

Peace of Mind: Examining Election-Induced Anxiety among Minorities in India

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Abstract

We examine if the national elections held in India differentially affected minorities after the ruling party's landslide victory in 2019. Employing a measure of anxiety and nationally representative survey data, we find a significant increase in anxiety among minorities, particularly within the Muslim community. Moreover, our results uncover significant heterogeneity in the main effect, with a more pronounced impact in districts characterized by high electoral competitiveness. We establish the credibility of our research design through a battery of empirical tests.

JEL Classifications: I31, H70, O1, P40, Z12

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1 Introduction

“Hesitation, anxiety, the struggle between belief and disbelief - all that is sometimes such a torment for a conscientious man...”

– from *The Brothers Karamazov* by Fyodor Dostoevsky

There is mounting evidence that societies across the globe are becoming highly polarized.¹ Accentuated polarization may result from politicians’ public speeches and announcements pandering to their electorate for electoral gains. When the society is diverse, this polarization often takes the form of appeal to particular salient aspects of distinct groups like religion. Existing work shows that when these group characteristics are subconsciously appealed to, there might be significant consequences for the choices that individuals make (Mani et al., 2013). Nonetheless, there are lacunae in our knowledge of how non-majority residents are affected when their minority status is highlighted. This paper aims to fill this glaring gap.

Our focus is Lok Sabha (House of the People, or the Lower House of Parliament of India) Elections, which are held nationally over multiple phases and determine the composition of the national legislature. In the run-up to the 2019 Lok Sabha elections, there were visible signs of increasing religious tensions in the Indian society (Vaishnav, 2019). On the campaign trail, candidates from the incumbent Bharatiya Janata Party (BJP) resorted to using language with clear religious undertones (Sardesai, 2019). While the victory of BJP may have been a foregone conclusion, the extent of victory was not predictable (Slater, 2019). As the BJP won a massive majority, which gave it almost unchecked power to pass various legislation in the Indian parliament, the perceptions of weakening of rights for minority religious residents may have become more acute. Hence, with a diverse religious composition, the 2019 elections in India provide a good setting to examine the aforementioned hypotheses.

We combine multiple data sources to study if respondents of different religions perceived the massive BJP victory in the elections differently. Our outcome variable comes from the India Time Use Survey (ITUS) 2019, which provides detailed information for approximately half a million respondents on various activities undertaken by all respondents who are six years or older within a 24-hour time window. Information on more than 160 distinct activities for each 30-minute interval is collected for each respondent. We use these data to construct measures of sleeplessness - a proxy for the mental health or anxiety of respondents. We acknowledge that our outcome variable cannot fully capture clinical measures of mental health. Nonetheless, sleeplessness spells have been documented to be highly correlated with worse mental health in the psychological literature (for more details, see Section 3). We proxy for anxiety both at the intensive and extensive margin through time spent experiencing sleeplessness and experiencing any sleeplessness episodes, respectively.

We then merge time diary data with data from satellite reanalysis on weather conditions that may also impact time allocated for various activities (Jafarov et al., 2023). Information on the electoral competitiveness of districts is obtained from the Election Commission of India (Bhogale et al., 2019).

Our main empirical strategy is based on a regression discontinuity design (RDD) approach. We leverage a sharp discontinuity in the interview date that arises as respondents are interviewed before and after the Lok Sabha election

¹For a review of the available evidence, see Andreottola and Li (Forthcoming), Carothers and O’Donohue (2019), Iyengar et al. (2019) and Sahoo (2020).

results announcement. Our approach meets the requirements for the validity of the RDD research design; at the cutoff, the running variable does not discontinuously change, and the observable characteristics of the respondents are balanced. Furthermore, our design is valid after performing various empirical checks suggested for RDD applications where the running variable is discrete, as in our case (Cattaneo et al., 2020b).

