayer search shares rose more in poor, unequal, and insecure countries. But this is exclusively because these societies are more religious.

5 The relative size of the rise in prayer

To get a sense of the relative size of the rise in prayer, the following back of the envelope calculation was made. The factor that matters most for the difference in the size of the rise in prayer is existing religiosity in each country. Combining this finding with results from a Pew Research Center survey from March 2020 showing that 55% of Americans had prayed to end the coronavirus (Pew, 2020b), we can back out the global average rise in prayer related to COVID-19. The average religiosity across all religiosity measures used in the analysis (cf Table A.4), weighted with the population size in each country yields the number 0.654 (with a standard deviation of 0.19).[18] The religiosity level in the US is 0.671. A back of the envelope estimate of the share of the people in the sample that prayed for the coronavirus is therefore very close to 55%.[19] The sample of 95 countries represents 68% of the world population[20] and the average religiosity level in the sample is no different from the average in the countries outside the sample with information on the survey-based religiosity measures.[21] Thus, the back of the envelope exercise shows that more than half of the world population have prayed to end the coronavirus. This large number is reconcilable with the finding that the rise in Google searches for prayer is larger than searches for the topic takeaway and amounts to 12% the rise in searches for Netflix, and 26% the fall in searches for flights, which all changed tremendously in the month of March 2020, where most of the world's countries were in lock down (cf Appendix B.4).

6 Conclusion

Google searches on prayer provides a measure of the interest in prayer in real time. In March 2020, Google searches for prayer rose to the highest level ever recorded. This indicates an increased interest in prayer in the midst of the COVID-19 pandemic. A back-of-the-envelope calculation shows that more than half of the world's population have prayed to end the coronavirus. This increased interest in prayer occurs on all continents and for all religious denominations, but less for Buddhists and Hindus.

The rising prayer intensity is a result of religious coping: When faced with uncertainty and adversity, humans have a tendency to use religion for comfort and explanation. The results thus reveal that many people from across the globe experience emotional distress in the face of the COVID-19 pandemic, and they use religion to cope. The use of religion for coping is

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[18]All religiosity measures were scaled between 0 and 1.

[19]The share of Catholics in the US is 23%, close to the global average of 17%, but the share of Protestants is 48.9%, much higher than the global average of 12%. Since the rise in prayer shares for Protestants is lower than both Catholics and Muslims, the estimate is conservative.

[20]5.15 bio. / 7.55 bio. people

[21]On average, 21 countries outside the sample have information on the survey based religiosity measures.

logically stronger for more religious societies, although the less religious also engage in religious coping. The use of religion is more pervasive in poorer, more unequal, and uncertain societies, but this is exclusively because these societies are more religious.

The emotional distress caused by COVID-19 may influence the economy on the short term through reduced spending, but a potential strengthened role of religion may also impact economies on the longer term. At this point in time, we can only guess whether religiosity and the role of religion will rise more permanently. Previous research found that natural disasters leave a long-lasting impact on religiosity, which is passed on through generations (Bentzen, 2019). Whether the COVID-19 pandemic will have similar long-term effects is yet to be seen. Furthermore, if the COVID-19 pandemic can have such a dramatic impact on one of the deepest rooted of human behaviors, what else can it influence?

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Appendix

A Data

A.1 Google searches for prayer and other religious terms

Google Trends provides access to a sample of actual search requests made on Google. It is anonymized (no one is personally identified), categorized (determining the topic for a search query) and aggregated (grouped together). The Google Trends data thus displays interest in a particular topic from around the globe. The data is available back to 2004, but there was a trend break on Jan 1 2016, where the data was improved. The data is downloadable from google.trends.

Google Trends normalizes the search data in the following way: 1) Each data point is divided by the total searches of the geography and time range it represents to compare relative popularity, 2) The resulting numbers are then scaled on a range of 0 to 100 based on a topic's proportion of all Google searches.

Google Trends filters out some types of searches: 1) Searches made by very few people: Google Trends only shows data for popular terms, so search terms with low volume appear as "0". 2) Duplicate searches: Google Trends eliminates repeated searches from the same person over a short period of time. 3) Special characters: Google Trends filters out queries with apostrophes and other special characters.

Google Trends provides two methods of accessing what people search for. *Search terms* show matches for all terms in a query, in the language given. If you search the term "prayer," results include terms like "prayer" or "coronavirus prayer". If you specify "coronavirus prayer," results include searches for "coronavirus prayer," as well as "prayer for coronavirus". *Topics* are a group of terms that share the same concept in any language. If you search the topic "London," results include topics such as "Capital of the UK" or "Londres," which is "London" in Spanish.

Google Trends provides two types of data: Time-series data and cross-section data. The time-series data is available for one a country at a time or as an average for the world. The cross-section data is available for countries or subnational regions as an average over a specified period of time.[22] For the time-series data, Google Trends normalized the search shares to equal 100 for the highest search share during the period for each country. For the cross-country data, the search share was set to 100 for the country with the highest search shares in the sample. This means that only the growth rates, and not the levels, of the time-

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[22]The current analysis uses countries instead of subnational regions, as no time-series data exist for the regions.

series data have a meaningful interpretation and can be compared across countries. For the cross-country data, the levels *can* be compared across countries. The analysis includes country fixed effects throughout and thus does not compare countries, but in Section C.2 I identify the characteristics of the countries who pray more, which means that comparison across countries occurs. To construct a panel dataset, I combined the growth rates from the time-series data with the levels from the cross-section data. For each country, I downloaded the average prayer search shares for 2019 based on the cross-section data, set this to the search share on January 29 2020, and calculate the search shares for the rest of the period based on the growth rates from the time-series data.[23]

The data used throughout this paper are based on time-series data with searches for the topic "prayer". This means that the data is independent of languages and includes all searches related to the topic "prayer". The main data includes search shares for prayer during the period January 29 to April 1 2020. The period starts well in advance of the onset of COVID-19 as a pandemic and before the onset of Easter and the Ramadan, where prayer search shares may rise for reasons other than the COVID-19.

Some fluctuations in the data are too extreme to represent real fluctuations in the interest on prayer. Fluctuations are defined as "too extreme" when prayer search shares spike up (or down) on one day with more than 25 percentage points, only to fall down (or rise) again with 25 percentage points or more on the following day. For the data behind all Figures and Tables, except Figure 1, these extreme fluctuations were cut in half. Figure 1 shows the raw data from Google Trends. Single-day spikes that last more than one day are not affected by this correction, but were kept unchanged throughout. The correction affects 7.6% of the data, which includes mainly a few countries that each have many such extreme fluctuations. The countries with most of these extreme fluctuations are Tanzania, Qatar, and Finland with 22, 19, and 16, days, respectively with these extreme fluctuations out of a total of 61 days in the sample. These corrections matter mainly for the visual presentation of the results in Fig. 2. The econometric analyses would treat these fluctuations in the data as noise, which would enter the error term and produce slightly larger standard errors on the parameters estimated. Since standard errors throughout are quite small, this does not change the econometric results in any important way.

There are 99 countries with both time-series data for Google searches on prayer, $prayer_{ct}$ and globally comparable prayer search shares for 2019, $averageprayer2019_c$. Four of these are small islands or countries with many large fluctuations in the search share data: Martinique,

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[23]For instance, the average prayer search share in 2019 was 3 for Denmark, while that in Morocco was 87. I therefore set the prayer search share on January 29 to 3 in Denmark and 87 in Morocco. From January 29 to 30, prayer search shares rose by 68% in Denmark and by 6% in Morocco. The prayer search share on January 30 2020 therefore amounts to 5.1 in Denmark and 92.4 in Morocco, and so forth.

Mauritius, Reunion, and Senegal. These four countries were excluded from the dataset, meaning that the final dataset on prayer search shares includes 95 countries, listed in the notes for Figure 2.

The main period of analysis is January 29 to April 1 2020. The data thus ends one week before the onset of Easter and three weeks before the onset of the Ramadan, where search shares for prayer rise for other reasons that the COVID-19. January 29 was chosen to get as large a pre-period as possible, but still be able to zoom in on the COVID-19 pandemic. Some of the figures show longer periods.

A.2 Measures of the impact of COVID-19

Data on affected cases and deaths by the COVID-19 for the globe are provided by the European Centre for Disease Prevention and Control (ECDC). The data is available on a daily basis since December 31 2019 for all countries that were affected by the COVID-19. The main measure of cases measures the total number of registered people infected by the COVID-19. The variable does not account for who had recovered again, which means that the variable can only increase with time. Likewise, deaths by COVID-19 measures the total number of registered deaths by COVID-19. These two measures are both dependent on the extent of testing being done in the particular countries. Testing strategies vary across countries in terms of how much they test, both before and after death.

Pandemic dummy is a dummy equal to one after March 11 when the WHO declared COVID-19 a pandemic, and zero otherwise.

Days since Pandemic measures the number of days passed since March 11. The variable is equal to zero on March 11 and before.

First case dummy is a dummy equal to one after the country had its' first registered case of COVID-19, zero otherwise.

First death dummy is a dummy equal to one after the country had its' first registered death by COVID-19, zero otherwise.

Days since first case measures the days passed since the country had its' first registered case of COVID-19. The variable is equal to zero before that.

Days since first death measures the days passed since the country had its' first registered death by COVID-19. The variable is equal to zero before that.

A.3 Previous levels of religiosity

The analysis includes the following measures of religiosity before COVID-19. These are used mainly in Fig. 4 and Tables A.4, A.5 and A.6:

Prayer 2019: Average Google searches for prayer as a share of total Google searches from

January 1 2019 to December 31 2019.

The remaining measures of religiosity in Table A.4 are based on answers to questions asked by the World Values Survey and European Values Study. These are surveys distributed to a total of 505,000 individuals across the globe over the period 1981-2014. The two surveys ask the same questions and the responses are therefore comparable.

Moments of prayer: The share of respondents in a country who answered yes to the question "Do you take some moments of prayer, meditation or contemplation or something like that?".

Ever prayed: This variable is based on the question "Apart from weddings and funerals, about how often do you pray these days?" Respondents can answer "More than once a week", "Once a week", "Once a month", "Only on special holy days", "Once a year", "Less often", or "Never, practically never". The variable "Ever prayed" measures the share of respondents in a country who answered anything but "Never, practically never". This variable was only asked in Muslim countries.

Weekly pray: The share of respondents in a country who answered "More than once a week" or "Once a week" to the above question.

God: This variable is based on the question "How important is God in your life? Please use this scale to indicate. 10 means "very important" and 1 means "not at all important". The variable "God" measures the share of respondents in a country who answered anything but "not at all important".

Very God: The share of respondents in a country who answered "very important" to the above question.

Ever church: This variable is based on the question "Apart from weddings and funerals, about how often do you attend religious services these days?" Respondents can answer "More than once a week", "Once a week", "Once a month", "Only on special holy days", "Once a year", "Less often", or "Never, practically never". The variable "Ever church" measures the share of respondents in a country who answered anything but "Never, practically never".

Weekly church: The share of respondents in a country who answered "More than once a week" or "Once a week" to the above question.

Earthquake risk: This variable is the inverse of the distance to the highest earthquake risk zones. Data on earthquake risk zones are provided by the United Nations Environmental Programme as part of the Global Resource Information Database (UNEP/GRID), who divided earthquake risk into five categories based on various parameters such as ground acceleration, duration of earthquakes, subsoil effects and historical earthquake reports. High risk earthquake zones are defined by Bentzen (2019) as zones 3 or 4. The reasoning for using distances instead of the average of earthquake risk zones is that the measure is meant to provide exogenous

variation in religiosity. The impact of earthquake risk on religiosity is psychological and the use of religion for coping can be strong in areas close to high-risk zones, even though these areas face low risk of earthquakes (Bentzen, 2019). Therefore, distances are more relevant than averages across the earthquake risk zones. When using this measure, the sample is restricted to countries within at least 1500 km of a high-risk earthquake zone.

