Religious Worship Attendance in America: Evidence from Cellphone Data


Seventy-three percent of Americans enter a place of worship at least once a year and 5% attend weekly, with large variation in attendance across religious groups. Frequent attenders are less likely to go to strip clubs, liquor stores, and casinos.

Religious worship is integral to the lives of millions of Americans, and has increasingly been shown to be an important driver of important economic outcomes. To date, most studies on religion have relied on surveys where respondents self-report their worship, potentially limiting the reliability of results. In this paper, the author uses anonymized location data from smartphones to provide a descriptive analysis of religious worship attendance in the United States.

The author uses geolocation data from Veraset, a company that provides de-identified geospatial data for millions of smartphones in the United States. He narrows his sample to the roughly 2.1 million cellphones that generate consistent location data over a one-year period between April 2019 and February 2020. The author shows that his sample is reasonably representative of the broader population and can therefore be used to make estimates about religious behavior for the full country. He discovers the following concerning religious worship attendance in the United States:

- Seventy-three percent of people step into a religious place of worship at least once during the year on the primary day of worship (e.g. Sundays for most Christian churches). However, only 5% of Americans attend services “weekly,” far fewer than the roughly 22% who report they do so in surveys.

- The number of occasional versus frequent attenders varies substantially by religion. Members of some religions, such as Latter-day Saints and Jehovah’s Witnesses, have a relatively high fraction of members who are weekly attenders, while members of other religions, such as Catholics and Jews, have a relatively low fraction of members who are weekly attenders.
• Approximately 45 million Americans attend worship services in a typical week. There is limited week-to-week variation/seasonality in attendance, with holidays being the major exceptions. Easter Sunday and Christmas, for example, have nearly 50% greater religious attendance than a typical week.

• Start times and duration of attendance differ meaningfully across religious traditions. There is extreme consistency/uniformity in some religions both in terms of start times and durations (Muslims, Latter-day Saints, and Jehovah’s Witnesses) while other religions are much less uniform (Buddhists and Hindus).

• Religious individuals have very similar income to non-religious individuals ($79k versus $80k). However, individuals that attend weekly have slightly lower incomes ($74k) than less-frequent attenders ($78k) and never attenders ($80k).

• Cold temperatures and precipitation on the day of service lead to less attendance.

• The intensity of religious observance correlates with a host of other activities. For example, relative to non-attenders and infrequent attenders, frequent religious attenders are less likely to go to strip clubs, liquor stores, and casinos.

This research paints a newly detailed picture of religious worship attendance in the United States. Even though the author finds that the frequency of religious worship visits is lower than claimed in surveys, he still shows that approximately 45 million Americans spend more than an hour each week attending religious worship, underscoring the important role of religion in American life. By releasing new granular measures of religious attendance, the author hopes to support future research on some of the most important questions related to religion, such as what leads to increased or decreased religiosity and how religiosity impacts peoples’ attitudes and behaviors.