

Searching for the Gods: Internet Search as a Measure of Religious Practice in China

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Abstract

Scholars of Chinese religion face a persistent data problem. Official statistics are opaque; surveys suffer from preference falsification and coarse coverage; and both track religiosity through denominational identity and registered venues, missing the diffused practices that pervade Chinese life without affiliation. Using data from Baidu, China's dominant search engine, I introduce an unobtrusive, national-scale measure of religiosity. Search volumes track each tradition's liturgical calendar and align with demographic benchmarks for Christians and Muslims. For Buddhism, they diverge from identity- and venue-based estimates, revealing across North China a population of unaffiliated practitioners invisible to existing instruments. After mapping the field's institutional and folk layers, I demonstrate its analytical potential with the COVID-19 pandemic: local outbreaks trigger surges in searches for prayer and the Great Compassion Mantra, an incantation recited beyond Buddhist congregations, while denomination-specific scriptures show no change. Even under state atheism, crisis turns citizens toward religion, through practices requiring no belonging.

Keywords: religiosity; measurement; internet search; diffused religion; folk religion; COVID-19; China

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Introduction

While officially a Marxist secular regime, China has witnessed a profound religious revitalization across all sectors of society in the post-Mao era (Cook, 2017; Yang, 2011; Waldron, 1998; Liang, 2017). This growth is visible in the expansion of institutionalized religions, including Protestantism, Buddhism, Daoism, and Islam, which have significantly increased their numbers of venues and practitioners (Sun, 2017; Birnbaum, 2003; Chi-Tim, 2003; Dillon, 1994). Simultaneously, communal folk practices like deity and ancestor worship have defied their historical label of “feudal superstition” to experience a robust local revival (Dean, 2003). Parallel to these shifts is a rising demand for individualized semi-religious practices, such as geomancy (风水) and fortune-telling (算命), which operate largely outside formal institutional structures but command significant cultural salience in contemporary China (Yang and Hu, 2012; Kuo, 2009; Baum, 2021; Bruun, 2003).

Despite significant scholarly attention to China’s religious revival, empirical inquiry remains constrained by a persistent data deficit. First, conventional measurement tools do not match the character of Chinese religion. Governmental registries and large-scale surveys are built to capture the state-sanctioned “red market” of institutional religion and the exclusive denominational identities it presumes (Yang, 2006); they systematically overlook the “diffused” practices that permeate daily life outside formal organizations (Yang, 1961; Yang and Hu, 2012). Second, these sources offer at best static snapshots: collected infrequently and at coarse geographic resolution, they cannot track a religious field in motion. Third, the authoritarian political environment compromises self-reports: because religiosity can carry professional and political costs, respondents might conceal beliefs and practices to align with perceived state expectations (Hoover and Xu, 2025).

To address these challenges, I propose internet search behavior as an unobtrusive measure of religiosity, using data from Baidu, China’s dominant search engine. The measure has several advantages. First, internet search is behavioral: it registers what people seek rather than what they claim to be, and therefore captures the diffused practices that unfold outside registered

venues and denominational categories, from deity worship to divination, alongside the “red market” of institutional faiths.¹ Second, it offers far finer spatial and temporal resolution than conventional sources: available daily and at the prefecture level, it can compare hundreds of localities and track religious interest as events unfold. Finally, a search has no interviewer and no audience, so it reflects revealed rather than stated preferences, capturing demand that respondents conceal under direct questioning.

I collect data from Baidu, China’s dominant search engine, and validate search volumes as a measure of religiosity that reaches both the denominational and the diffused layers of the field. Temporally, search volumes follow each tradition’s own liturgical calendar, evidence that the measure registers actual religious activities rather than idle curiosity: queries for Christian resources peak on Sundays, Buddhist texts peak on the first and fifteenth days of the lunar month, and individual deities are searched precisely on their festival days. Spatially, search intensity converges with demographic benchmarks where belonging and practice coincide, as they do for Christianity and Islam: Bible and Quran searches explain roughly half of the provincial variation in Christian and Hui Muslim populations. For the diffused layer of the field, however, the measure diverges from traditional metrics exactly as the concept of diffused religion predicts: search intensity for the Great Compassion Mantra (大悲咒) is uncorrelated with either self-identified Buddhist shares or registered temple density, revealing a large population of unaffiliated practitioners invisible to every existing instrument.

I then map eight religious words across prefectures and show that the two layers of the religious field occupy different geographies. Scriptures of the bounded traditions sit where their believers live: Quran searches concentrate in the Muslim Northwest, and Bible searches in the historical strongholds of Chinese Christianity. Practices of the diffused layer instead spread without regard to any institutional footprint: Mazu is searched along the entire southeast coast, the God of Wealth and fortune telling across the whole Han cultural sphere. Buddhism straddles the two layers, and its geography splits accordingly: searches for the Great Compassion Mantra

¹Throughout the paper I adopt Yang (2006)’s triple-market framework, which divides Chinese religious life into a “red market” of state-sanctioned religion, a “black market” of banned groups, and a “grey market” of legally ambiguous folk practices.

are high in the southeast, where temples and self-identified Buddhists concentrate, but even higher across North China and the Northeast, where both are scarce. Religious venue registries and surveys can chart where believers and temples are; the diffused layer appears only in behavioral data.

Finally, I turn to crisis. When local COVID-19 outbreaks strike, searches for prayer and for the Great Compassion Mantra, an incantation recited far beyond Buddhist circles for protection and healing, rise and remain elevated; the Bible and the Quran, scriptures of bounded communities, do not move. Even in an officially atheist state, crisis turns people toward religion, and the response runs through the diffused practices available to everyone rather than through congregations or doctrinal scriptures.

This paper contributes to the study of the religious field in China in three ways. First, it offers a practical solution to the field's chronic data deficit: a validated, replicable measure of religious practice that circumvents the blind spots of venue registries and the social desirability biases that afflict surveys. Second, it offers new empirical record of China's religious geography, providing national-scale behavioral evidence for the diffused religiosity that scholarship has long described (Yang, 1961; Yang and Hu, 2012). Third, it demonstrates that religion remains a living resource for coping with crisis in an officially atheist state, and that in a society where most people practice without a religious identity, such coping flows through prayer and protective texts open to all rather than through congregations or doctrinal scriptures.

Practicing without Belonging: Religion and Its Measurement in China

The end of Maoist anti-religious campaigns opened the way for a broad revival of institutionalized religion in China (Yang, 2011). Buddhist monasteries have been rebuilt in the thousands and command large lay followings (Birnbaum, 2003); Protestant Christianity has grown into a community of tens of millions spread across official churches and unregistered house churches

(Sun, 2017; Koesel, 2013); Daoist temple networks have been restored (Chi-Tim, 2003), and Islam remains the anchor of communal life for Muslim minorities (Dillon, 1994).

Yet institutionalized religion captures only one layer of Chinese religious life: across successive national surveys, fewer than 15 per cent of Chinese adults claim a religious identity such as Buddhist, Christian, or Daoist.² A second layer, spiritual practice conducted outside religious venues and unattached to any religious identity, saturates the everyday life of many Chinese people. Every Lunar New Year, worshippers queue overnight outside prominent Buddhist temples for the honor of offering the year's first incense,³ and shopkeepers across the country welcome the God of Wealth with firecrackers on the fifth day of the new year. Each June, parents crowd temples and Confucian shrines to pray for their children's success in the college entrance examination.⁴ Fortune telling (算命) and geomancy (风水) sustain a thriving service economy, with feng shui masters advising on apartment purchases and corporate headquarters alike. In South China, ancestral rites draw hundreds, sometimes thousands, of clan members to rebuilt lineage halls; along the southeast coast, Mazu pilgrimages turn out entire townships. Almost none of this activity registers in any survey question about religious affiliation.

The disjuncture is visible within the surveys themselves. In the 2018 CFPS, 36 per cent of respondents report believing in Daoist deities, the Buddha, or a bodhisattva, 58 per cent in ancestral spirits, and 47 per cent in feng shui; in the 2016 wave, 38 per cent report burning incense to buddhas or deities at least once a year, including a third of those who claim no religious identity at all.⁵ Surveys that ask about deities rather than denominations consistently find religiosity several times higher than affiliation figures suggest (Zhang and Lu, 2020), and believers routinely hold beliefs and practices spanning several traditions at once (Yang and

²14.4 per cent in the 2016 China Family Panel Studies (CFPS; Xie and Hu, 2014) and 7.5 per cent in the 2021 Chinese General Social Survey (CGSS; Bian and Li, 2012).

³<https://cn.chinadaily.com.cn/a/201902/05/WS5c5a211ba31010568bdc87e0.html>

⁴<http://edu.people.com.cn/n/2014/0605/c367001-25109453.html>

⁵Author's calculations from the CFPS 2018 deity-belief battery and the CFPS 2016 incense-burning item; full figures are reported in Appendix A. Among respondents who report no religious identity, 31.5 per cent burn incense at least once a year.

McPhail, 2023).⁶

The diffused form of religiosity is the historical mainstream of Chinese religiosity. The instruments through which social science observes religion were built for congregational traditions, in which faith entails exclusive membership. Chinese religious life, by contrast, has long been “diffused” (Yang, 1961): woven into household ritual, communal festivity, and pragmatic exchange with the divine, it demands neither exclusive identity nor formal belonging.

Buddhism illustrates the distinction most clearly, because it lives on both sides of it. As an institutional religion, it possesses codified scriptures, monasteries, and ordained clergy. But its deities and texts long ago traveled beyond this institutional form. Guanyin (观音) became a universal source of protective power worshipped far beyond any sangha (Yü, 2001), and spells such as the Great Compassion Mantra have circulated since medieval times as instruments of blessing and protection, copied and recited by laypeople with no tie to a monastery (Copp, 2014). Buddhism, therefore, exists both as an institutional religion that registries can count and as a diffused practice pervasive among ordinary people who neither identify as Buddhists nor attach themselves to any temple.

Traditional Data Sources and Their Blind Spots

To what extent can existing data sources capture this two-layered field, and especially its diffused layer? Unlike the governments of Canada, India, or Brazil, which record religious identity in their national censuses, the Chinese state collects no such information. What it does collect is data on registered religious venues. Under Chinese regulatory frameworks, all religious venues must register with state authorities to secure legal recognition, and aggregating these administrative records allows researchers to map the supply-side geography of religion and analyze regional variation in the institutional footprint of physical worship spaces. Scholars primarily rely on two conduits for this data: microdata from the 2004 National Economic Census, which locates sites belonging to the five state-sanctioned religions (Yang et al., 2019),

⁶Among CFPS 2018 respondents who believe in Daoist deities, most also believe in the Buddha or a bodhisattva (Appendix A).

and the up-to-date registry of the National Religious Affairs Administration, which is restricted to Buddhist and Daoist venues.