A.4 Data on economic and political uncertainty

The variables in Table 2 are chosen from a comprehensive dataset provided by the Quality of Government Institute (Teorell et al., 2020), which gathers data from various studies on the quality of government and related matters. The search was limited to variables available for at least 70 of the countries in the main sample.

Fragile States Index produced by Haken et al. (2019), 2016 at The Fund for Peace (http://ffp.statesindex.org/) measures the pressures on states, their vulnerability to internal conflict, and societal deterioration. The index is based on twelve primary social, economic and political indicators (each split into an average of 14 sub-indicators). For each indicator, the ratings are placed on a scale of 0 to 10, with 0 being the lowest intensity (most stable) and 10 being the highest intensity (least stable). Table 2 shows results using the index, but also some of the subcomponents of the index: 1) **Economic Decline Indicator** considers factors related to economic decline within a country. For example, the indicator includes patterns of progressive economic decline of the society as a whole as measured by per capita income, Gross National Product, unemployment rates, inflation, productivity, debt, poverty levels, or business failures. 2) **Security** includes measures related to internal conflict, small arms proliferation, riots and protests, fatalities from conflict, military coups, rebel activity, bombings, and political prisoners. The measure increases as security deteriorates. 3) **Service** includes measures related to policing, criminality, education provision, literacy, water and sanitation, infrastructure, quality healthcare, telephony, internet access, energy reliability, roads. The measure increases as public service deteriorates. 4) **Uneven Economic Development** measures the extent to which economic development is unevenly distributed. Includes measures related to the GINI coeffcient, income share of highest 10%, income share of lowest 10%, urban-rural service distribution, access to improved services, and slum population. 5) **Demography** includes measures related to natural disasters, disease, environment, pollution, food scarcity, malnutrition, water scarcity, population growth, youth bulge, mortality.

Poor measures the poverty gap at Purchasing Parity Adjusted 1.9US$ a day, 2011, measured by the World Development Indicators.

GDP per capita measures the logarithm of real PPP adjusted GDP per capita in 2000, provided by the Penn World Tables.

Human Development Index measures the Human Development Index in 2010 from the U.N Human Development Report.

Gini is a dummy equal to one if the average Gini coefficient over the period 1991 to 2010 exceeded the median level. The Gini coefficient measures the degree of economic inequality.

Mortality measures the adult mortality rate per 1000 population, provided by the World Health Organization.

Table A.4 documents the summary statistics for the included variables.

Table A.1: Summary statistics

Variable	Mean	Std. Dev.	N
Google search share for prayer	30.17	26.383	6080
Growth rate in prayer search shares	0.172	1.691	6080
Pandemic dummy	0.328	0.47	6080
Case dummy	0.545	0.498	6080
Death dummy	0.219	0.413	6080
Average prayer search share 2019	26.158	20.03	6080
Earthquake risk	0.812	0.231	4864
Moments of prayer	0.732	0.188	4096
Ever prayed	0.828	0.174	2880
Pray weekly	0.589	0.261	2880
God important	0.917	0.096	5056
God very important	0.559	0.301	5056
Ever went to church	0.783	0.162	4992
Go to church weekly	0.339	0.23	4992
Fraction Christians	0.604	0.363	6080
Fraction protestants 2000	0.113	0.19	6080
Fraction catholics 2000	0.349	0.357	6080
Fraction Muslims	0.207	0.33	6080
Fraction Hindu	0.017	0.08	6080
Fraction Buddhist	0.038	0.137	6080
Poverty gap at 1.95USD a day	1.734	4.214	4544
GDP per capita 2000 (PPP)	8.987	1.161	6016
Human Development Index	0.712	0.145	5888
Avg gini 1991-2010	39.69	9.325	5248
Uneven Economic Development	5.188	2.08	5824
Fragile States Index	61.489	23.619	5824
Demographic Pressure	4.884	2.234	5824
Adult mortality rate	130.359	73.039	5888

B   Google searches

B.1   Correlation between Google searches and surveys

Fig. A.3 shows the correlation between average Google search shares for prayer in 2019 and the share of survey respondents who replied that they pray weekly in paneæs (a) and (c) and the share of respondents who replied that they take moments of prayer, meditation, and contemplation. Panels (a) and (b) show the raw correlation, while panels (c) and (d) removes variation across continents (i.e. a regression of Google searches for prayer on the particular survey measure and a list of continent dummies). The correlation is high and significant and substantiates that Google searches capture real prayer intensity stated in surveys.

Figure A.1: Relation between survey answers on prayer and Google search shares for prayer

(a) Share praying weekly

coef = 44.210923, (robust) se = 1.4936103, t = 29.6

(b) Share taking moments of prayer

coef = 53.378672, (robust) se = 1.443248, t = 36.99

(c) Including continent fixed effects

coef = 25.360789, (robust) se = 1.455563, t = 17.42

(d) Including continent fixed effects

coef = 37.674624, (robust) se = 1.3357081, t = 28.21
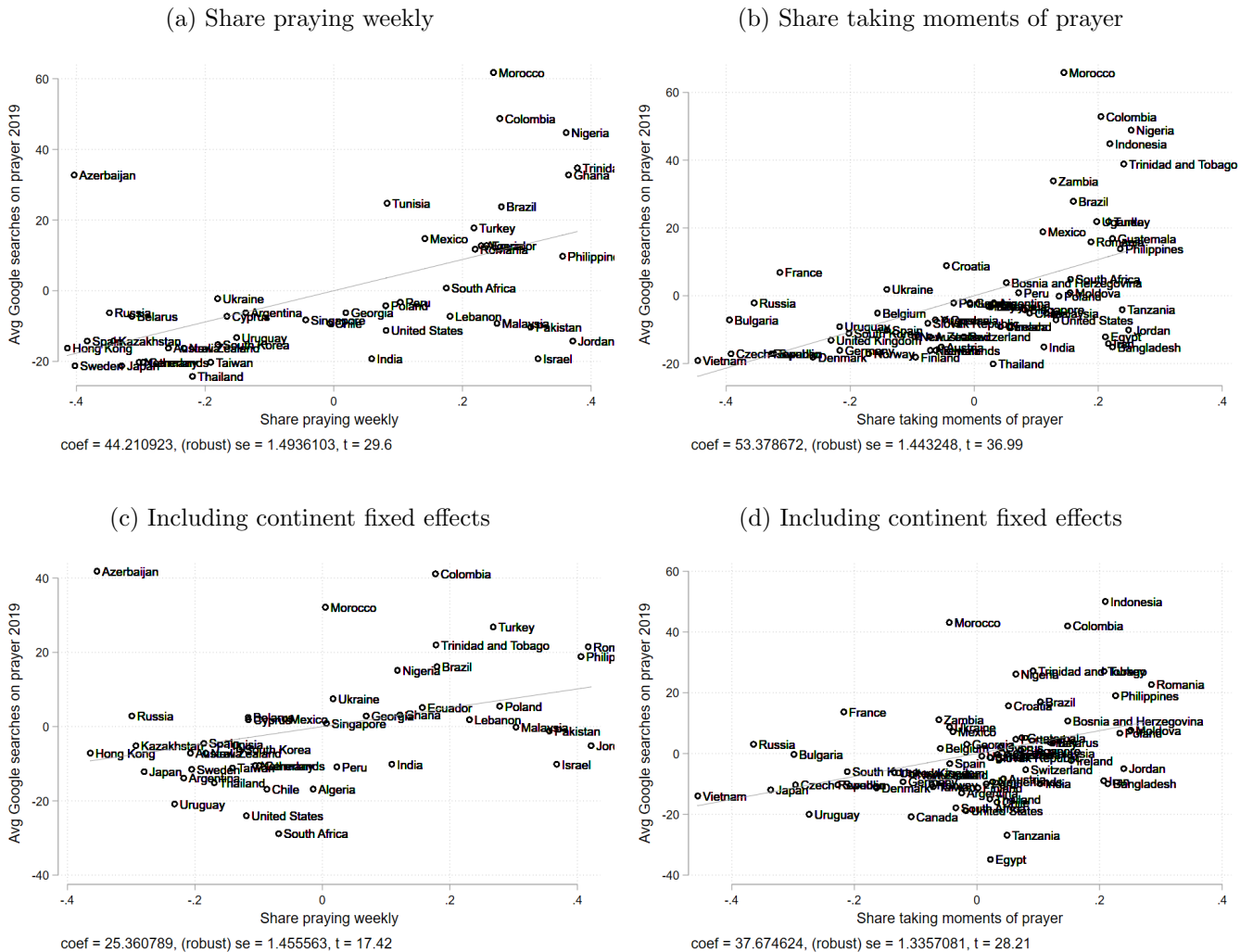
Correlation between the share of Google searches for prayer in 2019 and the share of survey respondents answering that they pray weekly in panels (a) and (c) and the share of survey respondents answering that they take moments of prayer, meditation, and contemplation in panels (b) and (d). Panels (a) and (b) depict the raw correlation, while panels (c) and (d) depict the correlation after controlling for continent fixed effects. The measures are described in Section A

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B.2 Contents of Google searches for prayer

Fig. A.2 documents the development in the specific Google searches that contributed to the most to the rise in searches for the prayer topic. For each topic, Google Trends provides information on the top-25 search terms and the top-25 rising search terms. The combination of the two lists provides a list of search terms that are both large in levels and rising over the period. Four main search terms dominate the global pattern in searches for the topic "prayer". Fig. A.2 shows the development over time in these search terms. The "Pray for Italy" trend swept across the globe in March 2020 as Italy was the first country outside Asia affected by the COVID-19 virus. Spiritual Communion is a Christian practice of desiring union with Jesus Christ. Searches for spiritual communion spike every Sunday, particularly after March 11 and are examples that some Google searches for prayer are replacing physical church attendance.

The map in Fig. A.3 shows the global spread in Google searches for "pray for italy". The map illustrates that searches that are specific to the situation in one country can surge in other countries, even far from the country in question.

Figure A.2: Top search terms within the topic "Prayer"
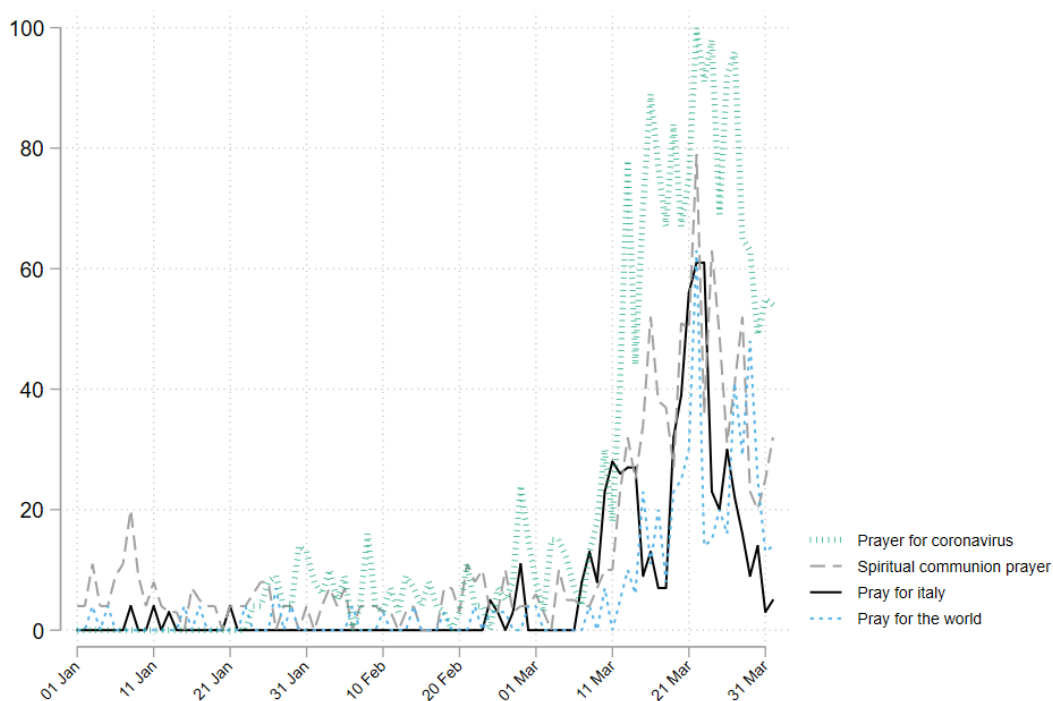
The three spikes in the search terms for "Spiritual communion prayer" are Sundays. Searches for "prayer for coronavirus" includes searches for "prayer for COVID-19".