Results demonstrate that while there is no effect of the landslide victory of the incumbent BJP in the 2019 Lok Sabha elections on Hindus' sleeplessness intensity, there is a large increase in sleeplessness for minority religion respondents.² Point estimates for minorities reflect an increase in sleeplessness intensity of 0.917 minutes on the day of the election results announcement. This is a large increase, which suggests a serious worsening in mental health for minority residents in the aftermath of victory for a party that used religiously motivated language in its election campaign. Over the mean of the estimating sample, this point estimate suggests an increase in sleeplessness intensity of approximately 91%.³

The estimated effect on minority religion respondents' sleeplessness intensity after the incumbent BJP's massive electoral win is robust to various checks. Our findings are unaltered by changing the estimating sample, aggregating the individual-level microdata, or including various control variables. We also illustrate that the effect is potentially driven by heightened insecurities on account of affiliation with a particular religion – Islam, by leveraging another major national event during our sample period – the Ayodhya land dispute verdict by the Indian Supreme Court. Since this major event had a clear Hindu-Muslim connotation, we should expect the worsened mental health to be concentrated on Muslim respondents only (and not among other minorities). This is precisely what we find. In light of this evidence, we emphasize that religious affiliation can significantly affect the mental health of respondents of a particular religion if they happen to be stimulated by some external event with clear religious undertones.

We also uncover significant heterogeneities in our main estimates. Our estimated effects are more pronounced for males, adolescents or young adults, those who have only completed primary school, those who report their activity status as a self-employed or casual wage laborer, those whose caste category is general, relatively rich, who reside in northern or western parts of the country or in the states where BJP has control of the state legislature, more electorally competitive districts. On examining whether the election results affect time spent on various broad activity categories, we find that while time spent on employment-related activities goes up, time spent on activities related to the production of goods for own use, unpaid care, self-care, and maintenance-related activities, and outdoor activities goes down. We interpret these results as evidence of religiously heated elections affecting vast swathes of activity types for minority religion respondents.

²We define a respondent as following a minority religion if they do not report Hinduism as their religion. According to the latest available population census estimates, these religions constitute 20.2% of India's overall population, with the remaining share following Hinduism. We acknowledge that defining minorities based on religion is not the only definition for categorizing an individual as being part of a minority group.

³While these effects may appear large, they are similar to the existing studies on mental health effects of large national events document. Tsai and Venkataramani (2015) show that in the aftermath of the September 11 attack in 2001, the mental health of the respondents in their data worsened by up to 60%. Using the same terrorist attack as a natural experiment, Metcalfe et al. (2011) show that respondents' subjective well-being in a British household panel survey worsened by approximately 22%. Employing landmine explosions during pregnancy in Colombia, Camacho (2008) find large negative effects on birth outcomes, which are presumably mediated through maternal stress emanating due to landmine exposure. Leveraging the plausibly exogenous variation provided by the Boston Marathon bombing in 2013, Clark et al. (2020) find happiness immediately after the bombing dropped by a third of a standard deviation. Using data from Wisconsin and using the September 11 terrorist attacks as a natural experiment, Krueger (2008) show that in the immediate aftermath of the attacks, the reported sadness increases by more than 100% over the sample mean of the pre-treatment period. We note that our main point estimate is in the ballpark of these estimates.

With this work, we contribute to multiple strands of literature. First, we contribute to an extensive literature on the economics of religion (Iyer, 2016), by highlighting the role of religious tensions during elections in affecting the mental health of minority religion residents. In contrast to the existing literature that notes positive impacts of religion on mental health outcomes (Fruehwirth et al., 2019; Mellor and Freeborn, 2011), we show that for some religions, political events may worsen mental health (Iyer and Rosso, 2020). We also contribute to an expanding literature on the mental health effects associated with political events (Carod-Artal, 2017). To this literature, we contribute by highlighting the role of religiously laced political campaigns and the potential heightening of insecurities that might be perpetuated by the large victory of parties indulging in fueling these anxieties (Finke, 2013). As we use time spent experiencing sleeplessness as our main outcome variable, our work is also related to a large literature using time diary data (Aguilar and Hurst, 2007; Aguiar et al., 2012, 2021; Biddle and Hamermesh, 1990; Burda et al., 2013; Hamermesh and Polachek, 2023; Kalenkoski et al., 2005; Krueger and Mueller, 2012; Stratton, 2012). Finally, we also contribute to a particular strand of literature that studies myriad effects of religious fractionalizations in India (Blakeslee, 2013; Iyer, 2018; Iyer and Shrivastava, 2018; Jha, 2014; Mitra and Ray, 2014; Wilkinson, 2006). Our finding supplements this strand that only certain religions suffer negative mental health consequences from the victory of a political party pandering to the majority religion (Glaeser, 2005; Posner, 2004). To the best of our knowledge, ours is the first study that examines the mental health consequences emanating from the worsening social climate experienced by religious minorities in India.