The limitation of this source follows directly from its design: it observes venues, and only officially sanctioned ones attached to one of the five recognized traditions, namely Buddhism, Daoism, Protestantism, Catholicism, and Islam. In the terms of the triple-market framework (Yang, 2006), registries capture the “red market” alone. They miss the “grey market” of institutionalized but unregistered groups, including Protestant house churches, underground Catholic communities loyal to the Vatican, and small Buddhist congregations (Sun, 2017; Koesel, 2013; Mok, 2025; Huang, 2012; Moser, 2013; Mariani, 2019), as well as the “black market” of banned groups labeled evil cults (邪教), whose activities lie beyond the reach of any official record. Diffused religiosity lies still further beyond their reach: ancestor worship, local deity veneration, fortune telling, and geomancy are practices without membership rolls or, in many cases, without fixed venues at all, and the folk uses of Buddhist texts described above leave no more trace in a temple registry than a household’s incense does. A data source built to count buildings cannot, even in principle, observe a religious life that happens outside them.

Another important source of data is national surveys. National surveys on religiosity in China are a recent development, pioneered by Purdue University’s 2006 Spiritual Life Study of Chinese Residents (Yang et al., 2007). Early instruments transplanted the Western template directly, asking respondents to name a denominational affiliation, the very category that, as shown above, most Chinese practitioners do not claim. Recent instruments have improved on this design: the China Family Panel Studies, for instance, has shifted from denomination-based to deity-based questions, asking whether respondents believe in the Buddha, Daoist deities, or Allah rather than whether they “belong” to a religion (Xie and Hu, 2014; Zhang and Lu, 2020). This innovation captures far more of the religious field, yet its coverage of diffused religiosity remains partial: belief in a deity is still only one dimension of a religious life enacted through rites, festivals, divination, and geomancy, and survey batteries accommodate at most a handful of such practice items.

A second obstacle is measurement error driven by political sensitivity. In Western contexts, social desirability bias typically leads respondents to over-report religiosity (Hadaway, Marler and Chaves, 1998; Brenner, 2011, 2012*a,b*); in China, the incentives run in the opposite direction. Respondents face political pressure to under-report their faith, and the pressure applies equally to behavioral items: admitting to practices officially labeled “feudal superstition” or to attendance at unregistered churches is scarcely less sensitive than claiming a religious identity. The pressure is particularly acute for state employees, whose career advancement depends on political reliability and whose eligibility for Chinese Communist Party membership is formally conditional on the absence of religious belief. Fear of professional or political repercussions thereby produces preference falsification, and many conceal their religious identity from surveyors.⁷

The final constraint is low temporal and spatial resolution. Because surveys are fielded infrequently, often with a two to three year gap between waves, they offer static snapshots that cannot capture immediate reactions to real-world events, leaving scholars unable to observe how religious demand shifts during moments of acute social stress. Spatial coverage is equally coarse: national surveys are sampled to be representative at the national level, so provincial estimates rest on a small number of county sampling units, and analysis below the province is out of reach entirely.

Internet Search Data as a Behavioral Measure of Religiosity

In recent years, social scientists have increasingly turned to digital trace data to investigate social and political phenomena (Brady, 2019). Among these emerging sources, internet search volume has proved to be a particularly powerful tool for capturing revealed preferences and informational demands. The act of conducting a search query often reveals dispositions that individuals are reluctant to express in public settings, ranging from racial animosity (Stephens-

⁷Consistent with this account, Hoover and Xu (2025) finds that CCP members become more likely to disclose their religious affiliation after retirement, when the career risks of doing so have diminished.

Davidowitz, 2014) and migration intent (Qin and Zhu, 2018) to private religious devotion (Bentzen, 2021). I argue that internet search data is a valid way to measure religious interest in China because it captures how individuals actively seek information to sustain their faith within both private and communal spheres.

First, the internet serves as a vital medium for private religious practice, and search queries capture that practice at population scale. On the institutional layer, believers use digital platforms to read scripture, listen to sermons and chants, and study religious teachings; queries for specific scriptures thus provide a direct proxy for religious demand. On the diffused layer, devotees search for information on popular deities such as Mazu, Guanyin, and Guan Yu; consult online fortune-telling and lot-drawing (qiuqian) services; check almanacs for auspicious dates and temple pilgrimage seasons; and look up geomantic principles before decisions like buying a home or scheduling a wedding. Beyond private devotion, search also supports the practical side of communal religious life. Believers look up nearby places of worship, check the dates of festivals and services, and prepare for participation: choir members search for hymn scores, and congregants for study materials.

The measure addresses the central limitations of venue data and survey research. First, and most importantly, it captures practice rather than belonging, and therefore reaches the diffused layer of the field that no belonging-based instrument can see. The unaffiliated majority documented above practices without joining any organization: a shopkeeper who recites the Great Compassion Mantra for protection, burns incense on the first and fifteenth of the lunar month, and consults a fortune teller before a major decision appears in no registry and answers “no religion” in every survey, yet each of these acts generates search queries. Practices without venues or membership rolls, fortune telling and geomancy among them, leave digital footprints whenever practitioners seek information online. The same logic extends to believers of institutional religions who do not attend state-sanctioned venues: house church Christians appear in no state record, yet their demand for scripture surfaces in search just as that of official congregations does. And because searching requires no exclusive identity, the measure is

especially suitable for East Asian religiosity, in which people engage several traditions at once and worship deities while calling themselves non-religious (Yang and McPhail, 2023; Zhang and Lu, 2020).

Second, the measure is unobtrusive and private. Search queries are entered in private, with no interviewer present and no answer to justify. People seeking scripture, a worship site, or a divination service online face none of the pressures that lead survey respondents to conceal their beliefs and practices, so digital traces reflect religious demand that direct questioning might suppress.

Third, the measure offers the spatial and temporal resolution essential for studying the dynamics of the religious field across regions and over time. The Baidu Index approximates a daily census of search behavior at the prefecture level, in contrast to survey waves that arrive years apart. Researchers can therefore compare hundreds of localities simultaneously and observe how religious interest responds to unfolding events in real time, a capability the second half of this paper exploits.

Baidu Index as a New Data Source

A search-based measure is only as good as the population it can observe, so internet penetration matters. In China, Internet connectivity has expanded rapidly over the past decade: 53.2 per cent of the population had internet access in 2017, rising to 79.7 per cent by the end of 2024, driven by the near-universal adoption of affordable smartphones, and rural penetration has reached roughly 70 per cent.⁸ Search behavior can therefore register religious interest across essentially the whole country, though the remaining digital divide implies that the oldest and most rural believers are underrepresented, a limitation I return to in the conclusion.

The data this paper relies on come from Baidu, China’s dominant search engine. Because the Great Firewall keeps Google and other foreign platforms inaccessible to most domestic users,

⁸Figures are from the China Internet Network Information Center (CNNIC); Stockmann and Luo (2025) find that official statistics, if anything, understate the true share of internet users.

Baidu holds a near-monopoly on search within China. Baidu publishes a public repository of search volumes, the Baidu Index, available daily and disaggregated to the prefecture level, the resolution on which the analyses below are built.

Before turning to validation, one preliminary question needs an answer: are religious queries a marginal niche, or a substantial category of online information-seeking? To find out, I benchmark the 2022 search volume of religious keywords against secular terms representing pressing needs and professional ambitions. The religious keywords fall into three groups: the most searched scripture of each major institutional religion, namely the Great Compassion Mantra (大悲咒) for Buddhism, the Scripture of Purity and Tranquility (清静经) for Daoism, the Bible (圣经) for Christianity, and the Quran (古兰经) for Islam; two popular deities, Mazu (妈祖) and the God of Wealth (财神); and two folk services, geomancy (风水) and fortune telling (算命). The secular benchmarks cover career advancement, the CCP membership application (入党申请书) and the civil service examination (公务员考试), and pressing health concerns: insomnia (失眠), hospital (医院), anxiety (焦虑), and depression (抑郁).

Table 1: Relative Search Salience

Non-Religious Word (Secular)	Index	Religious Word	Index
CPC Membership Application (入党申请书)	7.356	Great Compassion Mantra (大悲咒)	10.415
Civil Service Exam (公务员考试)	1.328	Bible (圣经)	1.652
Insomnia (失眠)	1.124	Fortune Telling (算命)	1.511
Hospital (医院)	1.000	Mazu (妈祖)	0.565
Anxiety (焦虑)	0.576	God of Wealth (财神)	0.539
Depression (抑郁)	0.506	Feng Shui (风水)	0.404
		Quran (古兰经)	0.385
		Scripture of Purity and Tranquility (清静经)	0.360

Note: Each entry is the term’s total national search volume in 2022 divided by that of “hospital” (医院); hospital therefore equals 1.00, and every value reads as a multiple of its search volume.

Table 1 reports each term’s total 2022 search volume divided by that of “hospital” (医院),

so that hospital equals 1.00 and every entry reads as a multiple of its volume: a value of 1.5 means the term was searched half again as often as hospital. Religious information-seeking is anything but marginal by this benchmark. The Great Compassion Mantra alone draws more than ten times the search volume of hospital, the Bible and fortune telling half again as much, and even the least searched scripture reaches roughly a third of it, comparable to anxiety and depression, two of the most pressing secular concerns of the period.

Validating the Measure: Liturgical Cycle and Spatial Distribution

Having established the substantial magnitude of religious search volume, I evaluate its validity as a measure of religious practice. If search data captures religious practices in the real world, three patterns should follow. First, search volumes should follow each tradition’s own liturgical calendar, and no other’s. Second, the spatial distribution should converge with existing benchmarks precisely where those benchmarks are credible: for congregational or ethnically bounded traditions, in which practice and identity largely coincide, search intensity should align with survey and demographic data. Third, and just as importantly, the spatial distribution should diverge from denomination-based measures where theory says they are blind: for diffused traditions, whose practitioners claim no identity and frequent no registered venue, search intensity should be largely orthogonal to reported religious affiliation figures or venue counts.