Figure A.3: Geographic spread of searches for "pray for italy" March 5-30 2020
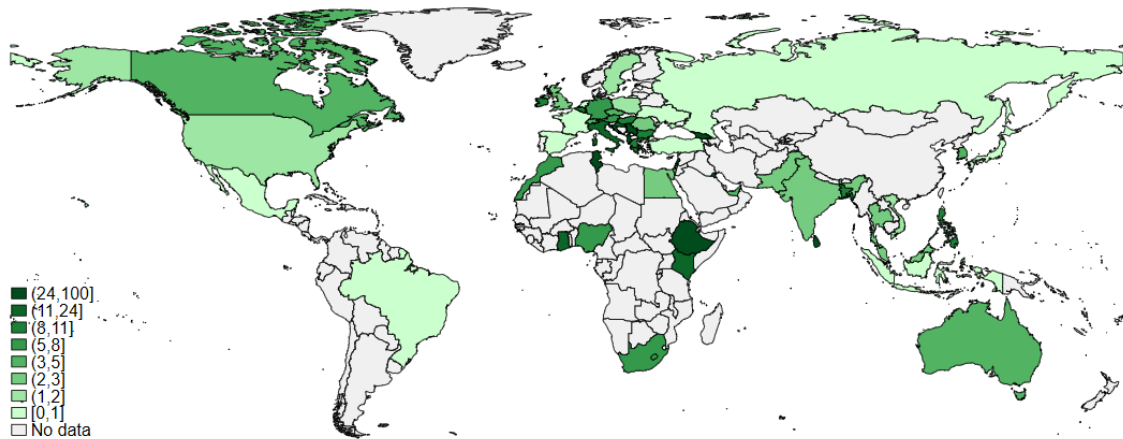
B.3 Examples of prayer websites

Figures A.4 , A.5, A.6, and A.7 show screenshots of websites that one encounters when googling "coronavirus prayer". The websites contain instructions on how to pray as well as specific prayer texts.

Figure A.4: Example of a guide to a coronavirus prayer

The website of 24/7 Prayer: https://www.24-7prayer.com/60-minute-coronavirus-prayer

Figure A.5: Example of a coronavirus prayer

Pray for people who are infected with COVID-19 or facing quarantine.

Jesus, during Your ministry on Earth You showed Your power and caring by healing people of all ages and stations of life from physical, mental, and spiritual ailments. Be present now to people who need Your loving touch because of COVID-19. May they feel Your power of healing through the care of doctors and nurses.

Take away the fear, anxiety, and feelings of isolation from people receiving treatment or under quarantine. Give them a sense of purpose in pursuing health and protecting others from exposure to the disease. Protect their families and friends and bring peace to all who love them.

The website of World Vision: https://www.worldvision.org/disaster-relief-news-stories/prayers-people-affected-new-coronavirus

Figure A.6: Example of website with COVID-19 prayers

THE CHURCH OF ENGLAND
A CHRISTIAN PRESENCE IN EVERY COMMUNITY

SEARCH THIS SITE

OUR FAITH   LIFE EVENTS   FAITH IN ACTION   PRAYER AND WORSHIP   ABOUT   SAFEGUARDING

Coronavirus (COVID-19) liturgy and prayer resources

▼ Media Centre

▼ Coronavirus (COVID-19) guidance for parishes

PRAYERS ABOUT THE OUTBREAK   PRAYERS WITH CHILDREN

PERSONAL PRAYERS   WORSHIP AT HOME

The website of the Church of England: https://www.churchofengland.org/more/media-centre/coronavirus-covid-19-liturgy-and-prayer-resources

Figure A.7: Example of website with list of COVID-19 prayers
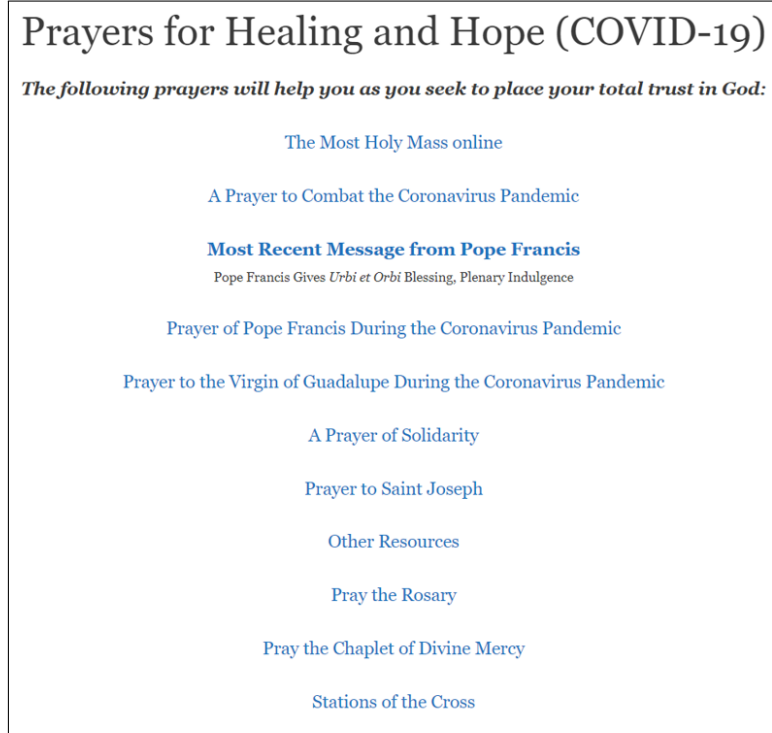
B.4 The relative size of the increase

Fig. A.8 shows the increase in Google searches for prayer relative to searches for other topics that rose during the COVID-19 pandemic. The purpose is to illustrate the relative size of the rise in prayer searches. The COVID-19 pandemic resulted in massive lock downs and quarantines across the globe, meaning that people were at home and not allowed to go out. In addition, most international air traffic was shut down.

Fig. A.8 shows that searches for topics related to take-out and Netflix rose during the month of March 2020, while searches for flights fell. The volume of searches for prayer was higher than searches for takeaway (by a factor 4.8), but lower than searches for Netflix (25%) and flights (28%). Like prayer, the Google searches for take-out, Netflix, and flights encompass all searches for topics related to these in all languages.

The relative sizes of the increases in the searches are calculated using the following formula for Netflix and take-out:

$$\frac{\Delta prayer}{\Delta other} = \frac{maxprayer_{mar} - avgprayer_{feb}}{maxother_{mar} - avgother_{feb}} \tag{3}$$

where $maxprayer_{mar}$ is the maximum level of search shares for prayer reached during the month of March 2020 and $maxother_{mar}$ is the maximum level of search shares for either Netflix or Take-Out reached during the month of March 2020. $avgprayer_{feb}$ is the average

level of search shares for prayer during February 2020 and $avgother_{feb}$ is the average level of search shares for Netflix or take-out during February 2020.

Instead of $maxother_{mar}$, the calculation for flights included the $minother_{mar}$, which is the minimum level of search shares for flights reached during the month of March 2020. This way, the spike in searches for flight in early March does not influence the calculation. This surge may be due to people anticipating a change in rules for flight traffic.

Searches for prayer rose by 134% the rise in Google searches for take-out, by 12% the rise in searches for Netflix, and by 26% the fall in searches for flights.

Figure A.8: Google searches for other terms affected by COVID-19

(a) Take-out

(b) Prayer and take-out

(c) Prayer and Netflix

(d) Prayer and flight
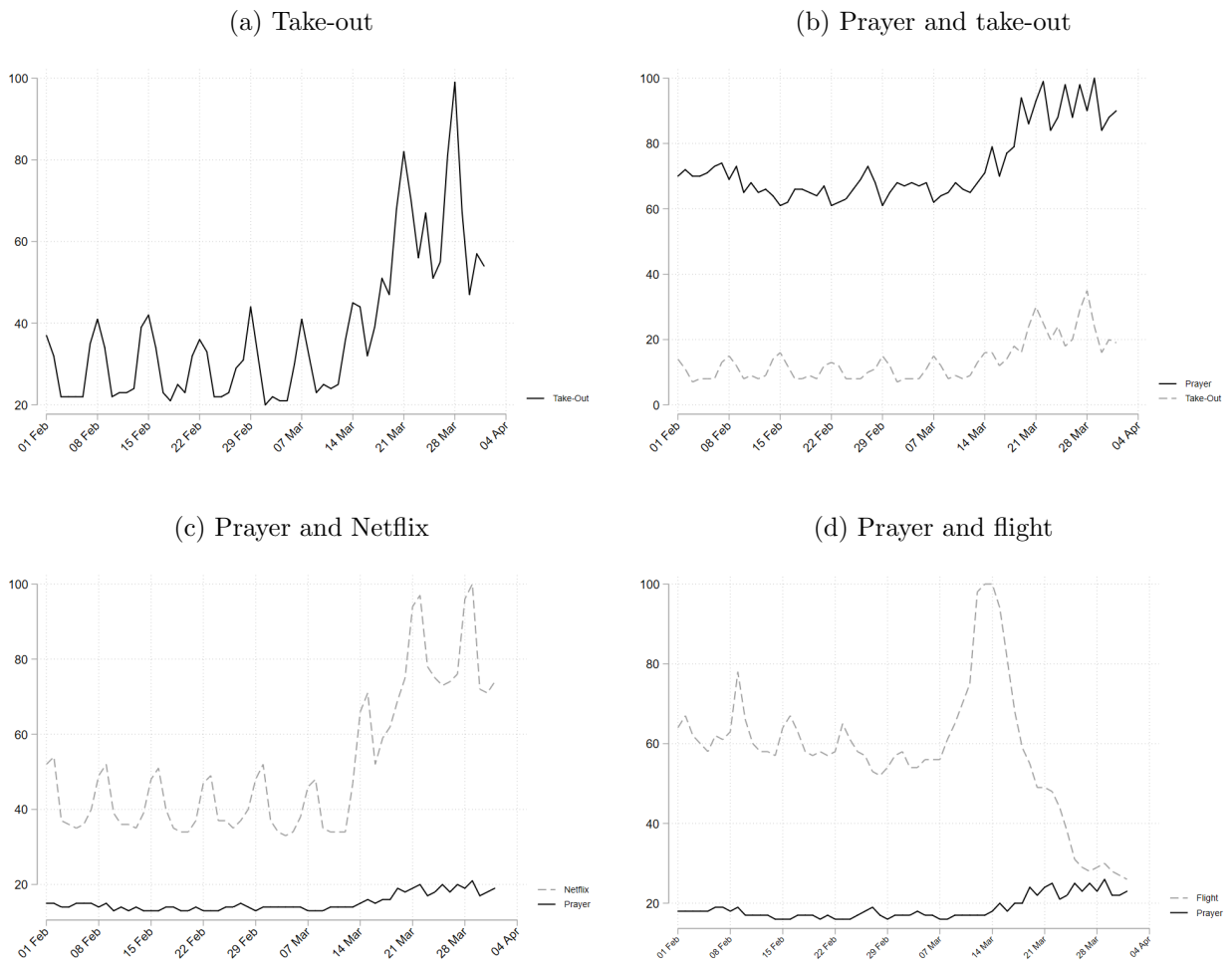
Global average of Google searches on different topics over the period Feb 1 to April 1 2020. The searches are set to 100 for the largest search within each panel. The size of the increases are therefore not comparable across panels, but they are comparable within one panel. **Result**: Google searches for prayer compares in size to movements in other tendencies that were impacted by COVID-19.