The rest of the paper is organized as follows. In Section 2, we provide a brief background on the general elections that were held in India in 2019. We then discuss the data we employ in our study in Section 3. Section 4 presents our empirical framework along with various empirical tests to test the validity of our research design. Results are presented in Section 5. We conclude and discuss our findings in Section 6.

2 Background

General elections (or national elections) in 2019 were conducted in five phases from April to May. These elections are held to elect members for the lower house of the Indian parliament (Lok Sabha). These elected members then choose a prime minister who is the head of the central government. Often, the prime minister is a member of the party or coalition of political parties with a majority in the lower house of the parliament. Lok Sabha comprises 543 members called the members of parliament (MPs), each representing a parliamentary constituency (PC). National elections are conducted approximately every five years with some precedence of earlier elections due to the dissolution of the parliament.

General elections in 2019 were contested amongst a mix of big national and small regional parties. Two main national parties that contested the elections were the incumbent Bharatiya Janata Party (BJP) and the Indian National Congress (INC). The incumbent BJP held onto the majority with a resounding victory in over 300 PCs. These elections were significant as it was the first time in almost 50 years that the incumbent majority party increased its tally of elected representatives (Varshney, 2019). The elections were held in the backdrop of considerable agrarian and economic distress with historic levels of unemployment.⁴ Moreover, political analysts predicted that the

⁴See detailed discussion on the agrarian distress in the lead up to the elections in Das (2019). There were major economic headwinds in

incumbent BJP would fare poorly relative to its performance in the previous elections as it had supposedly realized potential gains in its regional strongholds of North and West India (Sridharan, 2014). What is even more striking is that the BJP won more than half the popular vote in thirteen of the 36 states and union territories. The only social group where the BJP lost vote share was Muslims (Kumar and Gupta, 2019). On the other hand, another major national party, INC, gained vote share from non-Hindu minorities, the only social group where it led BJP in vote share (Varshney, 2019).

On the campaign trail, BJP candidates made public comments that can be considered religiously motivated (Deccan Chronicle, 2019; Ghoshal, 2019). While there are legal repercussions to using religiously laced language in political campaigns, deterrence does not have enough teeth as the reprimands are not harsh, and monetary fines are low. Representation of religious minorities is also low in BJP relative to their population share. BJP did field six candidates in constituencies with a large Muslim population, but neither won. Therefore, there is no BJP Muslim legislator in the current Lok Sabha. This is despite the fact that Muslims constitute more than 10 percent of India's population.

Existing work documents that violence against religious minorities has increased since the BJP came to power in 2014 (Basu, 2021) and that religious minorities feel increasingly insecure given the current political and social trends (Ramachandran, 2020). These feelings may have been heightened in the backdrop of increased activities by vigilante groups who often target religious minorities, thereby increasing the risks to their physical safety (Jaffrelot, 2017). The literature also shows that political parties influence ethnic violence (Nellis et al., 2016). Given these incidences, it is plausible that religious minorities, who are potentially the primary target, feel acute insecurity, which might result in the worsening of their mental health. In this paper, we examine if this is the case.

3 Data

The ideal data to examine how the election results affected the residents would contain information on their experiences and feelings. In the absence of such data, we use nationally representative data on time-use to examine if various subpopulations were differentially impacted in their experiences following the landslide victory of the incumbent BJP in the Lok Sabha elections. We describe all data and their source in detail below.