Liturgical Calendars

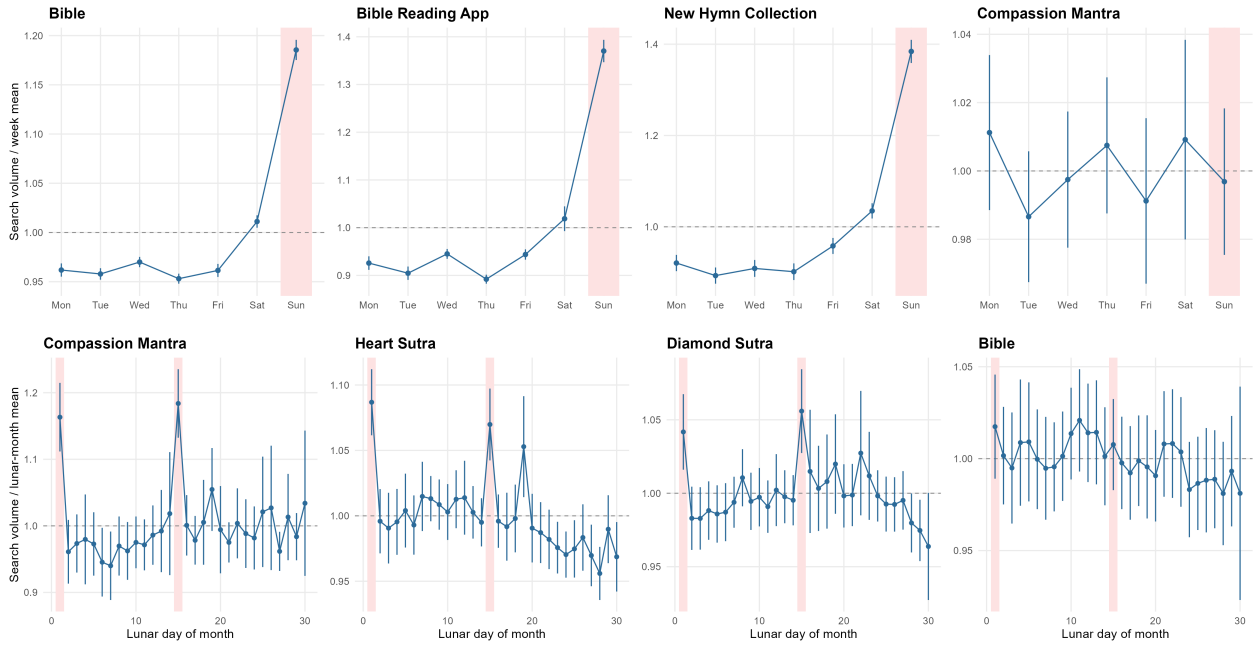
I begin with the rhythms of worship. Given the centrality of Sabbath observance to Christian practice, queries for Christian resources should peak on Sundays. I analyze daily national search volumes for 2019–2022 across three indicators: the “Bible” (圣经), “Bible Reading” (精读圣经), the most popular scripture application in China, and the “New Hymn Collection” (新

编赞美诗), a prominent online hymn repository. Figure 1 (upper panels) shows exactly this pattern: net of week-to-week variation, all three terms surge sharply on Sundays. The Great Compassion Mantra, by contrast, shows a Sunday effect statistically indistinguishable from zero.

Diffused practice follows a different calendar. The ritual life of Chinese popular religion, lay Buddhist and folk alike, is organized around the lunar calendar. Since imperial times, worshippers present incense and recite scriptures on the first and fifteenth days of each lunar month. Besides this rhythm, each deity commands festival days of its own. For example, households welcome the God of Wealth back to earth on the fifth day of the first lunar month, and Guanyin’s birthday, enlightenment, and renunciation are celebrated on the nineteenth of the second, sixth, and ninth months, respectively.

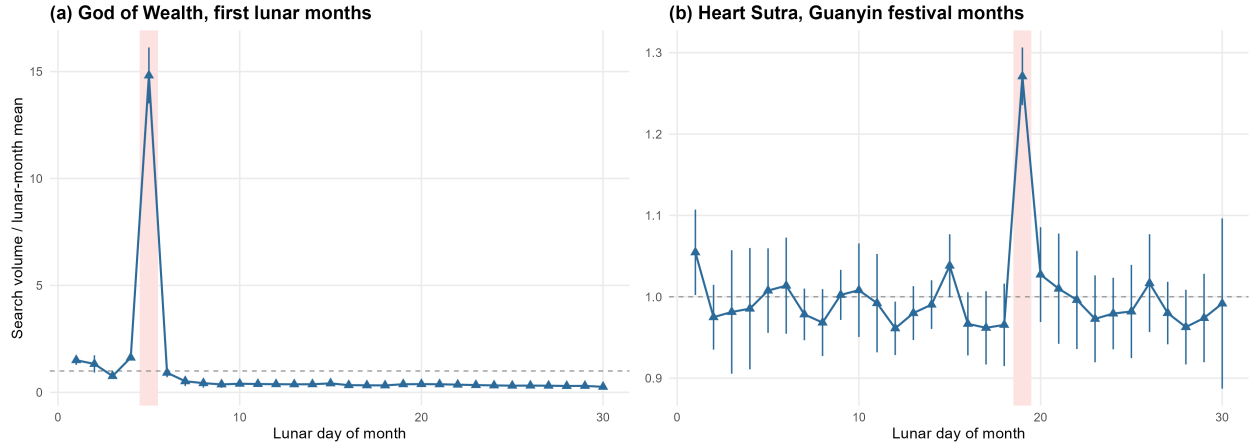
Search behavior reproduces both layers of this calendar. Figure 1 (lower panels) shows this pattern: net of month-to-month variation, searches for the Great Compassion Mantra rise 16% above the monthly mean on the first of each lunar month and 18% on the fifteenth. The rhythm extends across Buddhist texts in proportion to their ritual function. The Heart Sutra rises 7–9% and the doctrinal Diamond Sutra 4–6%, while Bible searches exhibit no lunar rhythm whatsoever. Figure 2 shows the deity-specific calendar. Within the first lunar month, God of Wealth searches explode on precisely the fifth day, reaching 13 to 16 times the monthly mean in every year observed. Within the three festival months of Guanyin, searches for the Heart Sutra, the bodhisattva’s own scripture, rise 27% above the monthly mean on precisely the nineteenth. Each tradition’s searches follow its own liturgical calendar, and each deity is sought on its own festival day, indicating that the data registers the pulse of actual worship rather than casual curiosity.

Figure 1: Search Activity Follows Each Tradition's Liturgical Calendar



Note: Upper panels: daily national search volume relative to its week mean, by day of week (2019–2022); Sunday shaded. Lower panels: daily national search volume relative to its lunar-month mean, by lunar day (2019–2022); the first and fifteenth days shaded. Normalizing within weeks or lunar months is equivalent to week or lunar year–month fixed effects, removing secular trends, pandemic-period shocks, and seasonality; whiskers are 95% confidence intervals. The Compassion Mantra's wider intervals in the upper panels reflect its lunar-driven volatility: the new- and full-moon spikes fall on a rotating day of the week.

Figure 2: Deity-Specific Festival Days in Search Behavior



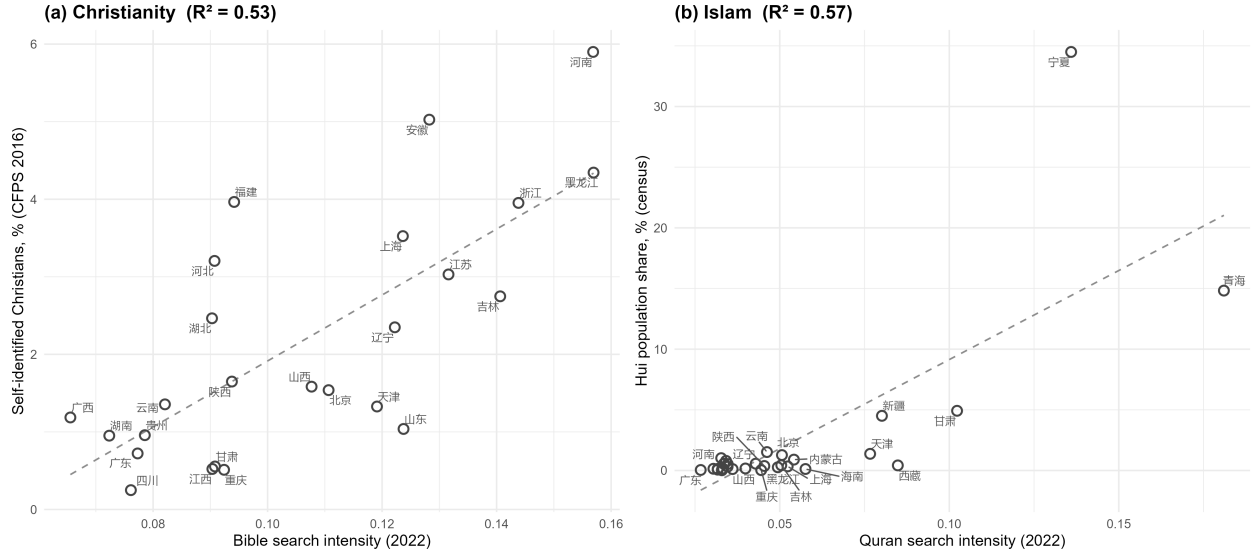
Note: Daily search volume relative to its lunar-month mean, averaged across 2019–2022, with 95% confidence intervals; each panel shades the deity’s festival day. Panel (a): within the first lunar month, God of Wealth searches reach 13 to 16 times the monthly mean on the fifth day in every year observed; the profile sits below one on ordinary days because the day-five surge inflates the monthly mean. Panel (b): within the second, sixth, and ninth lunar months, Heart Sutra searches rise 27% above the monthly mean on the nineteenth day, Guanyin’s festivals; the universal first- and fifteenth-day observances are also visible.

Spatial Convergence for Congregational Traditions

I next examine geographic alignment with offline benchmarks, focusing on Christianity and Islam, the two traditions for which belonging-based data is most informative, since both entail relatively exclusive identities and, in the case of Islam, a strong ethnic boundary. For the Christian population, I derive provincial estimates from the 2016 China Family Panel Studies (CFPS). For the Muslim population, I use the census share of the Hui ethnicity, the largest Sinophone Muslim group; since Baidu is a Sinophone platform, this deliberately excludes Turkic-speaking groups whose online activity occurs in other scripts.⁹

⁹Unlike Google Trends, which provides a normalized search index (0–100), the Baidu Index reports absolute search volumes. To remove geographic bias from population size and internet penetration, I divide each religious term’s volume by the combined volume of six neutral terms (the characters 二 and 三, the digits 2 and 3, and the letters c and d), queries that arise mainly from stray keystrokes and track a locality’s overall search activity. See Appendix C for selection criteria and validation. The calendar analyses above required no such adjustment, since they compare each national series only with itself over time.

Figure 3: Convergent Validity: Search Intensity and Religious Demographics



Note: Provincial Bible search intensity against the CFPS share of self-identified Christians (a), and Quran search intensity against the census share of the Hui ethnicity (b). Both associations are significant at $p < 0.001$ ($N = 25$ and 31 provinces).