B.5 The timing of the rise in prayer searches

Fig. A.9 documents the distribution of the countries based on when the prayer search shares rose for the first time in each country. The figure illustrates the timing of the surge in Google searches for prayer. The following calculations define which increases in the prayer search

shares are significant based on whether the increase exceeds one standard deviation.

$$prayer_{ct} > prayer_{ct0} + sd(prayer_c) \tag{4}$$

where $prayer_{ct}$ is the daily share of Google searches for the topic prayer for country c, as described in Section A.1. $prayer_{ct0}$ measures the average prayer search shares in the first week of February (period t0) and $sd(prayer_c)$ measures the standard deviation of the prayer search shares over the entire period from January 29 to April 1. Equation (4) defines an increase in prayer search shares as significant when the search share rose more than one standard deviation above the initial level in the beginning of February. For each country and for each day, one can calculate whether or not search shares rose above this level. Fig. A.9 depicts the first day that this level was reached for at least two consecutive days or with maximum one day in between. This occurred within the window of analysis (Feb 1 - Apr 1 2020) for 94 out of the 95 countries in the sample. The 94 countries are represented by the density mass in Fig. A.9. For 51 of these 94 countries, the significant rise occurred on March 11 or thereafter (the density mass at or to the right of March 11 in the figure).

Of the 43 countries, where the first day with significant increases in prayer search shares occurred before March 11 (the density mass to the left of March 11 in the figure), 19 were located in Asia, where the COVID-19 virus first hit, cf. Fig. A.10 which shows the development in registered reported cases worldwide.

Morocco is the only country in the sample not included in Fig. A.9. The search shares for prayer did rise above the mean of the first week of February for several days during the window of analysis, but with two or more days in between the spikes.

All in all, Fig. A.9 shows that most of the countries in the sample experienced their first large increases in search shares for prayer during the period March 14 to March 25.

Figure A.9: Distribution of the countries based on first day with two-days rise in prayer search shares
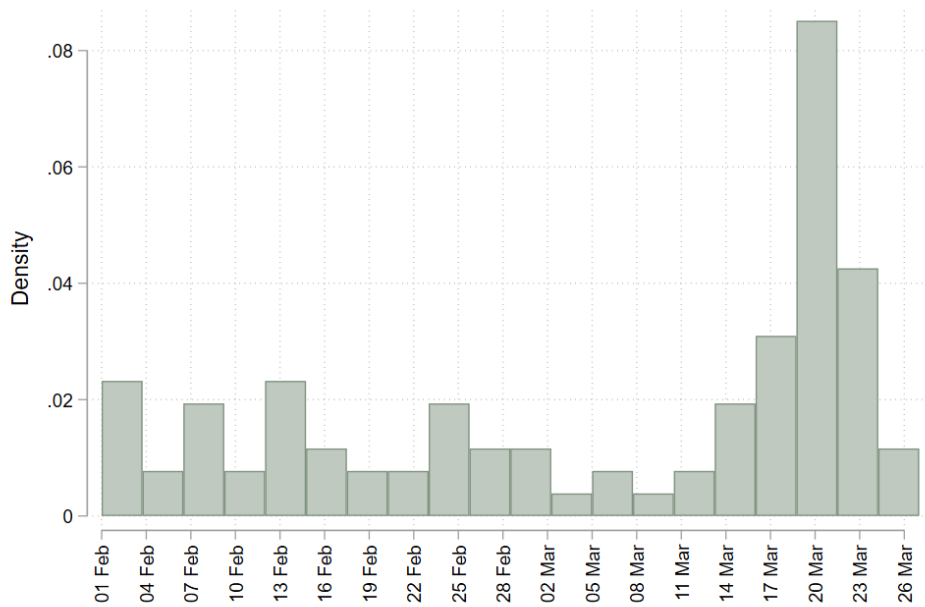
The histogram shows the distribution of 94 countries in the sample, based on the day when their prayer search shares first rose more than one standard deviation above the level in the first week of February for two consecutive days or with maximum one day in between. All countries, except Morocco fulfil this criteria and are included in the figure.

Figure A.10: Distribution of COVID-19 cases worldwide as of 16 April 2020
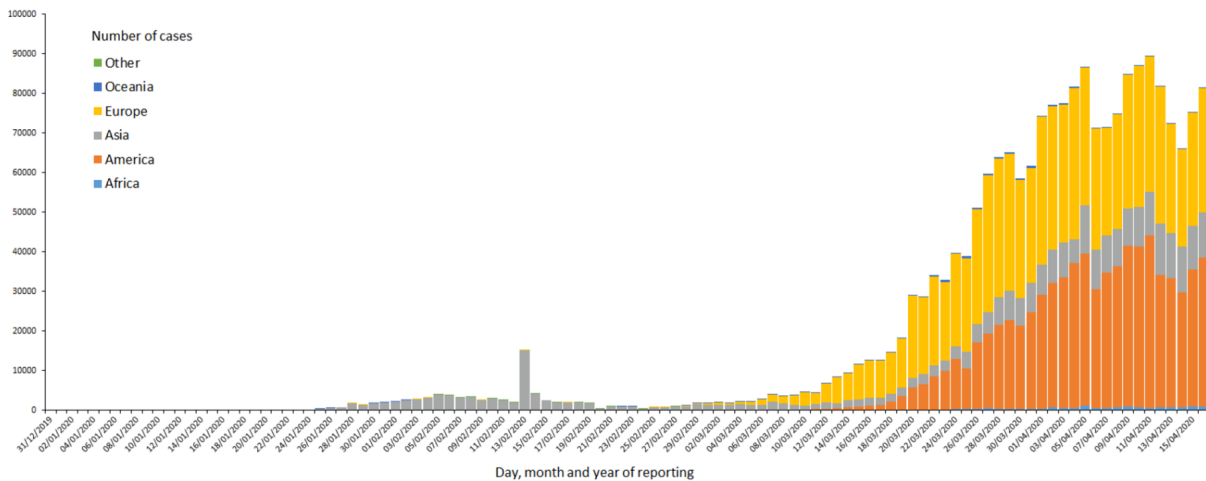
Distribution of cases of COVID-19 by continent (according to the applied testing strategies in the affected countries). Source: ECDC, https://www.ecdc.europa.eu/.

Fig. A.11 shows that the spike in Google searches for prayer is even visible in the data back to beginning of the Google Trends series, starting in Jan 1 2004. Note, however, that there is a trend break in the data on Jan 1 2016, where Google Trends' data collection method was improved.

Figure A.11: Global Google searches for prayer Jan 2004 to Apr 2020
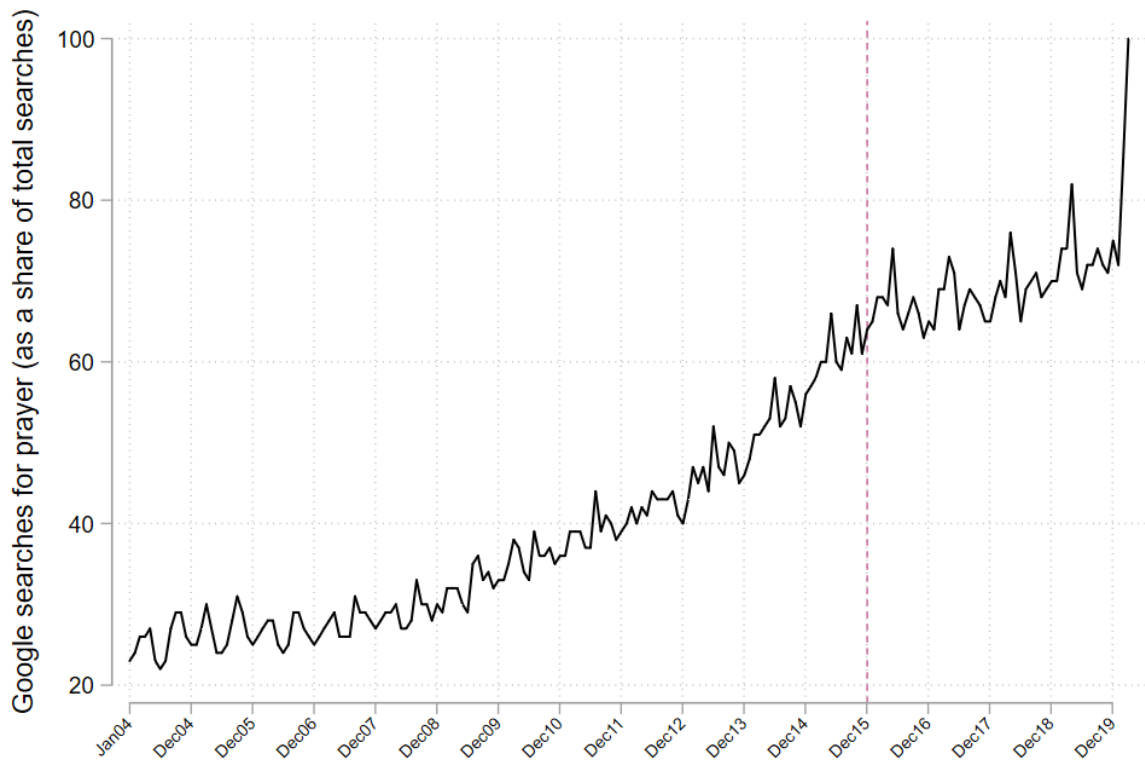
The vertical line represents an improvement of Google Trends' data collection method.

B.6 Alternative Google searches for religious topics

Figure A.12 documents rising search shares for other religious search topics. The period includes the full year from Apr 14 2019 to Apr 14 2020, the latest date at the time of writing. The end date coincides partly with Easter 2020, which may influence the rise for the Christian search terms, but should not matter for the remaining religious terms.