Indian Time Use Survey (ITUS) is collected in 2019 by the Indian National Sample Survey Organization (NSSO) on approximately 450,000 respondents in more than 138,000 households. The survey encompasses information on all activities performed in each 30-minute interval between 4 A.M. on the day preceding the interview and 4 A.M. on the day of the interview. ITUS provides activity codes using the 2016 International Classification of Activities for Time Use Statistics (ICATUS). The survey also collects information on individual and household demographics that we use to establish the validity of our empirical framework and to examine the heterogeneity

the years 2014 to 2019, such as demonetization in late 2016, implementation of goods and services tax in 2017, and collapse of non-bank lenders in 2018 (Sender, 2020).

across subpopulations.^{5,6}

Using the three-digit activity codes in ITUS, we construct our outcome measure as spells of sleeplessness (not being able to sleep). We examine both the extensive margin of experiencing any sleeplessness as well as the cumulative time spent experiencing sleeplessness. Existing work in psychological literature has demonstrated that sleeplessness might result due to perceived stress (Ellis et al., 2012; Kim and Dimsdale, 2007; Meaklim et al., 2023), be a precursor and is often perpetuated by anxiety and depression (Fava, 2004; Narisawa, 2013; Neckelmann et al., 2007; Shanahan et al., 2014; Walsh, 2004). Relying on these existing studies, we treat spells of sleeplessness as a proximate cause of anxiety surrounding the election results. Fear of exclusion, retribution, and backlash could heighten anxiety for certain groups of people, and we causally establish that this indeed is the case in the backdrop of general election results in India in 2019. Economists have investigated how reduced sleep affects a host of outcomes (Asgeirsdottir and Olafsson, 2015; Biddle and Hamermesh, 1990; Cappuccio et al., 2010; Hillman et al., 2006; Sedigh et al., 2017).⁷ Lack of adequate sleep has been shown to affect workplace productivity, absenteeism, and school performance.⁸ Therefore, worse sleep quality in and of itself imposes large economic costs on the affected.

In order to ensure that sleeplessness is indeed associated with worse mental health in our population of study, we draw upon detailed mental health information in Longitudinal Aging Study in India (LASI) (Bloom et al., 2021).⁹ These data provide information on the extent of sleeplessness along with the experience of feelings associated with mental stress, like feeling worried or stressed. Raw correlations suggest that approximately 11% of respondents who experienced sleeplessness on the day before the interview felt worried or stressed and that medium-term experience of sleeplessness is positively correlated with clinical diagnosis of depression. Overall, albeit correlational, these data illustrate that sleeplessness is associated with worse mental health outcomes.

We also obtained information on the weather conditions on the days when the respondents were surveyed, inasmuch as these conditions may impact time allocation decisions across different activities (Jafarov et al., 2023). These data are derived from satellite reanalysis data ERA5-Land climate (Hersbach et al., 2020). Particularly, we use information on temperature and precipitation on the day of the survey. To construct the measure of electoral competition at the district-level, we use data from Bhogale et al. (2019). Relying on existing literature, our primary measure of electoral competitiveness is the Effective Number of Parties (ENOP) at the district-level. In order to aggregate constituency-level ENOP, we take a simple average for all parliamentary constituencies in a given district.¹⁰

⁵We note that the reported religion in the survey data is at the household-level. Religious identity in India is a way of life and expression; all household members invariably associate themselves with the same religion (Clothey, 2007). Therefore, we assign the household-level religion to all household members.

⁶For more details about ITUS, see Jafarov et al. (2023).

⁷Asgeirsdottir and Olafsson (2015) find that the sleep duration and wages have an inverse u-shape relationship using data from American Time Use Survey. Biddle and Hamermesh (1990) develop a theory of demand for sleep which accounts for labor market productivity effects of sleep. They find that for males, there is a negative relationship between wage and sleep time. Undertaking a literature review, Cappuccio et al. (2010) suggest that both short- and long-duration of sleep are positively correlated with a greater risk of death. Hillman et al. (2006) find that sleep disorders impose a total financial cost of approximately \$4524 million in Australia. Sedigh et al. (2017) confirm the negative relationship between wages and sleep documented by Biddle and Hamermesh (1990) using data from Canada.

⁸See Heyes and Zhu (2019) and references therein.

⁹It is worth highlighting that the lack of information on the interview day in these publicly available data precludes us from using these data to examine some of these outcomes.

¹⁰Consider district d that has n_d number of Parliamentary Constituencies. The district-level ENOP is defined as $\frac{\sum_{i=1}^{n_d} ENOP_i}{n_d}$, where

Descriptive statistics for the entire sample are presented in Table A1. These summary statistics suggest that our sample captures the broader demographics of the population very well and that there is significant variation in the outcome variable of interest. In Figure A1, we see that the sleeplessness spells are, on average, concentrated during those times when the respondents are trying to sleep during the day – the early afternoon and in the night, i.e., typical times when respondents are most likely to sleep (Bessone et al., 2021).