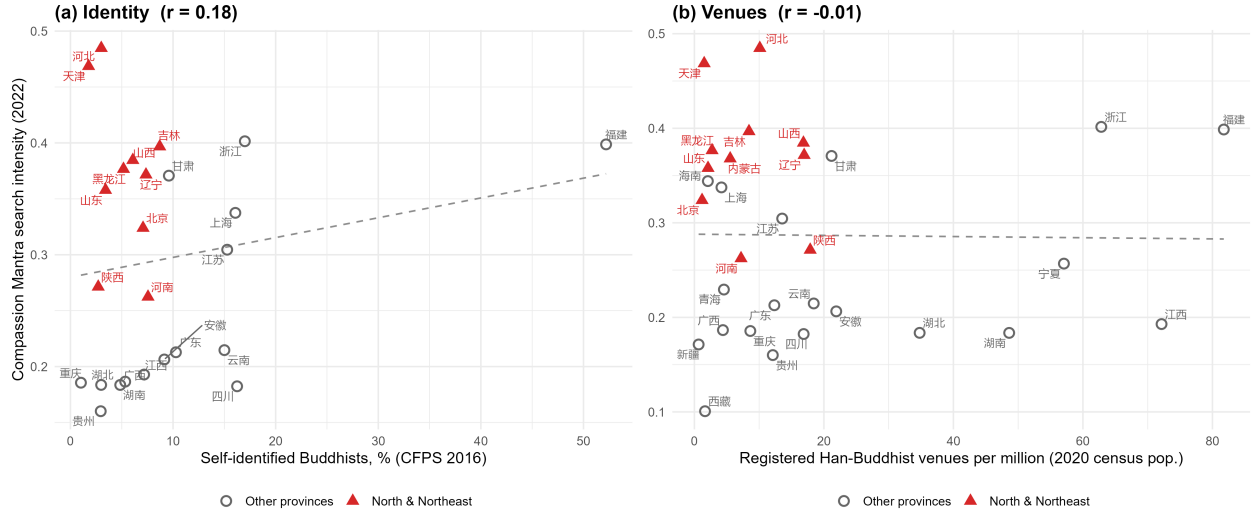
As Figure 3 shows, the alignment is strong: standardized search intensity explains roughly half of the geographic variation in religious demographics, with an R^2 of 0.53 for Christians and 0.57 for Hui Muslims. Where identity is a meaningful marker of practice, search data and institutional measures agree.

Divergence for Diffused Traditions

The diffused character of Chinese Buddhism makes a different prediction: because its texts circulate far beyond self-identified Buddhists, search intensity should correlate weakly, if at all, with affiliation figures or the institutional footprint of temples. Figure 4 tests this using two belonging-based benchmarks: the CFPS share of self-identified Buddhists, and the density of registered Han-Buddhist venues per million residents, computed from the national registry of religious activity sites.¹⁰

¹⁰The registry covers Buddhist and Daoist venues with geocoded locations. I restrict to Han-Buddhist sites, matching the Sinophone user base of Baidu; population denominators are from the 2020 census.

Figure 4: Predicted Divergence: Neither Identity nor Venues Predict Mantra Searches



Note: Provincial correlation between Compassion Mantra search intensity and (a) the share of self-identified Buddhists (CFPS 2016), (b) registered Han-Buddhist venues per million residents (2020 census). Filled triangles mark North and Northeast provinces. Neither correlation is distinguishable from zero ($p = 0.39$ and 0.94 ; $N = 25$ and 31 provinces). CFPS provincial estimates outside the five oversampled provinces rest on a small number of county sampling units; Fujian's value reflects two counties in which over half of respondents identify as Buddhist, and this single point generates the weak positive slope in panel (a): excluding Fujian, $r = -0.01$.

The divergence is stark. The same provincial samples that produced R^2 values above 0.5 for the Bible and the Quran show no relationship for the Great Compassion Mantra: its search intensity is uncorrelated with both self-identified Buddhism ($r = 0.18$, $p = 0.39$) and temple density ($r = -0.01$, $p = 0.94$). Two of the most temple-dense provinces, Jiangxi and Hunan, rank near the bottom in mantra searches, while the North China Plain and the Northeast, where registered temples and identified Buddhists are scarcer, rank near the top. This is not noise: the same northern provinces exhibit the crisp lunar rhythms documented above. Computed province by province, the new- and full-moon spikes in mantra searches average 11.5 per cent above the lunar-month mean across the North and Northeast, slightly larger than in the temple-dense South (Appendix B). The searches are systematic religious behavior often invisible to belonging-based instrument. Together, the three patterns complete

the validation: search volumes follow liturgical calendars in every tradition, converge with demographic benchmarks where belonging-based measures are informative, and diverge exactly where the diffused character of Chinese religion predicts that such measures go blind.

Mapping the Religious Field

With the measure validated, I now turn to spatial analysis. Analyzing standardized search intensity in 2022 across 362 prefecture-level and equivalent units,¹¹ I chart both layers of China’s religious field: the institutional layer that registries and surveys can partially see, and the diffused layer that they cannot.

I measure three categories of religious interest. For the institutionalized religions, I select the most frequently searched scriptures: the Bible (Christianity), the Quran (Islam), the Great Compassion Mantra (Buddhism), and the Scripture of Purity and Tranquility (Daoism). The two Chinese traditions straddle the institutional and diffused layers. The mantra, as discussed above, circulates far beyond the self-identified Buddhists; Daoism likewise lives on both sides of the divide, its deities, ritual specialists, and cosmological ideas pervading folk religious life well beyond its ordained clergy and registered temples. For communal folk belief, I use the two most prominent deities: Mazu, the sea goddess of the southeast coast, and the God of Wealth. For individualized folk practice, I use fortune telling and feng shui. All volumes are standardized by the six-term neutral baseline introduced above.

Table 2 summarizes each keyword’s spatial structure along two dimensions. The Gini coefficient measures concentration: values near zero mean search interest is spread evenly across prefectures, higher values mean it is concentrated in a few places. Moran’s *I* measures spatial clustering: it asks whether high-intensity prefectures tend to border other high-intensity prefectures, so that values near zero indicate interest scattered at random across the map and values approaching one indicate interest organized into contiguous regions. The two

¹¹These comprise prefecture-level cities and prefectures, the four province-level municipalities, and provincially administered county-level cities.

dimensions are distinct: a term can be widespread in level yet strongly clustered in space, or concentrated in a few places that are scattered rather than adjacent. Together they distinguish four geographic types. Quran searches are ethnically bounded, both concentrated and clustered. Mazu searches form a regional corridor, moderately concentrated and the most tightly clustered term in the sample. Bible searches and, notably, mantra searches are widespread in level yet strongly clustered in space, organized into several distinct belts rather than around a single core. The God of Wealth and fortune telling are distributed more evenly in the Han region, neither concentrated nor confined. The remaining two terms occupy intermediate positions, the Scripture of Purity and Tranquility with a northern tilt and feng shui with a southeastern one.

Table 2: Spatial Concentration of Religious Search Interest

Keyword	Gini	Moran's I	p
Quran	0.448	0.581	0.001
Purity & Tranquility	0.381	0.515	0.001
Feng Shui	0.333	0.236	0.001
Mazu	0.271	0.617	0.001
God of Wealth	0.269	0.497	0.001
Compassion Mantra	0.240	0.640	0.001
Bible	0.184	0.668	0.001
Fortune Telling	0.143	0.650	0.001

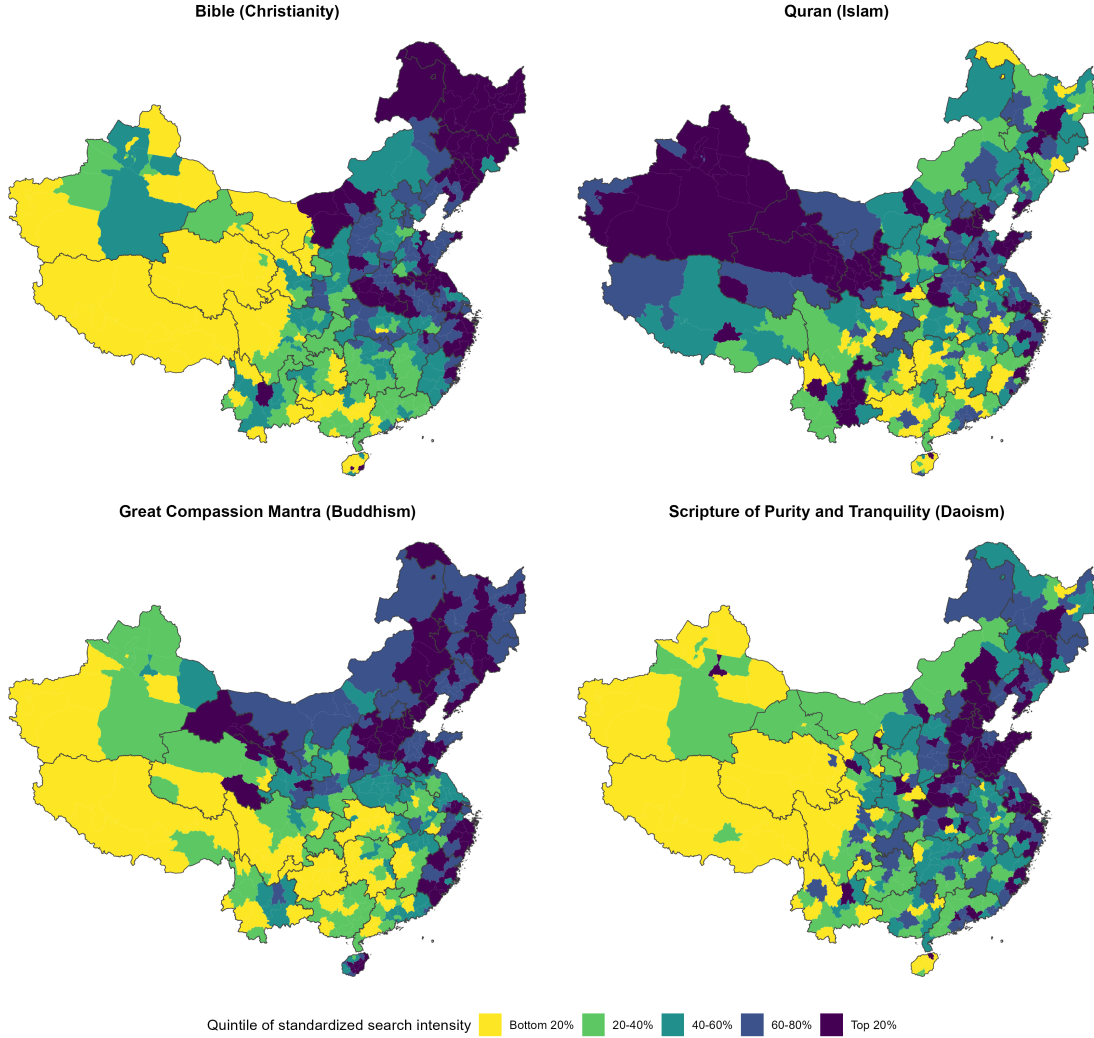
Gini coefficients computed over prefecture-level standardized search intensity; Moran's I uses queen contiguity weights with 999 permutations.