Figure A.12: Google searches for religious topics Apr 14 2019 - Apr 14 2020

(a) Topics quran, muhammad, allah
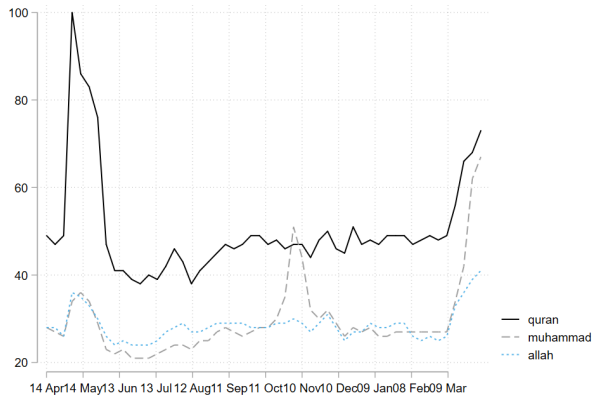
(b) Topics jesus and bible
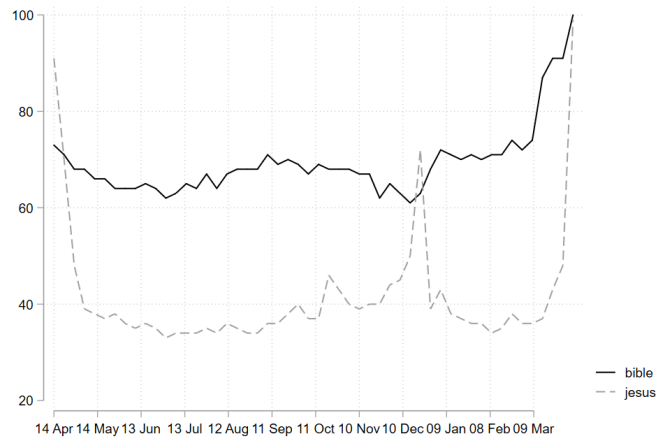
(c) Topics buddha and vishnu
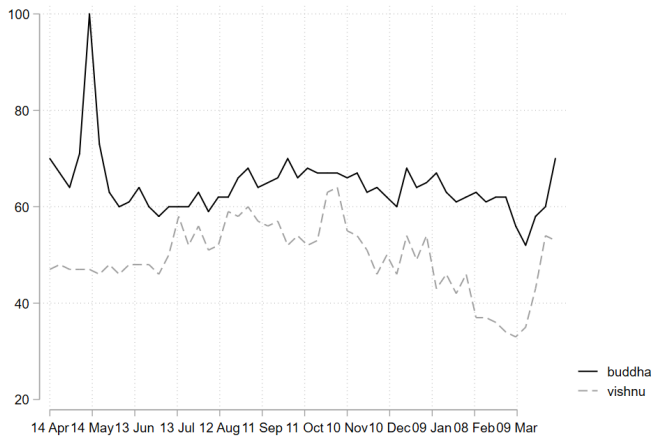
(d) Topic shiva
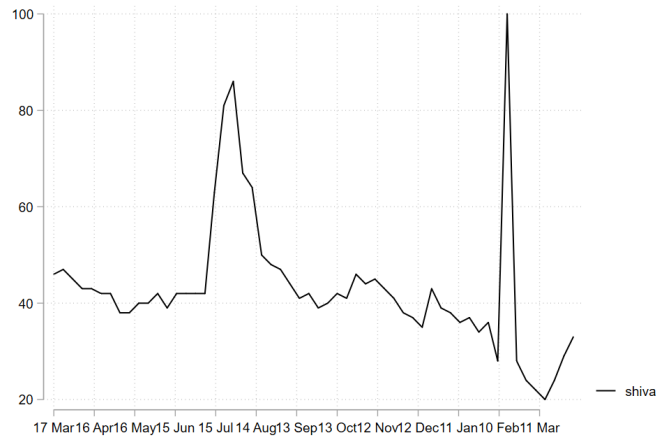
Figure A.12: Cont. Google searches for religious topics Apr 14 2019 - Apr 14 2020

(e) Topic god

(f) Topics god, quran, bible, buddha, shiva

(g) Topics god and prayer
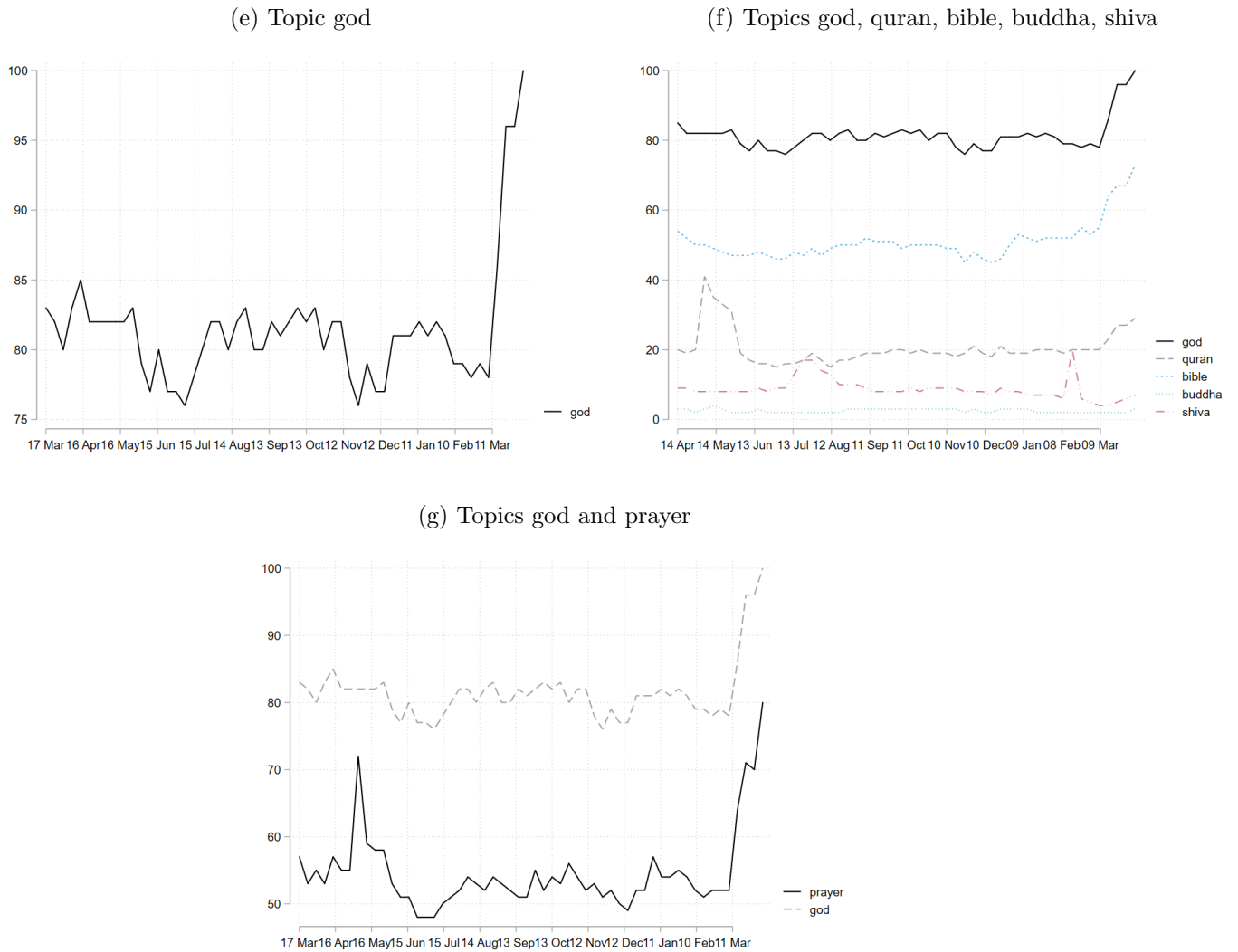
Global average of Google searches on religious topics over the period April 14 2019 to April 14 2020. Google Trends sets the searches to 100 for the largest search within each time series. The search shares are therefore not comparable across panels, but they are comparable within one panel.
Result: Search shares rise in March 2020 for all religious terms. In March 2020, searches for muhammad, allah, bible, jesus, and god surpass the search shares across all other religious events during the year. Searches for buddha peak on May 12, Buddhas birthday, quran peaks on the first day of the Ramadan, vishnu peaks on Nov 10, Vaikuntha Chaturdashi, the Hindu holiday for Lord Vishnu and Lord Shiva, shiva peaks on Feb 21, Maha Shivratri, the worshipping of Lord Shiva.

C The motivating figures

This section contains supplementary information for Figures 1, 2, and 3. Fig. 1 documents the development in the global average of Google searches for the topic prayer. The data shown is the direct download from Google Trends, before the data corrections described in Section A.1. The time-line in Panel A is chosen as the longest possible window without data breaks. This means that the series starts on Jan 1 2016. Fig A.11 documents that the same picture emerges when extending the timeline back to 2004, which is the earliest available data from Google Trends. The series ends at the latest date available at the time of writing, April 11. Panel B of Fig. 1 restricts the period to the period used in the main analysis, starting on

January 29 2020 and ending on Apr 1 2020, before the onset of Easter 2020.

Fig. 2 is constructed based on the data on google searches for prayer, described in Section A.1. To construct the figure, data points were dropped after each country reached its' maximum search share for prayer during the period January 29 to April 1 2020. Interpretation of a fall in search shares is not straight forward, since the search shares mechanically fall when people start entering their preferred prayer websites directly instead of googling them first, even if the interest in prayer stays constant. The means within each group were calculated only when at least 2-5 countries had information on prayer search shares on the given day. Third, to increase comparability across the panels, the y-axis was cropped at prayer share values of 4, even in cases where some data points exceeded this value. These large fluctuations in the data occur mainly in Asia, particularly outside of South East Asia.

Fig. 3, panel (b) documents the absolute change in prayer search shares in March 2020, $\Delta prayer_{march}$, which is constructed using the following formula:

$$\Delta prayer_{mar} = maxprayer_{mar} - avgprayer_{feb} - \Delta prayer_{feb} \tag{5}$$

$maxprayer_{mar}$ measures the highest prayer search share reached after March 1. $avgprayer_{feb}$ measures the average prayer share during February 2020. $\Delta prayer_{feb}$ measures the change in prayer search shares from the first to the last week of February 2020. The rationale is to remove the general trend in prayer search shares, ensuring that we do not attribute a potential general rise in prayer search shares to the COVID-19 pandemic. If prayer search shares rose in February, this may be due to other things than the pandemic or the fact that COVID-19 started in Asia well before it was declared a pandemic. $\Delta prayer_{feb}$ is set to zero if prayer search shares fell during February 2020 to get a conservative measure of the rise in prayer search shares after March 1. The measure $\Delta prayer_{mar}$ now measures the absolute change in prayer search shares from March 1 to the day with the highest prayer search shares in March 2020, where the rise in prayer search shares in February are subtracted.

The relative increase in prayer search shares in panel (a) of Fig. 3 is calculated by dividing the absolute change in prayer search shares, $\Delta prayer_{march}$ subtracted the rise in February, with the average level in February, $avgprayer_{feb}$.

C.1   The impact of COVID-19 on prayer search shares

This section explores further the link between COVID-19 exposure and the rise in prayer search shares. First, Fig. A.1 shows that the results in Table 1 are not driven by specific observations. The figure shows the added variables plot of columns (1), (3), and (6) of Table 1, where observations are binned into 100 equally sized bins.

Table A.1 tests for non-linearities in the measures of days since COVID-19 was declared a pandemic, registered cases, and deaths. Panel A includes the full sample, while Panels B and C restricts the sample to only include observations until the prayer search shares reaches its maximum over the period. This is to account for the fact that falling prayer search shares are difficult to interpret as some of the fall may be caused by people accessing their prayer websites directly instead of googling them. The rise in prayer search shares slows down as time passes or more cases and deaths are registered, except in the restricted sample where the rise in prayer search shares does not slow down as time passes. Panel C documents that the number of cases and deaths do not impact prayer search shares once days since COVID-19 was declared a pandemic is accounted for.

Table A.2 documents that the rise in prayer search shares after March 11 is larger when the country had also one or more registered cases or deaths in the restricted sample where observations are dropped after prayer search shares reached their maximum. This interaction, though, becomes insignificant once time fixed effects are accounted for.