4 Empirical Strategy

In order to estimate the causal effect of election results on the outcome variable, we employ a regression discontinuity design (RDD) by estimating the following specification:

$$y_i = \alpha_h + \tau_h \cdot \mathbb{1}\{Date_i > ResultsDate\} + \beta_h^- \cdot (Date_i - ResultsDate) + \beta_h^+ \cdot \mathbb{1}\{Date_i > ResultsDate\} \cdot (Date_i - ResultsDate) + \varepsilon_i \quad (1)$$

In Equation 1, y_i is the outcome of interest for respondent i . $Date_i$ refers to the day on which the respondent i is interviewed, while $ResultsDate$ is the day of the general election results announcement – May 23, 2019.¹¹ The estimate of τ_h captures the effect of being interviewed after the general election result announcement on the outcome variable. This parameter estimate depends on the bandwidth h used to determine the estimating sample. In all our specifications, we use optimal bandwidth according to the method of Calonico et al. (2017). We allow the slope of the conditional expectation function to be different on either side of the cutoff and use a triangular kernel, which assigns a higher weight to an observation close to the threshold.¹² Our running variable takes discrete values only but has rich support permitting the use of standard estimation methods for continuous running variable (Cattaneo et al., 2020b; Kolesár and Rothe, 2018).

We establish the robustness of our empirical framework through multiple validity checks according to Cattaneo et al. (2020b). The identifying assumption in our empirical framework is the continuity of potential outcomes of respondents who are surveyed on either side of the day of the election result announcement. One way to assess the validity of this assumption is to establish that observable covariates that are potentially correlated with the outcome of interest do not change discontinuously around the cutoff. In Table 1, we show that none of the observable covariates change discontinuously on the day of the election result announcement.^{13,14} Figure A2 shows that the

$ENOP_i = \sum_{j=1}^{n_i} \frac{1}{v_j}$ is ENOP for PC i , v_j is the vote share of candidate j in this PC amongst a total of n_i candidates in the PC.

¹¹While there were exit polls at the end of the last phase of voting on May 19, we show later that there is no effect of the exit poll predictions on the incidence of sleeplessness (see Table A3). It is not clear whether exit polls have any effect on the mental health of minorities. The exit polls projected widely different election outcome scenarios, with some polls predicting a hung parliament while others projected a substantial majority for the incumbent BJP. Therefore, the election outcome was apriori uncertain even if some exit polls predicted a majority for the ruling coalition of parties.

¹²The slope parameter to the left of the cutoff is given by β_h^- while β_h^+ is the slope parameter to the right of the cutoff.

¹³In our main estimation sample of respondents who do not report their religion to be Hinduism, only the indicator variable reporting usual principal activity status as self-employed has a p-value of 0.1. In Table A6, we show that our main conclusions are unaltered when we control for these observable characteristics of the respondents.

¹⁴For the usual principal activity status “Unemployed or Not in Labor Force”, we do not have enough observations on either side of the cutoff for a reliable estimation. We, therefore, do not present estimates for this subpopulation in Table 1.

density of responses might have potential discontinuities across the treatment threshold.^{15,16} Table A2 establishes that the number of interviews does not change significantly around the cutoff for our main estimating sample.¹⁷