Spatial Distribution of Scriptures

Figure 5 maps the four scriptures. Bible searches exemplify the belt-like type: broadly present across Han China (Gini = 0.18) yet among the most spatially clustered terms in the sample

(Moran's $I = 0.67$). Three belts stand out. The first two are familiar from existing scholarship: North and Central China, the region often called China's Bible Belt (Henan, Anhui, and parts of Shandong), and the southern coastal provinces of Zhejiang and Fujian, with their deep-rooted Christian history (Koesel, 2013; Peng, 2011; Hattaway, 2025; Cao, 2010; Chambon, 2022; Dunch, 2001). The third belt, the Northeast along with western Inner Mongolia, is corroborated by survey data (in the 2016 CFPS, Heilongjiang holds the third-largest Christian share nationally, with Jilin and Liaoning in the top ten) yet remains understudied. Two conjectures about its Christian vitality seem plausible. One is proximity to the Korean Peninsula, whose missionary networks reached the region through its large ethnic Korean community (Ai, 2014; Jung, 2013). The other is the social dislocation of the Rust Belt, where mass layoffs and the erosion of socialist safety nets pushed many toward religion.

Figure 5: Search Intensity for Scriptures of Institutional Religions



Note: Prefecture quintiles of search intensity standardized by the six-term neutral baseline (2022); darker shades indicate higher quintiles, and thin lines mark provincial boundaries.

The Quran is the purest case of bounded geography: the most concentrated term in the sample (Gini = 0.45, Moran's I = 0.58), clustered in a Northwest belt spanning Xinjiang, Ningxia, Gansu, and Qinghai that closely tracks the distribution of China's Muslims.

The Great Compassion Mantra most clearly demonstrates the two layers of the religious field because both operate within a single tradition. Search intensity is high in coastal Zhejiang and Fujian, where registered temples and self-identified Buddhists are concentrated. However, search intensity is even higher across North China and the Northeast, where both institutional

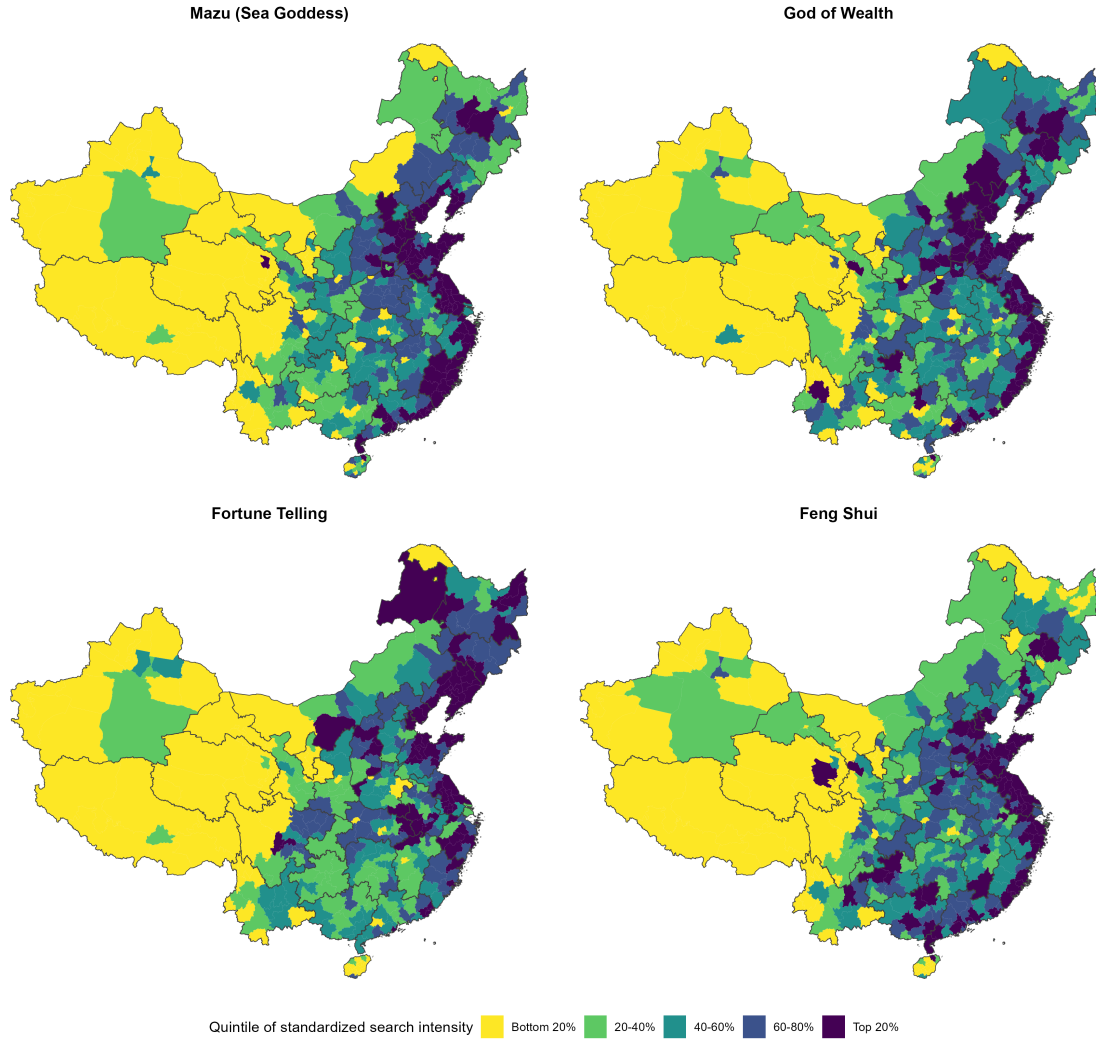
infrastructure and self-identified Buddhists are scarce. This geographic pattern explains why the preceding provincial correlations are flat rather than negative. The mantra is searched regardless of whether Buddhism is formally institutionalized in a given region. Although monastic Buddhism's centers lay in the south by late imperial times, Buddhist texts had long circulated outside monastic control in the north, Buddhist texts have circulated outside monastic control since late imperial times. North China was the heartland of syncretic sects that absorbed these texts into lay practice (Overmyer, 1976; DuBois, 2005). Similarly, the Northeast retains shamanistic traditions such as Chumaxian that have incorporated Buddhist scriptures like the mantra (Deng, 2014).

The Scripture of Purity and Tranquility, one of Daoism's most widely recited texts, is distributed relatively evenly across core Han regions with a northern tilt. The pattern is consistent with the geography of Daoism's two lineages: the text anchors the daily liturgy of the Quanzhen order, born in the North (Komjathy, 2013), while the southern Zhengyi tradition centers on ritual programs rather than scriptural recitation.

Folk Deities and Practices

I now turn to folk beliefs and practices, from the communal cult of Mazu to the household worship of the God of Wealth and the individualized services of fortune telling and feng shui (Yang and Hu, 2012). Lacking recognized institutional status, they are excluded by design from venue registries and rarely captured by surveys.

Figure 6: Search Intensity for Folk Deities and Practices



Note: Prefecture quintiles of search intensity standardized by the six-term neutral baseline (2022); darker shades indicate higher quintiles, and thin lines mark provincial boundaries.

Mazu displays the regional-corridor type (Moran's $I = 0.62$). The epicenter lies in Fujian, around Putian and Meizhou Island, the historical hearth of Mazu worship, from which high intensity radiates along the entire coastline, south into Guangdong and north through Zhejiang to the Bohai Rim, mirroring the diffusion of Mazu temples along historical maritime trade routes. Inland China shows negligible interest.

The God of Wealth and fortune telling define the opposite pole: pan-Han universality. Both spread across the Han-majority provinces with the lowest concentration in the sample

(Gini = 0.27 and 0.14, respectively), shared by the entire Han cultural sphere rather than confined to any locality. Feng shui occupies an intermediate position: moderately concentrated (Gini = 0.33) with a distinct southeastern coastal tilt, clustered in the Yangtze Delta, Fujian, and Guangdong, where geomancy remains woven into the commercial and lineage cultures of the South.

Taken together, the maps show two geographies of China’s religious field. The institutional layer follows history and ethnicity: Christianity follows the history of its growth, from the old mission fields of the coast, through the post-Mao revival heartland of the North China Plain, to the newer northeastern frontier; Islam follows ethnic settlement; Buddhism and Daoism follow the footprint of registered temples. The diffused layer follows cultural geography instead: the God of Wealth and divination practices span the entire Han sphere, Mazu traces the southeastern coast, and lay Buddhist devotion forms a northern belt detached from temples and self-identified Buddhists. Where the two layers share a tradition, as in Buddhism, they occupy different territories. Registries and surveys record the first geography; the second is visible only in digital trace data.

Religious Coping in Crisis: COVID-19 as a Case Study

Having established that search data can recover the structure of China’s religious field, I now turn to a theory-driven empirical application, taking the COVID-19 pandemic as the case. Religion is a common coping resource in times of crisis: religiosity rises amid war, terrorist attacks, and natural disasters (Zussman, 2014; Sinding Bentzen, 2019; Bauer et al., 2016). The COVID-19 pandemic was exactly such a crisis. Marked by fear of infection, grief, and uncertainty about the future, it produced a worldwide surge in psychological distress (Daly, Sutin and Robinson, 2022; Vindegaard and Benros, 2020). Bentzen (2021) documents a global rise in Google searches for “prayer” during the pandemic’s early months. Her data, however, exclude China, where Google is inaccessible, leaving unexamined the world’s largest officially atheist society. Did the pandemic turn people toward religion there?

The preceding sections predict where any religious response should appear. In China, only a small minority claims a religious identity, and the traditions that require one, Christianity and Islam, may well comfort their own members in a crisis. However, their scriptures mean little to the vast majority of Chinese people. For that majority, the accessible resources are the diffused practices documented above. If the pandemic drove people toward religion, the response should surface mainly in these widely accessible practices, while the scriptures of bounded traditions should move only as far as their own small communities do.

Two expectations follow. First, local outbreaks should intensify the turn to religion as a coping resource. Second, the turn should concentrate in the diffused layer of the religious field: in practices that any person can take up, rather than in the traditions of bounded communities, whose response can extend no further than the communities themselves.

Testing these expectations requires data that no survey can supply. Survey waves arrive years apart and ask mainly about affiliation, while crisis coping appears as a transient rise in practice among people who never adopt a religious identity. Therefore, observing it demands data with fine temporal and spatial resolution. Daily, prefecture-level search data provides exactly this margin.

Empirical Approach and Results

I measure religious search with daily, prefecture-level volumes for five outcomes. The first captures general demand: the sum of the two most common Chinese terms for prayer (祈祷 and 祷告), words that belong to no particular tradition. The remaining four are the central scriptures of each tradition, and they span the two layers of the field. The Great Compassion Mantra represents the diffused layer: as the validation showed, it is recited for protection and healing far beyond self-identified Buddhists. The Bible and the Quran represent the bounded traditions, whose scriptures circulate little outside their own communities. The Scripture of Purity and Tranquility, the most searched Daoist text, sits in between: Daoism requires no exclusive membership, but the text circulates more narrowly than the mantra. The

expectations of the previous section thus become a contrast: outbreaks should raise searches for prayer and the mantra, and should leave the Bible and the Quran unmoved.