So far, the analysis has included daily data. This means that the estimate on registered cases and deaths (γ in equation (1)) measures the daily change in prayer shares as cases or deaths go up on the day before. Fluctuations in the Google data may make these day-to-day comparisons rather imprecise. Table A.3 documents similar results when the data is aggregated up to weekly averages. Panel A documents that cases and deaths increase prayer shares, but not when accounting for the date when the WHO declared COVID-19 a pandemic (March 11). Further, columns (5) and (8) show that the rise in prayer shares after March 11 is *lower* as cases and deaths go up. This, however, may be due to the fact that the Google searches for prayer will mechanically go down as people find their preferred prayer websites, but cases and deaths rose exponentially in this early phase of the pandemic. The reason could also be that the fear of the disease rises more in the early stages, as people have a tendency to overestimate the mortality and contagiousness of the COVID-19 (Fetzer et al., 2020). Panel B includes instead days since the first case or death. Here, the rise in prayer shares is no larger or smaller depending on the days since the first case, but is slightly larger depending on days since first death.

Figure A.1: Binned added variables plots of the rise in prayer search shares after different dates

(a) The rise in prayer after March 11

(b) after the first registered case

(c) after the first registered death
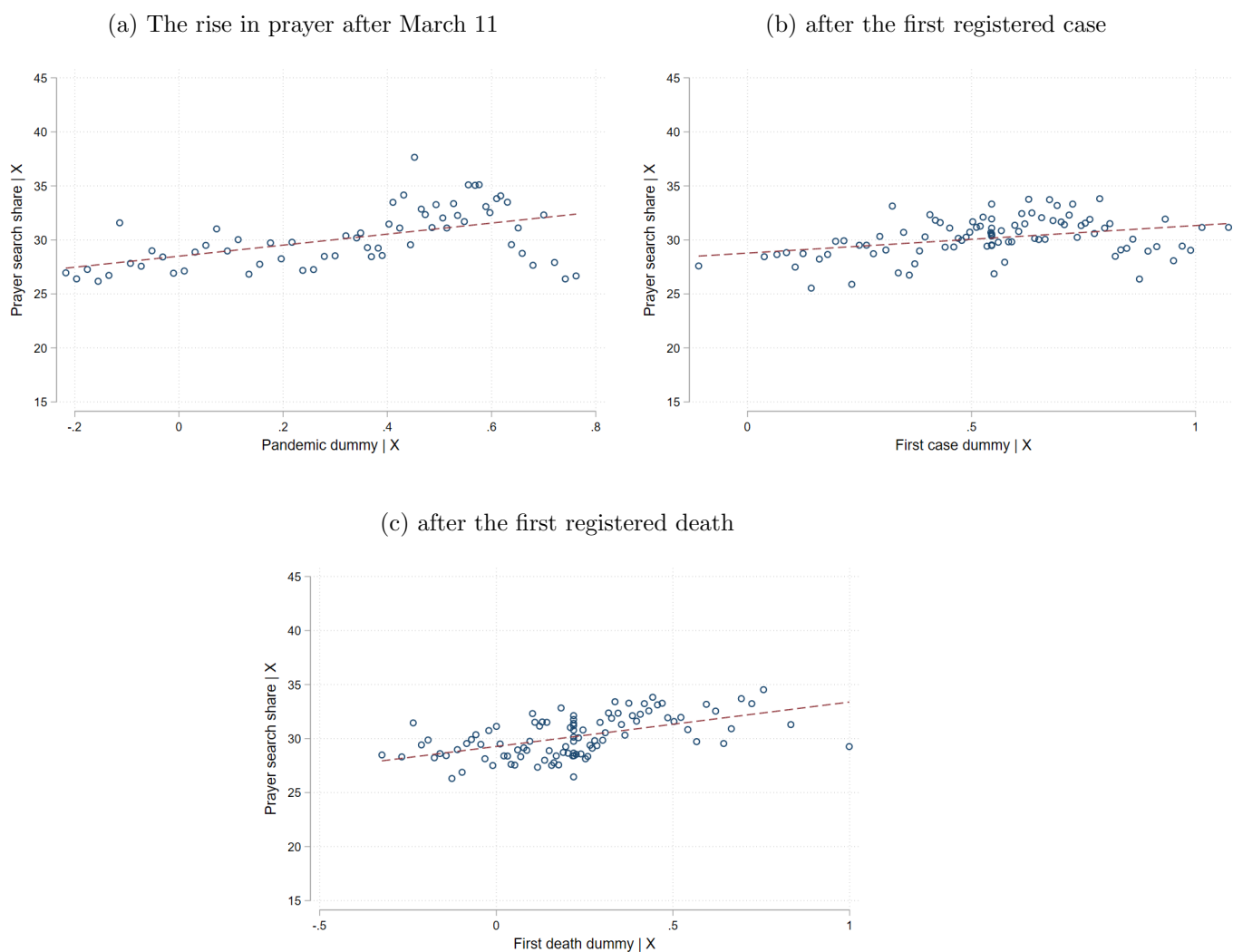
The binned added variables plot of regressions of the prayer search share on the pandemic dummy in panel (a), the dummy equal to one after the first case is registered in panel (b), and after the first death is registered in panel (c). The regressions mirror those in columns (1), (3), and (6) of Table 1 and include country fixed effects and country-specific trends. The observations are binned into 100 equally sized bins.
Result: The results are not driven by specific observations.

Table A.1: The impact of COVID-19 on prayer search shares I

Dependent variable: Prayer searches						
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Full sample						
Days since Pandemic	0.44***	1.25***				
	(0.057)	(0.180)				
Days since Pandemic squared		-0.043***				
		(0.008)				
COVID-19 infected cases			0.090**	0.30***		
			(0.044)	(0.101)		
Infected cases squared				-0.0019***		
				(0.001)		
COVID-19 deaths					1.35***	3.47**
					(0.427)	(1.364)
Deaths squared						-0.25**
						(0.117)
R-squared	0.84	0.84	0.83	0.83	0.83	0.83
Observations	6080	6080	6066	6066	6080	6080
Panel B: Restricted sample						
Days since Pandemic	1.02***	0.87***				
	(0.129)	(0.239)				
Days since Pandemic squared		0.011				
		(0.016)				
COVID-19 infected cases			0.36**	0.90***		
			(0.157)	(0.190)		
Infected cases squared				-0.0094***		
				(0.002)		
COVID-19 deaths					2.71**	9.62**
					(1.259)	(4.382)
Deaths squared						-1.07*
						(0.563)
R-squared	0.84	0.84	0.83	0.83	0.83	0.83
Observations	4345	4345	4331	4331	4345	4345
Panel C						
Days since Pandemic	1.02***	1.02***	1.05***	1.07***	1.02***	1.02***
	(0.129)	(0.129)	(0.138)	(0.143)	(0.133)	(0.135)
COVID-19 infected cases			-0.13	-0.37		
			(0.095)	(0.302)		
Infected cases squared				0.0039		
				(0.004)		
COVID-19 deaths					-0.57	0.36
					(0.560)	(2.153)
Deaths squared						-0.14
						(0.260)
R-squared	0.84	0.84	0.84	0.84	0.84	0.84
Observations	4345	4345	4331	4331	4345	4345
Countries	95	95	95	95	95	95

OLS estimates. Units: Days × countries. Period: January 29 to April 1 2020. All regressions include a constant, country-specific time trends, and country fixed effects. The sample is restricted to the sample where observations are dropped after the maximum prayer search share over the period is reached. Panel B replicates the regressions in Panel A, but includes the variable "Days since Pandemic". Robust standard errors clustered at the country level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level.

Result: The number of cases and deaths do not matter for prayer search shares when controlling for the number of days passed since WHO declared the COVID-19 a pandemic.

Table A.2: The impact of COVID-19 on prayer search shares II

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep var: Prayer search share								
Pandemic dummy	5.49***	0.069			5.22***	3.24***		
	(0.923)	(2.665)			(1.038)	(0.951)		
First case dummy	2.53**	1.82*	2.74***	2.62**		3.39***		
	(1.019)	(0.945)	(1.003)	(1.043)		(0.975)		
Pandemic x first case dummy		6.19**		0.93				
		(2.626)		(2.497)				
First death dummy					3.10*		-0.47	-1.33
					(1.572)		(1.363)	(2.056)
Pandemic x first death dummy						5.78***		1.33
						(1.553)		(2.289)
R-squared	0.83	0.83	0.84	0.84	0.83	0.83	0.84	0.84
Observations	4331	4331	4331	4331	4345	4331	4345	4345
Countries	95	95	95	95	95	95	95	95
TimeFE	No	No	Yes	Yes	No	No	Yes	Yes

OLS estimates. Units: Days × countries. Period: January 29 to April 1 2020. All regressions include a constant, country-specific time trends, and country fixed effects. In addition, time fixed effects are added in columns 3, 4, 7, and 8. The sample is restricted to the sample where observations after prayer searched shares reached their max are dropped. Robust standard errors clustered at the country level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level.

Result: Prayer search shares rose more after March 11 for countries that had already had their first case or death.

Table A.3: The impact of COVID-19 on prayer search shares III

Dependent variable: Prayer searches

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A								
Pandemic dummy	6.49***	9.15***		9.06***	9.10***		9.08***	9.12***
	(0.854)	(1.176)		(1.218)	(1.221)		(1.192)	(1.195)
COVID-19 infected cases			0.34**	0.056	0.92***			
			(0.143)	(0.069)	(0.155)			
Pandemic x Cases					-0.79***			
					(0.123)			
COVID-19 deaths						2.50***	0.79+	13.7***
						(0.864)	(0.488)	(2.336)
Pandemic x Deaths								-12.2***
								(1.894)
R-squared	0.95	0.97	0.96	0.97	0.97	0.96	0.97	0.97
Panel B								
Pandemic dummy	6.49***	9.15***		7.82***	8.91***		8.89***	8.25***
	(0.854)	(1.176)		(1.316)	(2.170)		(1.242)	(1.203)
Days since first case			0.64***	0.18	0.17			
			(0.122)	(0.136)	(0.141)			
Pandemic x Days since 1st case					-0.039			
					(0.067)			
Days since first death						0.75***	0.082	-0.26
						(0.190)	(0.194)	(0.243)
Pandemic x Days since 1st death								0.35**
								(0.152)
R-squared	0.95	0.97	0.96	0.97	0.97	0.96	0.97	0.97
Observations	950	661	661	661	661	661	661	661
MeanDepVar	30.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6
RestrictedSample	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes

OLS estimates. Units: Weeks × countries. Period: January 29 to April 1 2020. All regressions include a constant, country-specific time trends, and country fixed effects. The sample consists of the full sample in column (1), but is restricted to the sample where observations are dropped after the maximum prayer search share over the period is reached. Panel A includes the number of registered cases and deaths. Panel B includes a measure of the days since a country had its' first case or death by COVID-19. Robust standard errors clustered at the country level in parentheses. +, *, **, and *** indicate significance at the 15%, 10%, 5%, and 1% level.

Result: The number of cases and deaths do not matter for prayer search shares when controlling for the dummy indicating when the WHO declared the COVID-19 a pandemic.

C.2 Who is praying more?

Table A.4 documents that the rise in prayer intensity is generally higher for populations that are already more religious, using different measures of religiosity: Average Google searches for prayer in 2019 in column (1) and measures based on various questions asked in global surveys (conducted before 2015) in columns (2)-(8): Whether or not respondents take moments of prayer, meditation or contemplation (col 2),[24] ever prayed (col 3), pray weekly (col 4), rank God as anything but unimportant in their lives (col 5), rank God as very important (col 6), ever went to church (col 7), or go to church on a weekly basis (col 8). Last, to obtain exogenous variation in religiosity, column (9) interacts instead with earthquake risk.