Table 1: Effect of Election Results on Sleeplessness – Validity Check

Variable	Optimal	RD	Robust Inference		Number of Observations	Dep. Var.	Dep. Var.
	Bandwidth	Estimator	p-value	95% CI		Mean	SD
Male	23.13	0.002	0.87	[-0.03, 0.04]	13,367	0.51	0.50
Age	19.88	-0.214	0.72	[-1.61, 1.10]	11,117	33.06	17.53
Household Size	17.06	0.093	0.24	[-0.07, 0.27]	10,297	4.70	1.98
Upper Caste	18.23	-0.005	0.86	[-0.04, 0.03]	10,691	0.33	0.47
Usual Monthly Cons. Exp.	20.80	-331.809	0.31	[-1045.39, 331.51]	11,707	11276.86	7553.31
<i>Education</i>							
Illiterate	26.66	-0.020	0.16	[-0.05, 0.01]	15,657	0.18	0.39
Primary School	15.92	0.018	0.29	[-0.02, 0.06]	9,532	0.29	0.46
Secondary School or College	20.87	0.005	0.84	[-0.03, 0.04]	11,707	0.34	0.47
<i>Usual Principal Activity</i>							
Self-Employed	14.75	-0.027	0.10	[-0.06, 0.01]	9,113	0.21	0.41
Salaried/Regular Wage	15.95	-0.002	0.95	[-0.03, 0.02]	9,532	0.10	0.30
Domestic Duties	25.98	0.023	0.13	[-0.01, 0.05]	14,825	0.27	0.45
Casual Wage Labor	15.12	0.009	0.41	[-0.01, 0.04]	9,532	0.10	0.30
In School or College	18.52	0.021	0.21	[-0.01, 0.06]	10,691	0.25	0.43

Notes: Each row corresponds to a different dependent variable. Rows indicate the dependent variable. In each row, the sample is restricted to respondents who do not report their religion as Hinduism. The bandwidth is selected to be coverage-error optimal (Cattaneo et al., 2020b). The sample contains data from the India Time Use Survey (ITUS) 2019.

We also perform a falsification check where artificial cutoffs are chosen before and after the actual cutoff. The results from this exercise in Table A3 show that there is no evidence of discontinuity in the outcome variable away from the cutoff.¹⁸ In Table A4, we establish that our estimates are not sensitive to observations near the cutoff. Table A5 confirms that our estimates are also not sensitive to alternate bandwidth choices. These balance tests and placebo checks suggest that the identification assumptions for our estimates to be interpreted as causal are not violated.

¹⁵We also check for manipulation-robust treatment effects using Gerard et al. (2020) approach, for which the findings provide no evidence of manipulation at the threshold. The manipulation-robust average treatment effect estimate is 1.09, which is very close to our preferred point estimate of 0.917 (see Table 2).

¹⁶The corresponding p-value is 0.3908. The asymmetry between point estimate and confidence bounds results from different polynomial degrees for their estimation (Cattaneo et al., 2020a).

¹⁷We do find that the number of interviews for Muslims goes up (marginally insignificant) post the general elections results. Therefore, we refrain from making inferences on the sample of respondents who report their religion to be Islam only.

¹⁸We are unable to use placebo cutoffs very close to the actual cutoff due to insufficient mass for the estimates to be reliable near the cutoff.

5 Results

We present the main results in Figure 1 and Table 2.¹⁹ Figure 1 suggests that following the overwhelming majority obtained by the incumbent BJP in the 2019 general elections, respondents from all religions except Hinduism report increased levels of sleeplessness. This figure also suggests that the worsening mental health of minority respondents is driven by those who report following Islam or Christianity.

Table 2: Effect of Election Results on Sleeplessness – Main Effect

Sample	Optimal	RD	Robust Inference		Number of Observations	Dep. Var.	Dep. Var.
	Bandwidth	Estimator	p-value	95% CI		Mean	SD
All Religions	45.43	0.228	0.19	[-0.14, 0.70]	117,753	2.24	13.22
Hindus Only	52.68	-0.268	0.19	[-0.78, 0.16]	97,505	2.43	13.76
All Minorities	40.99	0.917	0.00	[0.42, 1.51]	24,812	1.01	7.56
Muslims Only	39.65	2.868	0.00	[1.69, 4.34]	14,275	2.11	12.84
Christians Only	37.20	0.290	0.04	[0.02, 0.64]	5,155	0.15	2.01
All Minorities Ext. Margin	34.22	0.024	0.00	[0.01, 0.04]	22,010	0.02	0.15

Notes: Each row corresponds to a different sample. Rows indicate the estimating sample. The dependent variable in all rows except the last row is the time spent experiencing sleeplessness. The dependent variable in the last row indicates whether any time is spent experiencing sleeplessness. Sleeplessness activity is discussed in the main text. The sample contains data from the India Time Use Survey (ITUS) 2019.