Each outcome is divided by the neutral-term baseline, so that estimates read as changes in religious search relative to overall search activity. The normalization addresses the principal mechanical confounder: the pandemic increased time spent online, and raw search counts would rise for that reason alone. The denominator absorbs such level shifts.¹²

Data on the pandemic come from Sina News, a major aggregator that compiles official reports from the National Health Commission and local Centers for Disease Control. Combining the case data with the search data yields a prefecture-day panel running from 11 January 2020, when systematic reporting began, to 31 October 2022, before the reporting system deteriorated in the final weeks of the zero-COVID policy. Summary statistics appear in Appendix D.

My main treatment variable is an indicator for an ongoing outbreak: $Outbreak_{it}$ equals one if prefecture i reported any new case during the seven days up to and including day t . A seven-day window reflects the fact that an outbreak is experienced as an episode rather than a sequence of disconnected daily reports; results using a same-day indicator are similar and reported in the appendix.

I estimate a two-way fixed effects model,

$$Y_{it} = \beta Outbreak_{it} + \alpha_i + \delta_t + \varepsilon_{it}, \quad (1)$$

where α_i and δ_t are prefecture and date fixed effects and standard errors are clustered by prefecture. The coefficient β captures the total effect of living through a local outbreak. I complement this with estimates of dynamic effects: how search activity changes day by day around the start of a local outbreak, from two weeks before to four weeks after, relative to quiet periods with no recent outbreak. The construction of outbreak onsets and the comparison group is described in Appendix E.

¹²Appendix C shows directly that local outbreaks raise baseline search activity, which motivates the normalized outcome. For the same reason I include no controls for mobility or internet usage on the right-hand side: both are consequences of the pandemic, and conditioning on them would distort the estimates.

Table 3 presents the main estimates. The coefficients give the change in each search share during an ongoing outbreak; dividing by the outcome means at the bottom of the table converts them into percentage terms. An ongoing local outbreak raises prayer searches by about 8 per cent of their usual level and searches for the Great Compassion Mantra by about 4 per cent; both estimates are precise. The Scripture of Purity and Tranquility, whose circulation the preceding sections showed to be narrower, does not respond, and searches for the Bible and the Quran do not move either: point estimates are near zero and statistically insignificant. The pattern matches the two expectations stated above. Outbreaks drive the turn to religion, and the increase is carried by prayer and by the one scripture that circulates far beyond its home tradition, not by the scriptures of bounded communities.

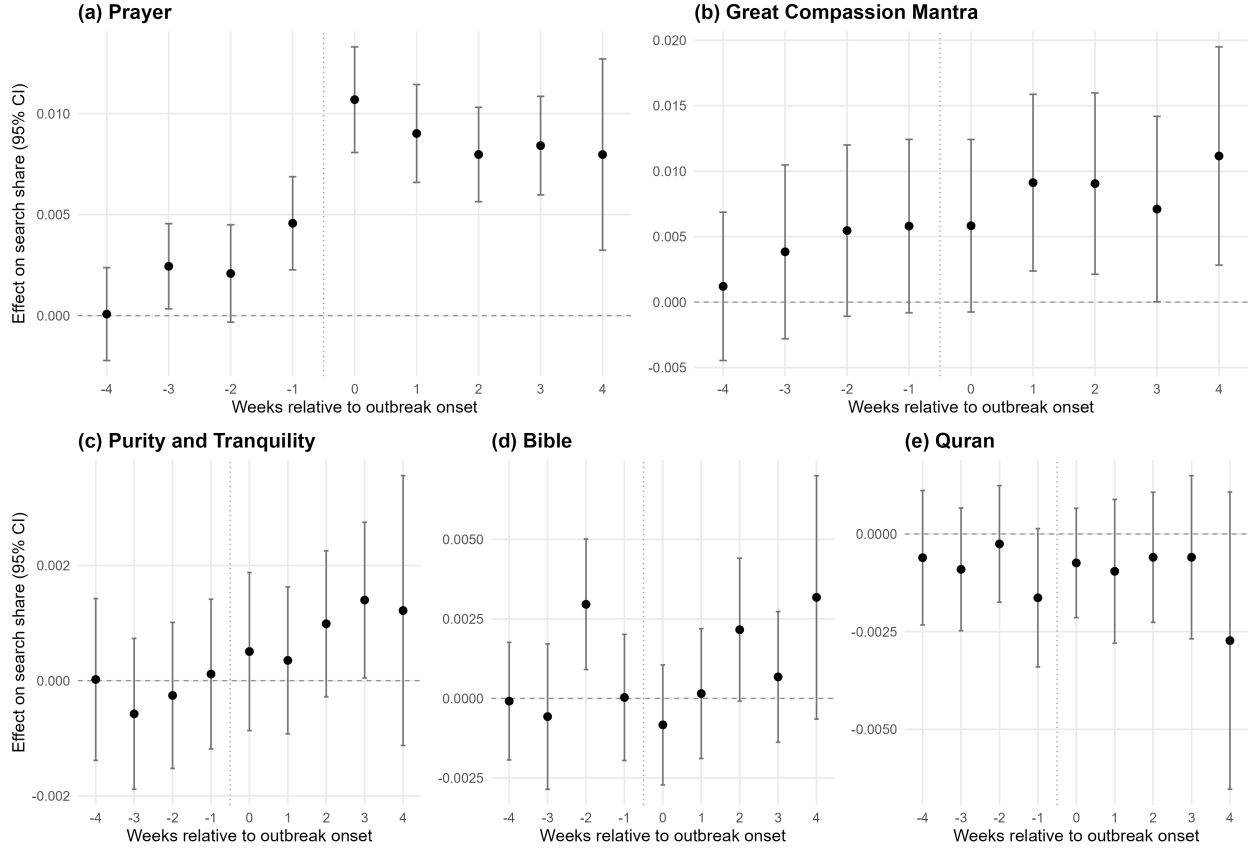
Table 3: Ongoing Outbreak and Religious Search Share

	Pray	Compassion	Tranquility	Bible	Quran
Outbreak (Past 7 Days)	0.008***	0.007***	0.001	−0.001	0.000
	(0.001)	(0.003)	(0.000)	(0.001)	(0.001)
Observations	359 216	359 216	358 574	359 216	359 216
R2	0.230	0.404	0.183	0.195	0.278
Adj. R2	0.227	0.402	0.180	0.192	0.275
Std. errors cluster	prefecture	prefecture	prefecture	prefecture	prefecture
Mean of dep. var.	0.0949	0.1928	0.0297	0.1156	0.0385
Number of prefectures	358	358	358	358	358
Number of days	1,025	1,025	1,025	1,025	1,025

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Outbreak (7d) equals one if any new case was reported during the past seven days.

Figure 7: Dynamics of Religious Search Around a Local Outbreak



Note: Weekly averages of daily estimates, relative to prefecture-days with no outbreak in the previous thirty days, with 95% confidence intervals; the dotted line marks the week in which the first case is recorded. The gradual rise over weeks -3 to -1 in panel (a) reflects the lag between actual transmission and official recording rather than differential trends: four weeks before onset, soon-to-be-affected prefectures are indistinguishable from quiet periods.

Figure 7 traces the dynamics in weekly windows; daily estimates appear in Appendix E. Four weeks before an outbreak is recorded, prayer searches in soon-to-be-affected prefectures are indistinguishable from quiet-period levels. They edge upward over the three weeks before onset, reaching roughly a third of the later effect in the final week.¹³ This early rise reflects the lag between transmission and official confirmation: residents learn of an emerging outbreak through mass testing and word of mouth before the first case is recorded. In the week the

¹³In the daily estimates, the coefficients for days -14 to -7 are jointly insignificant ($p = 0.16$); those for the final pre-onset week are jointly significant but small ($p = 0.02$).

outbreak is recorded, prayer searches rise to about 10 per cent above their usual level and remain 8 to 9 per cent higher through the fourth week. Mantra searches are indistinguishable from quiet periods before and during the onset week, rise by about 5 per cent from the second week, and stay elevated thereafter. The three remaining scriptures, in panels (c) through (e), show nothing comparable: estimates hover near zero at every horizon, with no break at onset and no sustained movement in either direction.¹⁴

Why do the Bible and the Quran stay flat? The explanation follows from the structure of the field documented earlier. Islam in China runs along ethnic lines and does not proselytize among the Han majority; Christianity, despite its growth, is understood as a distinct identity that requires conversion. Their scriptures are unfamiliar to those outside these communities, so a crisis can raise their search volumes only as far as the communities themselves extend, and the communities are small. The Great Compassion Mantra faces no such boundary. As the spatial and calendar evidence showed, it is recited by people who claim no religious identity at all, as an act of protection and healing rather than of doctrinal study. When a crisis strikes, the population that can reach for the mantra is, in effect, the entire Han cultural sphere.

These results give the identity–practice paradox documented at the outset its dynamic form. An affiliation measure would have recorded nothing: coping of this kind involves no conversion, and the share of self-identified believers need not move at all. Measured by practice, however, the turn to religion is unmistakable. Religious coping in China operates through the practices available to the unaffiliated, which is precisely where instruments built around belonging cannot see it.

¹⁴Appendix E reports the robustness checks. The estimates are unchanged when the seven-day outbreak indicator is replaced with a same-day new-case indicator, the narrowest treatment definition available, and when the sample is restricted to May 2020 onward, dropping the initial wave in which the Wuhan outbreak dominated national attention and local case counts carried little independent variation.

Conclusion

This study proposes internet search volume as an unobtrusive behavioral measure of religious practice in China, one that reaches both the institutional layer of the field and the diffused layer that existing data sources cannot capture. The measure passes three validation standards: search volumes follow the liturgical calendars of each tradition, converge with demographic benchmarks where belonging-based data are informative, and diverge exactly where the diffused character of Chinese religion predicts that such data go blind. Spatial analysis reveals a religious field with two geographies: institutional traditions follow history and ethnicity, while diffused practices span the Han cultural sphere or trace folk-cultural regions, including a belt of text-based Buddhist devotion across North and Northeast China that no registry or survey records. The COVID-19 application shows that local outbreaks pushed people toward religion, and that the response concentrated precisely in the diffused layer: searches for prayer and the Great Compassion Mantra rose and persisted, while the scriptures of bounded traditions did not move. Even in an officially atheist society under tightening regulation, crisis demand for religion is real, and it flows to the practices that anyone can take up.

Two limitations bound the approach. The first concerns coverage. Internet penetration reached most of China only in the 2010s, so the method cannot recover longer historical trends; and even within the covered period, the digital divide means that older and rural believers, groups central to folk religious life, remain underrepresented online. The neutral-term baseline corrects for differences in overall search activity across places, but it cannot recover those who never search: the estimates in this paper are therefore best read as a lower bound on the religiosity of the least connected populations. The second limitation is conceptual: search volume measures information-seeking behavior, not affiliation or attendance. In a field where syncretic practice routinely outruns exclusive identity, this is also the method's core advantage, since behavioral traces capture the many who practice without belonging, the very population that surveys and registries miss. But the trade-off is real: for questions that turn on formal membership, congregational life, or the depth of individual commitment, search data cannot

substitute for surveys and fieldwork, and the measure is best used alongside them rather than in their place.