The rise in prayer searches is larger in countries where a larger share of the population

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[24]While this measure captures more than religiosity, it correlates with more than .8 with the remaining measures of religiosity listed. This indicates that the majority of the affirmative answers cover some sort of religious prayer, meditation or contemplation.

initially prayed more, went more to church, or answered that God is important in their lives, and faced higher earthquake risk. Prayer search intensity rose by more than 50% of the mean for the countries with the highest initial religiosity.[25]

Prayer search shares rose much less in the less religious countries, but even in the least religious countries, prayer searches rose for five out of the nine measures of religiosity (MinimumImpact in the bottom of the table).

The p-values, PvalueAtXPct, in the bottom of the table indicate the p-value of the following test, where the parameter values are indicated in equation (2): $\gamma + \lambda religiosity_c = 0$. Thus, the test indicates at what level of religiosity, the prayer search shares rose significantly. The value of $religiosity_c$ is the value at the 1st, 10th, 15th, and 20th percentiles, respectively. The calculations show that prayer search shares even rose significantly for the 1% least religious countries for 2 out of 9 measures of religiosity. These two are the measures available for most countries, indicating that the lack of a significant rise for the remaining measures is most likely due to lower precision in the smaller sample. For the 10% least religious, prayer searches rose significantly for 4 out of 9 religiosity measures, while they rose for 8 out of 9 measures within the 15% least religious countries. The measure that does not show a significant rise for this group is the religiosity measure available for the least countries. At religiosity levels as low as the 20th percentile, prayer search shares rose significantly for all measures of religiosity.

Tables A.5 and A.6 document the differential effects across different religiosity measures for more detailed levels of religiosity, based on the prayer and churchgoing measures in Table A.5 and based on the importance of God measure in Table A.6.

Table A.7 shows regressions similar to Panel C of Table 2, but for different measures of religiosity: Importance of God and churchgoing. Earthquake risk is a strong instrument for all measures and the conclusion remains: This larger rise in prayer search intensity for the poor and vulnerable is due to higher religiosity levels in these countries. There is one exception, though: The prayer search share rise more for the poor, even when allowing prayer search shares to vary with religiosity levels.

The variables included in Tables 2 and A.7 were checked for multicollinearity using the Variance Inflation Factor, VIF. None of the VIFs were above 10, which means that the degree of collinearity between the variables is acceptable.

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[25]This calculation is based on the MaximumImpact scalar provided in the bottom of the table. This scalar measures the impact of the pandemic dummy in countries with the maximum level of the particular religiosity measure. In col (1), the maximum level of prayer search intensity in 2019 was 87, reached by Morocco. Thus, MaximumImpact was -0.086+0.08*87=6.85.

Table A.4: The rise in prayer search shares for different religiosity levels I

Dep var: Prayer searches	(1) Pray2019	(2) MomentPray	(3) EverPray	(4) WeekPray	(5) God	(6) VeryGod	(7) EverChurch	(8) WeekChurch	(9) EarthqRisk
Pandemic dummy	1.26*	-4.84**	-4.82	-0.84	-16.9***	-0.13	-6.37**	0.67	-7.76**
	(0.747)	(2.106)	(3.623)	(2.056)	(4.844)	(0.919)	(2.734)	(0.875)	(3.777)
Pandemic x Religiosity	0.15***	12.5***	12.0**	10.1**	23.9***	9.15***	14.4***	12.6***	14.4***
	(0.035)	(3.254)	(4.972)	(4.065)	(5.709)	(2.237)	(3.938)	(2.728)	(4.890)
R-squared	0.84	0.88	0.89	0.90	0.87	0.87	0.87	0.87	0.87
Observations	6080	4096	2880	2880	5056	5056	4992	4992	4416
Countries	95	64	45	45	79	79	78	78	69
MeanDepVar	30.2	23.8	27.6	27.6	25.9	25.9	26.0	26.0	25.1
MinimumImpact	1.41	-1.28	0.33	0.93	-3.08	0.72	-0.93	1.00	-1.14
MaximumImpact	14.0	7.45	7.19	8.94	6.98	8.77	7.95	11.8	6.61
PvalueAt1Pct	0.054	0.30	0.84	0.52	0.058	0.34	0.48	0.23	0.47
PvalueAt10Pct	0.0030	0.66	0.24	0.20	0.16	0.041	0.13	0.062	0.0020
PvalueAt15Pct	0.0010	0.016	0.039	0.13	0.0020	0.0080	0.0070	0.032	0
PvalueAt20Pct	0	0	0.0030	0.059	0	0.0020	0	0.012	0

OLS estimates. Units: Days × countries. Period: January 29 to April 1 2020. All regressions include a constant, country-specific time trends, and country fixed effects. The pandemic dummy is interacted with average google searches for prayer in 2019 (col 1), the share of the populations taking moments for prayer, meditation, or contemplation (col 2), ever prayed (col 3), pray weekly (col 4), answered that God is anything but important in their lives (col 5), answered that God is very important in their lives (col 6), ever went to church (col 7), or went to church weekly (col 8), and average earthquake risk (col 9). MinimumImpact (MaximumImpact) indicates the impact of the pandemic at the minimum (maximum) level of the particular religiosity measure. PvalueAtXPct indicates the p-value of the test that the impact of the pandemic dummy is insignificant, evaluated at the X percentile of the religiosity measure. Robust standard errors clustered at the country level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level.
Result: Prayer search shares rose at most levels of religiosity and rose more for more religious countries.

Table A.5: The rise in prayer search shares for different religiosity levels II

Dep var: Prayer searches	(1) Moments	(2) Never	(3) Ever	(4) Yearly	(5) Weekly	(6) Daily	(7) Never	(8) Ever	(9) Yearly	(10) Weekly	(11) Daily
Pandemic dummy	-4.84**	7.19***	-4.82	-3.80	-0.84	0.75	8.06***	-6.37**	-4.80**	0.67	3.59***
	(2.106)	(1.642)	(3.623)	(2.721)	(2.056)	(1.413)	(1.383)	(2.734)	(1.955)	(0.875)	(0.875)
Pandemic x Pray	12.5***	-12.0**	12.0**	11.8***	10.1**	9.26**					
	(3.254)	(4.972)	(4.972)	(4.288)	(4.065)	(3.731)					
Pandemic x Church							-14.4***	14.4***	14.3***	12.6***	9.08**
							(3.938)	(3.938)	(3.424)	(2.728)	(3.465)
R-squared	0.88	0.89	0.89	0.90	0.90	0.90	0.87	0.87	0.87	0.87	0.87
Observations	4096	2880	2880	2880	2880	2880	4992	4992	4992	4992	4992
Countries	64	45	45	45	45	45	78	78	78	78	78

OLS estimates. Units: Days × countries. Period: January 29 to April 1 2020. All regressions include a constant, country-specific time trends, and country fixed effects. Robust standard errors clustered at the country level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level.
Result: Prayer search shares rose more for more religious countries.

Table A.6: The rise in prayer search shares for different religiosity levels III

Dep Var: Prayer search share	(1) Very:10	(2) 9	(3) 8	(4) 7	(5) 6	(6) 5	(7) 4	(8) 3	(9) 2	(10) Not:1
Pandemic dummy	0.57	-0.13	-1.35	-2.51*	-4.06**	-6.85***	-8.46***	-11.7***	-16.9***	6.98***
	(0.832)	(0.919)	(1.122)	(1.325)	(1.663)	(2.248)	(2.599)	(3.406)	(4.844)	(1.050)
Pandemic x Importance of God	8.98***	9.15***	9.90***	10.7***	12.0***	14.3***	15.8***	18.8***	23.9***	-23.9***
	(2.307)	(2.237)	(2.327)	(2.434)	(2.723)	(3.221)	(3.538)	(4.307)	(5.709)	(5.709)
R-squared	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Observations	5056	5056	5056	5056	5056	5056	5056	5056	5056	5056
Countries	79	79	79	79	79	79	79	79	79	79
CountryFE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MeanDepVar	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9

OLS estimates. Units: Days × countries. Period: January 29 to April 1 2020. All regressions include a constant, country-specific time trends, and country fixed effects. Robust standard errors clustered at the country level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level.
Result: Prayer intensity rose more in countries where larger shares of the population rank God as important.

Table A.7: The rise in prayer search shares across country characteristics

Dependent variable: Prayer								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A	Poverty	GDP	HDI	Gini	Uneven	Fragile	Demography	Mortality
Pandemic dummy	-25.3**	-30.1**	-28.7*	-24.5**	-29.5**	-34.0**	-26.4**	-26.9**
	(12.329)	(13.664)	(16.252)	(10.782)	(14.307)	(14.244)	(12.807)	(11.203)
Pandemic x Variable	0.46**	0.18	1.09	0.11	-0.21	-0.053	0.20	0.0094
	(0.191)	(0.593)	(5.492)	(0.109)	(0.618)	(0.043)	(0.515)	(0.011)
Pandemic x Importance of God	33.1**	36.2***	35.6**	27.6**	38.5**	45.7***	33.0**	33.3***
	(14.262)	(12.750)	(14.947)	(13.235)	(18.259)	(17.476)	(15.683)	(12.914)
R-squared	0.88	0.87	0.87	0.89	0.87	0.87	0.87	0.87
Observations	3456	4288	4288	3904	4288	4288	4288	4352
Countries	54	67	67	61	67	67	67	68
FirstStageF	27.4	24.3	21.0	26.8	14.8	14.3	16.6	34.4
Panel B								
Pandemic dummy	-10.8*	-11.0	-12.0	-13.5**	-11.5**	-12.6**	-11.6*	-12.2**
	(6.143)	(10.291)	(10.706)	(5.740)	(5.825)	(6.231)	(6.150)	(5.489)
Pandemic x Variable	0.26	-0.099	0.22	0.18*	0.34	-0.015	0.23	0.0085
	(0.256)	(0.683)	(6.015)	(0.101)	(0.459)	(0.036)	(0.535)	(0.012)
Pandemic x Ever Church	20.4**	21.3**	21.2**	14.9**	18.7**	23.2**	19.6*	20.2**
	(8.779)	(8.282)	(9.493)	(6.993)	(9.084)	(9.379)	(10.011)	(8.076)
R-squared	0.88	0.87	0.87	0.89	0.87	0.87	0.87	0.87
Observations	3456	4224	4224	3904	4224	4224	4224	4288
Countries	54	66	66	61	66	66	66	67
FirstStageF	25.4	18.5	17.1	19.9	15.2	16.9	13.7	24.3

Units: Days × countries. Period: January 29 to April 1 2020. All regressions include a constant, country-specific time trends, and country fixed effects. Two interaction terms are included: One between the pandemic dummy and the particular socio-economic characteristic and one between the pandemic dummy and the prayer share in 2019. Panel A shows the OLS estimates, while Panel B shows the IV estimates, where prayer search shares in 2019 are instrumented with earthquake risk. The sample in Panel B is restricted to countries within 1500 km of high-risk earthquake zones. Robust standard errors clustered at the country level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level.

Result: Prayer search shares rose more in poor, unequal, and insecure countries. This is due to higher religiosity levels.

## C.3 Replacement of physical church or rise in prayer intensity

Around mid-March 2020, most churches across the globe closed in af effort to enforce social distancing. A concern for the analysis is whether the rise in prayer search shares is simply a replacement for the physical churches. According to the theory on religious coping we would not expect this to be the case, since people tend to use their intrinsic religiosity rather than their extrinsic religiosity to cope with adversity. Thus, even if the churches had been open, we would not expect churchgoing to rise as much as private prayer. This section tests this prediction empirically.