In Table 2, we formally test if the mental health of minority respondents worsens at the cutoff. The point estimates show that while Hindus experience no change in their sleeplessness intensity, the minority respondents experience increased spells of sleeplessness. The point estimate of 0.917 shows the marginal increase in the sleeplessness time (in minutes) for the average respondent from minority religions on the day of election result announcement, *ceteris paribus*. Relative to the sample mean, this is approximately a 91% increase. The point estimate for respondents following Islam is significantly larger than the point estimate for respondents who follow Christianity. Relative to the sample mean, Muslim respondents see an increase in sleeplessness intensity of approximately 135%. This increase for Christian respondents is approximately 193%. See Footnote 3 for a discussion on the magnitudes of these point estimates. We also find that minorities' likelihood of reporting any sleeplessness on the day of election results increases by 2.4 percentage points. To the extent that sleeplessness is positively associated with underlying anxiety and other mental health issues, these estimates suggest that minority religion respondents experience worsened mental health in the immediate aftermath of BJP's landslide victory in the 2019 Lok Sabha elections.

We establish the robustness of our main finding of the worsening mental health of minorities in the backdrop of the resounding electoral success of the incumbent BJP. The estimates from alternate samples and aggregations, where we restrict the sample to the respondents who report their religion to not be Hinduism²⁰, are presented in Table A6. Our point estimates are unaltered on dropping households with infants, states that held state legislative assembly elections concurrently with the Lok Sabha elections, ITUS-classified "other" days²¹, and weekends. The point estimates are much larger if we rely on the time division where all the time is allocated to the major activity.²²

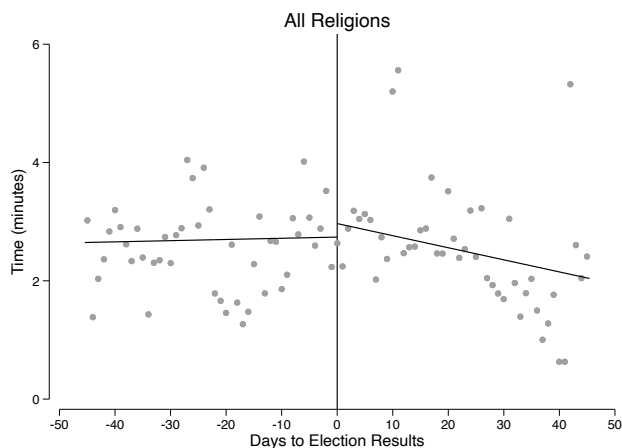
¹⁹We use default settings as suggested in Calonico et al. (2017) for all our estimations.

²⁰The results for respondents who report their religion to be either Islam or Christianity are very similar and are presented in Table A7-A8.

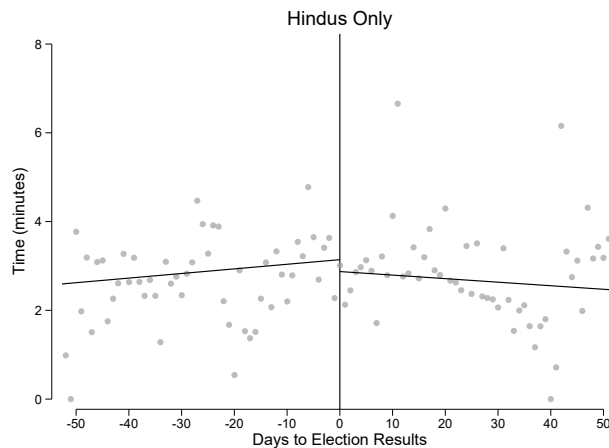
²¹In ITUS, the day is designated as "other" if the respondents cannot perform their normal routine activities.