The approach opens two lines of future research. First, folk practices remain a central element of contemporary Chinese life (Yang and Hu, 2012), yet data scarcity has kept the study of their persistence and revival largely descriptive. Search data make it possible to ask what economic, cultural, and historical conditions sustain demand for specific practices. Second, as religious regulation has tightened under Xi Jinping, a central question is whether repression curtails religious demand or merely displaces it into private and digital forms. Surveys are poorly suited to answer, since intensified pressure raises preference falsification in step. Search behavior, as revealed rather than stated demand, does not share this bias: future work can exploit localized regulatory shocks in quasi-experimental designs to observe whether religious information-seeking declines, stabilizes, or migrates after enforcement.

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Appendix A Religiosity from Surveys

This appendix documents the survey statistics cited in the main text. Table A.1 reports the author’s calculations from two nationally representative surveys: the 2016 wave of the China Family Panel Studies (CFPS), which asks respondents to name their religious identity (qm601), and the 2018 wave, which instead asks whether respondents believe in specific deities (qm6010–qm6017), alongside the CFPS 2016 item on the frequency of burning incense to buddhas or deities (qm602a). All shares are unweighted, with valid responses as denominators; missing codes and “not applicable” answers are excluded.

The three panels correspond to the layers of religious life discussed in the main text. Panel A shows that fewer than 15 per cent of adults claim any religious identity, and that no single tradition exceeds 11 per cent. Panel B shows that belief runs far ahead of identity: a third of respondents believe in the Buddha or bodhisattvas, over half in ancestral spirits, and nearly half in feng shui. Panel C shows the same gap in practice: over a third of respondents burn incense at least once a year, including roughly a third of those who claim no religious identity at all. The gap between Panel A and Panels B and C is the identity–practice disjuncture that motivates this paper.

Table A.1: Survey Measures of Religious Identity, Belief, and Practice

Measure	Source	Share (%)
<i>Panel A: Religious identity (CFPS 2016)</i>		
Any religious identity	CFPS 2016, qm601	14.4
Buddhist	CFPS 2016	10.05
Protestant	CFPS 2016	2.05
Muslim	CFPS 2016	1.06
Daoist	CFPS 2016	0.51
Catholic	CFPS 2016	0.44
Other	CFPS 2016	0.27
<i>Panel B: Belief in deities (CFPS 2018 battery)</i>		
Believes in Buddha or bodhisattvas	CFPS 2018, qm6010	33.5
Believes in Daoist deities	CFPS 2018, qm6011	19.7
Either of the above	CFPS 2018	36.2
Both of the above	CFPS 2018	16.9
Believes in any of five deities	CFPS 2018	39.9
Believes in ancestral spirits	CFPS 2018, qm6015	58.0
Believes in feng shui	CFPS 2018, qm6017	46.9
<i>Panel C: Practice</i>		
Burns incense at least once a year	CFPS 2016, qm602a	37.6
Among those with no identity	CFPS 2016	31.5
Burns incense several times a year or more	CFPS 2016, qm602a	25.8
Among those with no identity	CFPS 2016	20.4

Note: All statistics are unweighted shares of valid responses (missing codes and “not applicable” excluded).

The five deities in Panel B are the Buddha or bodhisattvas, Daoist deities, Allah, the Catholic God, and Jesus.

Appendix B Provincial Lunar Rhythms

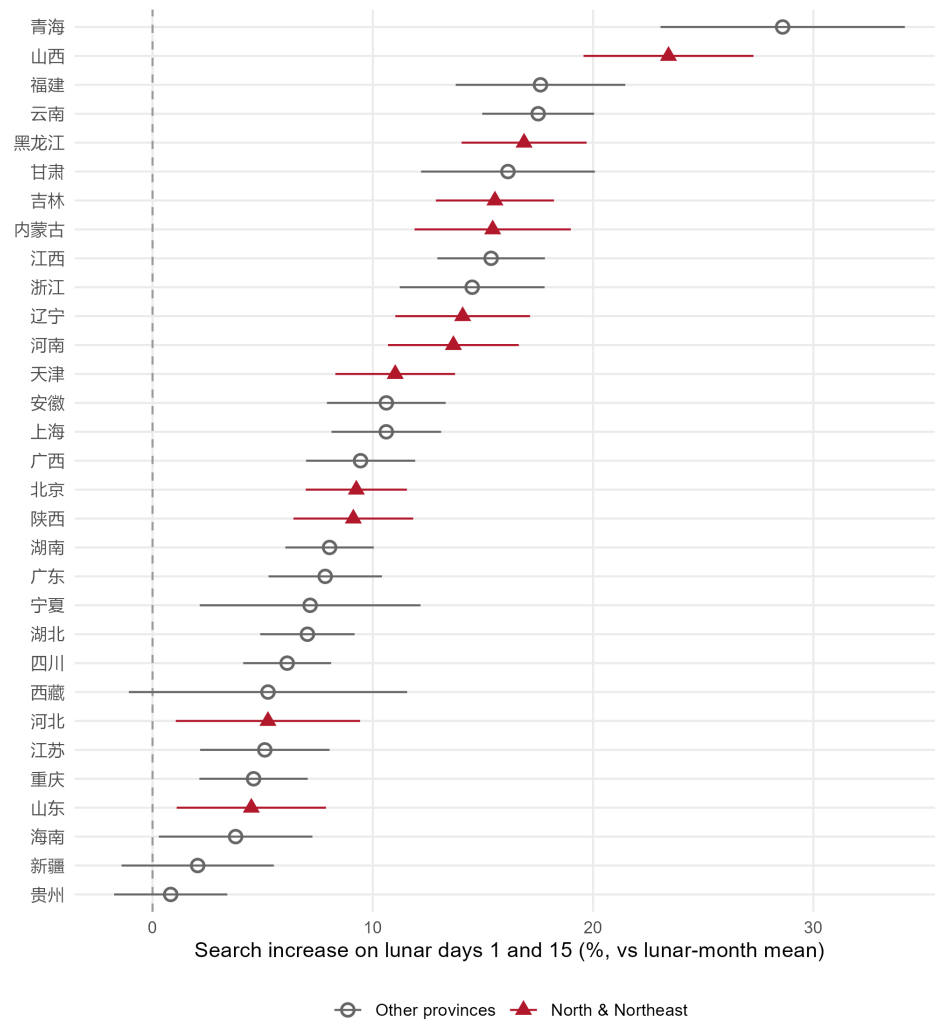
The main text reports that the northern provinces driving the Great Compassion Mantra’s search intensity also observe the lunar liturgical calendar. Table A.2 disaggregates the calendar evidence by province. For each text and region, daily provincial volumes are normalized by their lunar-month mean, and the entries report the average excess on the first and fifteenth lunar days, with p -values from Welch tests against all other days. All three Buddhist texts show significant lunar rhythms in both regions, the amplitudes are slightly larger in the North and Northeast than in the temple-dense South. The Bible shows no lunar rhythm in either region, ruling out the possibility that lunar days simply carry more overall search traffic. Figure A.1 plots the mantra’s amplitude province by province.

Table A.2: Lunar-Day Excess in Search Volume, North versus South (2019–2022)

	North & Northeast	Other provinces
Compassion Mantra	11.5%***	10.2%***
Heart Sutra	6.2%***	4.6%***
Diamond Sutra	3.9%***	3.1%***
Bible	0.9%	0.8%

Note: Average excess of daily search volume on lunar days 1 and 15 relative to the lunar-month mean, by region; p -values from Welch tests against all other lunar days. $*p < 0.05$, $**p < 0.01$, $***p < 0.001$.

Figure A.1: Lunar Amplitude of Compassion Mantra Searches, by Province



Note: Excess search volume on lunar days 1 and 15 relative to the lunar-month mean, 2019–2022, with 95% confidence intervals. Filled triangles mark North and Northeast provinces.

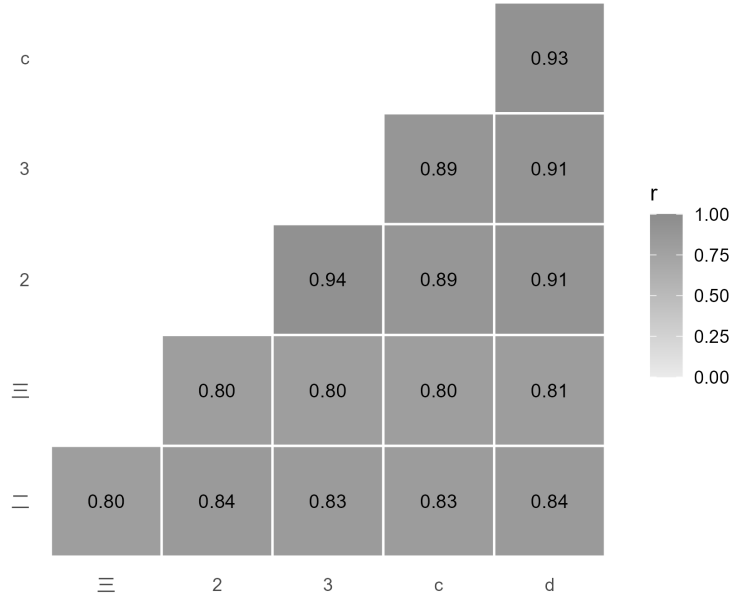
Appendix C The Neutral-Term Baseline

Unlike Google Trends, which reports search interest normalized to a 0–100 index, the Baidu Index reports absolute search volumes. High volume in a locality may therefore reflect nothing more than a large population of internet users. Similarly, high volume on a specific date might reflect increased screening time. All spatial analyses and the Covid study in the paper accordingly divide religious search volumes by a baseline index of overall search activity, constructed from six neutral terms.

Candidate terms had to satisfy two criteria. First, temporal stability: the term must not respond to external events, seasonality, or information shocks. Generic terms like “weather forecast” fail because they correlate with weather itself. Second, spatial neutrality: the term must not correlate with regional characteristics other than internet penetration; service terms like “restaurant” (餐馆) or “delivery” (外卖) fail because they are structurally biased toward urban centers. I therefore turned to meaningless strings searched mainly through stray keystrokes, selecting two high-volume, low-volatility representatives from each of three categories: the Arabic numerals “2” and “3”, the Chinese numerals 二 and 三, and the Latin letters “c” and “d”.