Fig. A.2 documents that Google searches for the topic "internet church" also rises during the month of March 2020, but in a very different pattern. The three large spikes in panel (a) of Fig. A.2 are the three last Sundays in March. These rises coincide with the closure of the physical churches and they follow a very different pattern than the general rise in prayer shares documented throughout this research. Panel (b) shows that the rise in searches on internet church is insignificant compared to the total rise in prayer searches, indicating that the rise in demand for internet churches does not explain the rise in prayer shares.

Table A.8 shows that prayer search shares rose every day of the week, except Fridays. The rise on Sundays is larger than the other days, which could be due to most masses being held on Sundays or simply that Sundays are the most holy day of the week for Christians, and thus the day of the week, where most choose to pray.

Figure A.2: Global Google searches for prayer and internet church

(a) Searches for the topic "internet church"
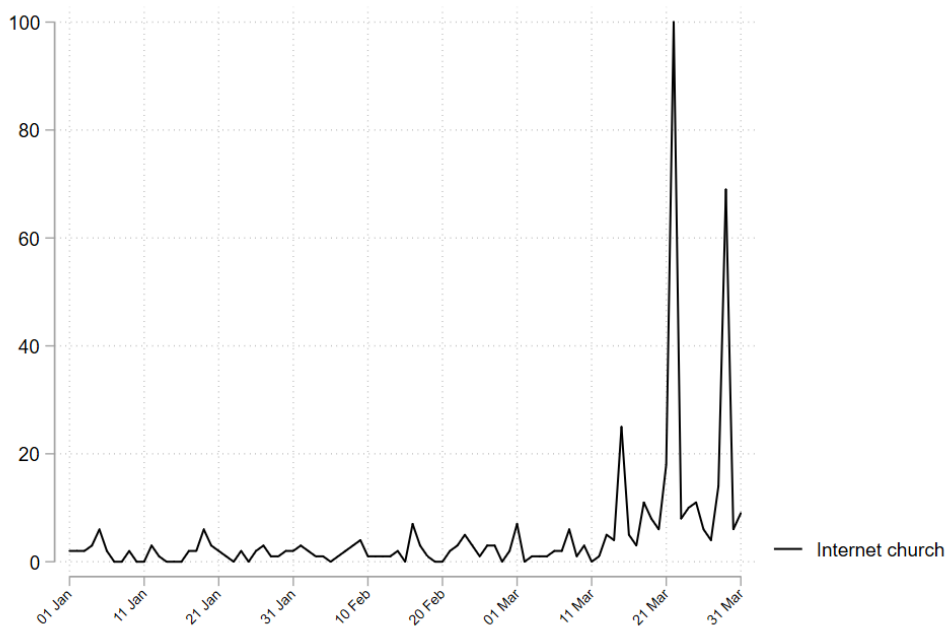
(b) Searches for the topics "internet church" and "prayer"
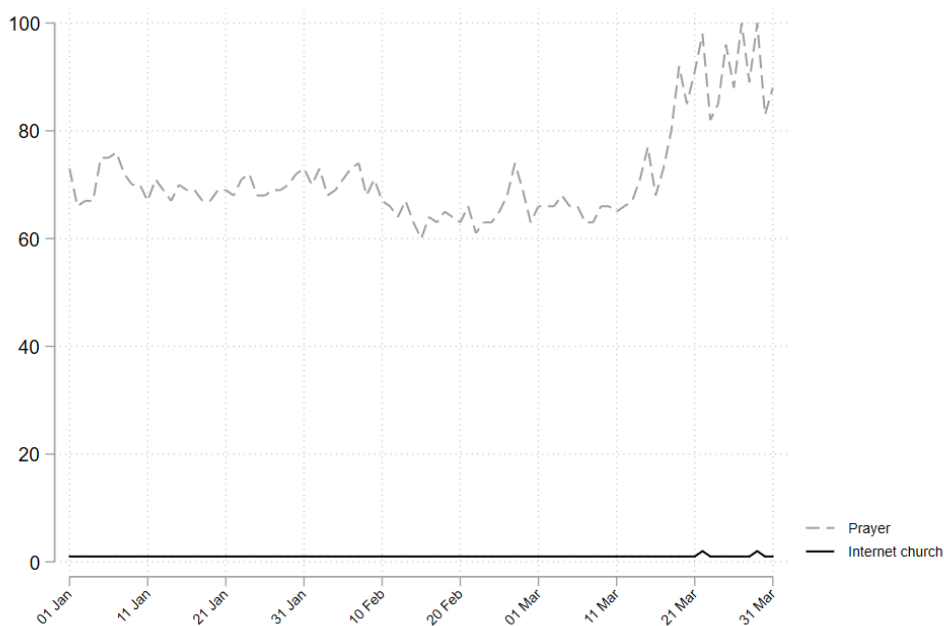
Global average of Google searches for prayer Jan 1 - Apr 1 2020. Searches for internet church also rise during the month of March 2020, but the share is minuscule compared to the size of the search shares for prayer. Furthermore, the searches for internet church rise mainly every Sunday and thus have a distinctly different pattern than the search shares for prayer.

Table A.8: The rise in prayer search shares, by weekdays

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dep Var: D.Prayer	Sun	Mon	Tues	Wed	Thur	Fri	Sat
Pandemic dummy	11.0***	3.22**	4.38***	4.58***	3.71**	1.13	6.77***
	(1.740)	(1.542)	(1.418)	(1.190)	(1.436)	(1.590)	(1.481)
R-squared	0.88	0.87	0.87	0.87	0.88	0.88	0.85
Observations	855	855	855	950	855	855	855
Countries	95	95	95	95	95	95	95
CountryFE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MeanDepVar	30.7	29.6	29.6	30.1	30.0	31.3	29.9

OLS estimates. Units: Days × countries. Period: January 29 to April 1 2020. All regressions include a constant, country-specific time trends, and country fixed effects. The sample includes only Sundays in column (1), Mondays (2), Tuesdays (3), Wednesdays (4), Thursdays (5), and Fridays (6), and Saturdays (8). Robust standard errors clustered at the country level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level.

Result: Prayer search shares increased on all weekdays, except Fridays.

C.4   Growth rates

Instead of identifying the impact on the levels of prayer search shares, this section documents the impact on the growth rates, estimating the following equation:

$$gprayer_{ct} = \beta + \alpha prayer_{ct-1} + \gamma pandemic_{t-1} + \lambda pandemic_{t-1} \times characteristic_c + \delta t + \kappa_c + \varepsilon_{ct} \quad (6)$$

where $gprayer_{ct}$ is the growth rate in prayer search shares from time t-1 to time t in country c. $prayer_{ct-1}$ is the prayer search share at time $t-1$. To prevent day-to-day fluctuations in the search data to impact results, the data was aggregated to weekly averages, so that t represents a week. $characteristic_c$ is either religiosity or socio-economic characteristics. The main results from Table 1 are unaltered: The growth rate in prayer search shares rise after March 11 and after the first case was registered. The rise in growth rates, though is independent of there being any deaths registered and the rise after March 11 is not larger for countries where COVID-19 had infected the populations (Table A.9).

Panel A of Table A.10 documents that prayer search shares grew with similar rates, independent of the previous level of religiosity. This is not surprising and is consistent with panel (a) of Fig. 3. When accounting for the initial level of religiosity in Panel B, the growth rate in prayer search shares is higher in the more religious countries, consistent with the results on the absolute rise in prayer search shares.

Table A.9: The rise in weekly prayer growth rates

Dep Var: Prayer growth	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pandemic dummy	0.051*	0.16***		0.16***	0.077		0.17***	0.17***
	(0.026)	(0.024)		(0.024)	(0.086)		(0.024)	(0.031)
Prayer t-1		-0.026***	-0.024***	-0.026***	-0.026***	-0.024***	-0.025***	-0.025***
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Case dummy			0.089**	0.066*	0.058			
			(0.037)	(0.035)	(0.035)			
Pandemic x First case dummy					0.085			
					(0.089)			
Death dummy						0.040	-0.0096	0.0057
						(0.038)	(0.038)	(0.040)
Pandemic x First death dummy								-0.023
								(0.047)
R-squared	0.12	0.37	0.35	0.38	0.38	0.34	0.37	0.37
Observations	855	855	855	855	855	855	855	855
Countries	95	95	95	95	95	95	95	95
MeanDepVar	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045
RestrictedSample	No	No	Yes	Yes	Yes	Yes	Yes	Yes

OLS estimates. Units: Weeks × countries. Period: January 29 to April 1 2020. All regressions include a constant, country-specific time trends, and country fixed effects. The sample is the full sample in columns (1)-(2), but is restricted to the sample where observations are dropped after the maximum prayer search share over the period is reached in columns (3)-(8). Robust standard errors clustered at the country level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level.

Result: The growth rate in prayer search rises after March 11 and after the first case is registered.

Table A.10: The rise in weekly prayer growth rates for different levels of initial religiosity

Dependent variable: Prayer growth									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A	Pray2019	MomentPray	EverPray	WeekPray	God	VeryGod	EverChurch	WeekChurch	EarthqRisk
Pandemic dummy	0.080*	0.073	0.026	0.037	0.25	0.064	0.20*	0.061	0.20
	(0.041)	(0.122)	(0.142)	(0.070)	(0.256)	(0.062)	(0.115)	(0.051)	(0.172)
Pandemic x Religiosity	-0.0011	-0.0096	0.068	0.075	-0.22	-0.034	-0.19	-0.024	-0.15
	(0.001)	(0.149)	(0.164)	(0.109)	(0.273)	(0.094)	(0.138)	(0.113)	(0.192)
R-squared	0.12	0.12	0.16	0.16	0.13	0.13	0.13	0.13	0.13
MeanDepVar	0.045	0.044	0.045	0.045	0.043	0.043	0.044	0.044	0.047
MinimumImpact	0.079	0.070	0.055	0.050	0.12	0.061	0.13	0.061	0.13
MaximumImpact	-0.017	0.063	0.093	0.11	0.027	0.031	0.014	0.040	0.051
Panel B									
Pandemic dummy	0.10***	-0.043	-0.072	0.019	-0.12	0.068	0.039	0.080	0.021
	(0.039)	(0.119)	(0.137)	(0.066)	(0.262)	(0.062)	(0.125)	(0.053)	(0.178)
Pandemic x Religiosity	0.0023**	0.29*	0.31*	0.29**	0.30	0.17*	0.16	0.26**	0.18
	(0.001)	(0.147)	(0.166)	(0.112)	(0.280)	(0.095)	(0.154)	(0.120)	(0.201)
Prayer t-1	-0.026***	-0.029***	-0.026***	-0.026***	-0.027***	-0.027***	-0.027***	-0.027***	-0.027***
	(0.002)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
R-squared	0.37	0.33	0.36	0.37	0.34	0.35	0.35	0.35	0.34
Observations	855	576	405	405	711	711	702	702	621
Countries	95	64	45	45	79	79	78	78	69
MeanDepVar	0.045	0.044	0.045	0.045	0.043	0.043	0.044	0.044	0.047
MinimumImpact	0.11	0.041	0.062	0.069	0.058	0.083	0.10	0.087	0.11
MaximumImpact	0.31	0.25	0.24	0.29	0.19	0.23	0.20	0.31	0.20

OLS estimates. Units: Weeks × countries. Period: January 29 to April 1 2020. All regressions include a constant, country-specific time trends, and country fixed effects. Panel B also includes a control for the average prayer search share during the previous week. Robust standard errors clustered at the country level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level.

Result: The growth rate in prayer search shares is not larger for the more religious. Only when accounting for prayer search shares during the previous week.