Two tests validate treating the six terms as a single index, using the daily prefecture-level panel for 2022. First, the terms move together: pairwise correlations range from 0.80 (between 三 and “3”) to 0.94 (between “2” and “3”; Figure A.2), and the standardized Cronbach’s α is 0.97. Second, the aggregation rule is immaterial: the first principal component accounts for 88 per cent of the total variance (Table A.3), and regressing it on the simple six-term sum yields an R^2 of 0.997. Throughout the paper, I use the sum, whose ratio form reads directly as a search intensity rate: religious searches per unit of baseline search activity.

Figure A.2: Pairwise Correlations among the Six Neutral Terms



Note: Pearson correlations across prefecture-days, 2022 ($N = 124,893$).

Table A.3: Principal Component Analysis of the Six Neutral Terms

	PC1	PC2	PC3	PC4	PC5	PC6
Proportion of variance	0.881	0.044	0.032	0.024	0.011	0.009
Cumulative	0.881	0.925	0.956	0.980	0.991	1.000

Note: PCA on standardized daily prefecture-level volumes, 2022.

A final property of the baseline matters for the panel analysis in the main text. The pandemic itself changed how much time people spent online: if COVID outbreaks raise overall search activity, raw religious search counts would rise mechanically, with no change in religious interest. Table A.4 confirms this directly, regressing the log of the six-term baseline volume on the outbreak indicator from the main specification, with prefecture and date fixed effects: an ongoing local outbreak raises baseline search activity by about 2 per cent, which is precisely the confounding that the normalization removes. Because the share outcomes divide religious

Table A.4: Local Outbreaks Increase Overall Search Activity

	Log(Baseline Search Volume)
Outbreak (Past 7 Days)	0.022*** (0.005)
Observations	359 224
R2	0.898
Adj. R2	0.898
Mean of dep. var.	6.3445
Number of prefectures	358
Number of days	1,025

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Standard errors clustered at the prefecture level. A positive coefficient indicates raw search counts mechanically inflate during outbreaks, motivating the share-based outcome.

search by this baseline, pandemic-induced shifts in time online are absorbed by the denominator rather than loaded onto the estimates.

Appendix D COVID Data Construction and Summary Statistics

Daily case data come from Sina News, a major aggregator compiling official reports from the National Health Commission and local Centers for Disease Control. The sample runs from 11 January 2020, when systematic reporting began, to 31 October 2022, before mass testing was abandoned and official case counts lost meaning in the final weeks of the zero-COVID policy. Table A.5 reports summary statistics for all variables used in the analysis.

Table A.5: Summary Statistics, COVID-19 Analysis Panel

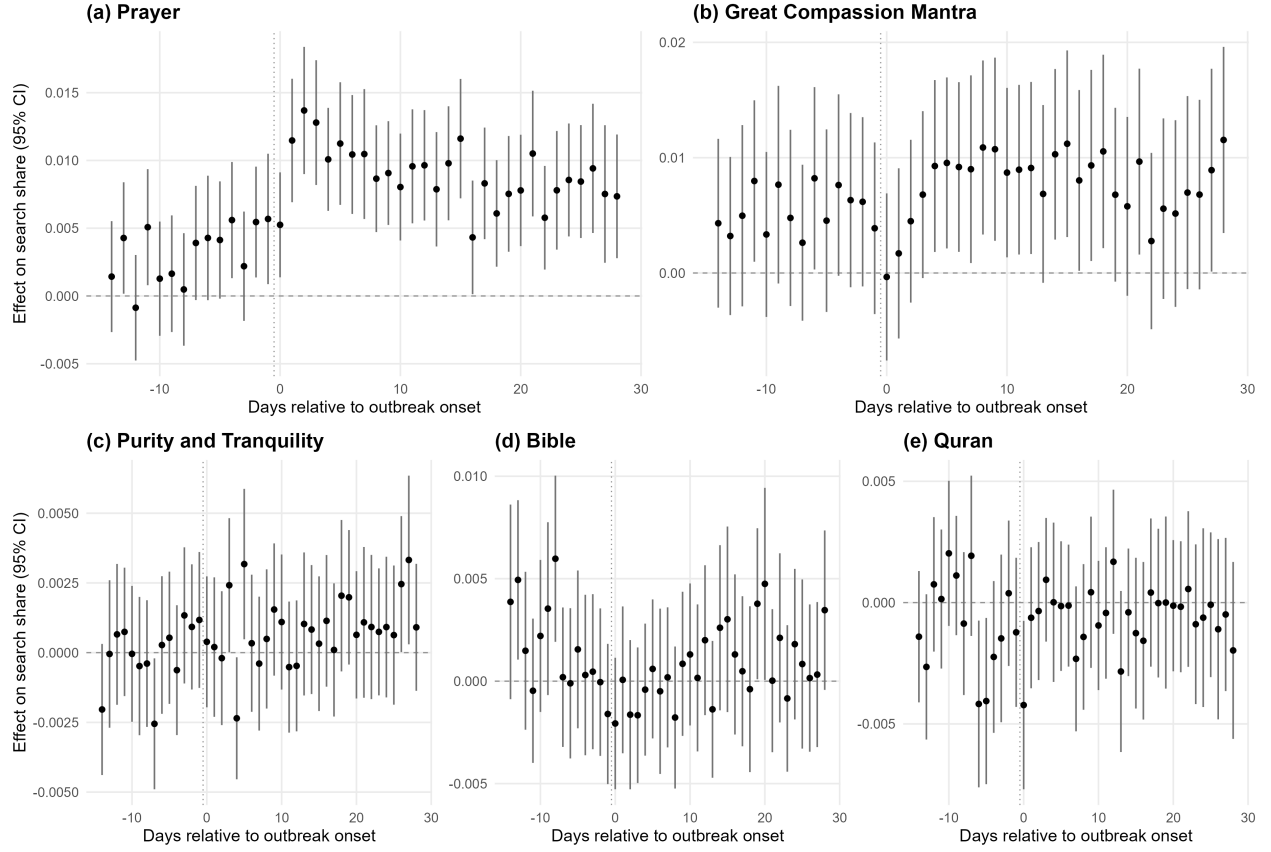
	Mean	SD	Min	Max
<i>Outcomes (share of neutral-term baseline)</i>				
Prayer share	0.095	0.091	0	2.2
Compassion Mantra share	0.193	0.149	0	3.9
Purity and Tranquility share	0.030	0.049	0	2.0
Bible share	0.116	0.090	0	2.2
Quran share	0.038	0.075	0	2.2
<i>Raw search volumes</i>				
Prayer volume	74.5	77.0	0	1,109
Compassion Mantra volume	136.3	144.2	0	1,932
Purity and Tranquility volume	26.8	41.4	0	320.0
Bible volume	83.2	69.3	0	800.0
Quran volume	28.7	42.8	0	770.0
Neutral-term baseline volume	697.1	484.0	57.0	6,566
<i>Treatment indicators</i>				
Outbreak in past 7 days	0.083	0.275	0	1.0
New cases today	0.035	0.185	0	1.0

Note: Prefecture-day panel, 11 January 2020 to 31 October 2022: 359,224 observations, 358 prefectures, 1025 days.

Appendix E Event-Study Construction and Robustness Checks

An onset is defined as the first reported case in a prefecture after at least thirty case-free days. The estimates compare prefecture-days around an onset with quiet prefecture-days, those with no case in the previous thirty days. Two adjustments keep this comparison group clean. First, days 29 to 56 after an onset are excluded as a decay buffer, so that prefectures still recovering from a recent outbreak do not enter the baseline. Second, prefecture-days within range of more than one onset are assigned to the nearest one. The main-text figure averages the daily coefficients within seven-day bins; Figure A.3 reports the underlying daily estimates for all five outcomes. Table A.6 reports joint Wald tests of the pre-onset coefficients over two windows, days -14 to -7 and days -6 to -1 . For prayer, the distant window is jointly indistinguishable from zero, and the final pre-onset week shows the small anticipatory rise discussed in the main text. For the remaining outcomes, neither window departs from zero.

Figure A.3: Daily Event-Study Estimates



Note: Daily coefficients relative to prefecture-days with no outbreak in the previous thirty days, with 95% confidence intervals; standard errors clustered by prefecture. Panels are ordered as in the main-text figure: prayer, the Great Compassion Mantra, the Scripture of Purity and Tranquility, the Bible, and the Quran.

Table A.6: Joint Tests of Pre-Onset Coefficients, Daily Event Study

	Days −14 to −7		Days −6 to −1	
	Wald stat.	<i>p</i>	Wald stat.	<i>p</i>
Pray	1.58	0.125	2.70	0.013
Compassion	0.94	0.485	1.00	0.424
Tranquility	0.98	0.451	0.48	0.825
Bible	2.25	0.021	0.28	0.946
Quran	0.68	0.706	1.47	0.185

Note: Wald tests of the joint significance of daily pre-onset coefficients; standard errors clustered by prefecture.

Two robustness checks are conducted. Table A.7 restricts the sample to May 2020 onward, dropping the initial wave, in which the Wuhan outbreak dominated national attention and local case counts carried little independent variation. The estimates are, if anything, slightly larger, indicating that the results are identified from the hundreds of localized outbreaks that followed rather than from the initial national shock.

Table A.7: Robustness: Excluding the Initial Wuhan Wave

	Pray	Compassion	Tranquility	Bible	Quran
Outbreak (Past 7 Days)	0.010*** (0.001)	0.009*** (0.003)	0.000 (0.000)	−0.001 (0.001)	−0.001 (0.001)
Observations	320 220	320 220	319 788	320 220	320 220
R2	0.230	0.408	0.183	0.198	0.280
Adj. R2	0.227	0.406	0.179	0.195	0.277
Mean of dep. var.	0.0950	0.1998	0.0297	0.1165	0.0387
Number of prefectures	358	358	358	358	358
Number of days	914	914	914	914	914

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Sample restricted to May 2020 onward, after the initial national wave subsided.

Table A.8 replaces the seven-day outbreak indicator with a same-day new-case indicator,

Table A.8: Robustness: Same-Day New Cases (Binary)

	Pray	Compassion	Tranquility	Bible	Quran
COVID-19 (Binary)	0.007*** (0.001)	0.006** (0.002)	0.000 (0.000)	−0.002*** (0.001)	−0.001** (0.001)
Observations	359 224	359 224	358 584	359 224	359 224
R2	0.230	0.405	0.183	0.195	0.279
Adj. R2	0.227	0.403	0.180	0.192	0.276
Mean of dep. var.	0.0949	0.1930	0.0297	0.1156	0.0384
Number of prefectures	358	358	358	358	358
Number of days	1,025	1,025	1,025	1,025	1,025

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Standard errors clustered at the prefecture level. Dependent variables are religious search volumes normalized by the neutral-term baseline index.

the narrowest treatment definition available: the seven-day window treats an outbreak as an episode that keeps residents alert between case reports, and the same-day indicator drops this assumption entirely. Prayer and mantra searches respond under this definition as well, so the main results do not hinge on how the outbreak window is drawn. The Bible and the Quran show small negative coefficients, each around two per cent of the outcome mean.