²²Respondents are instructed to report "major" activity in case multiple activities are performed in a given time slot. For more details on

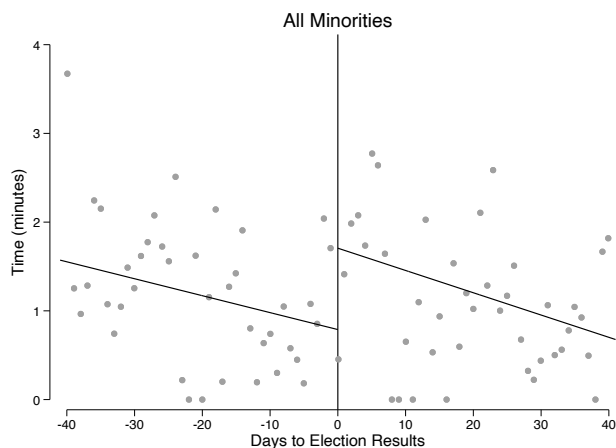
Figure 1: Effect of Election Results on Sleeplessness



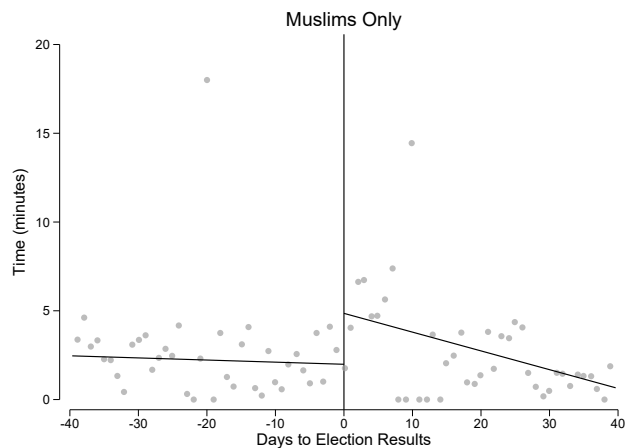
(a) All Religions



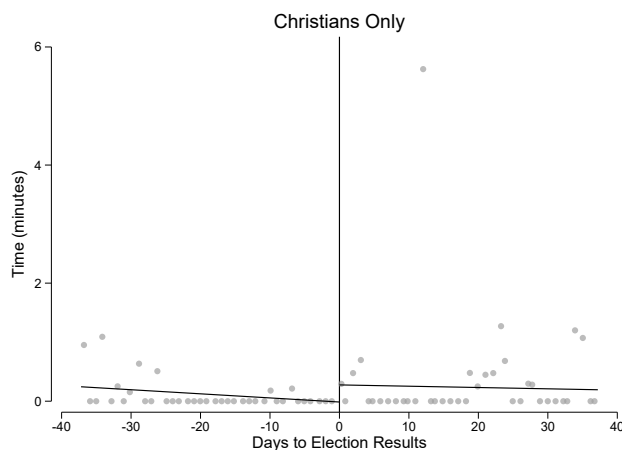
(b) Hindus Only



(c) All Minorities



(d) Muslims Only



(e) Christians Only

Notes: Authors' calculations. The data comes from the India Time-Use Survey (ITUS) 2019. The polynomial order for conditional expectations functions on either side of the cutoff is one. A triangular kernel is used for local polynomial estimation. The optimal bandwidth for each subpopulation is calculated using default settings of [Calonico et al. \(2017\)](#). Daily bins; the first bin after the value 0 refers to May 23, 2019.

This conclusion also holds when we include outlier observations that have extremely high levels of reported time spent experiencing sleeplessness. Our point estimates on including individual and household controls are relatively smaller but point to the same worsening of the mental health of minorities. Moreover, [Cattaneo et al. \(2020b\)](#) suggests that RDD with multiple mass points and discrete running variables are similar to a single mass point for each discrete value of the running variable. We show that when we aggregate our data to a single mass point as the average value of the outcome variable, the point estimate is slightly attenuated but is qualitatively similar to the main point estimate. These results suggest that our empirical setup is not confounded by alternate samples, the inclusion of other control variables, or by different aggregation of data.

We next turn to examining if the main effect differs across various subpopulations. We once again restrict the estimating sample to those respondents who do not report their religion to be Hinduism. The results are presented in [Table 3](#).

Findings from the heterogeneity analysis suggest that the effect of election results on anxiety is more pronounced for males; existing work shows that females, on average, have better objective sleep quality with relatively lower sleep latency values ([Lauderdale et al., 2006](#)). Our point estimates suggest that exposure to a potentially overwhelming external event might exacerbate this sleep quality gap between male and female respondents. We also reveal that the main effect is driven by increased intensity of sleeplessness in young adolescents and non-elderly adults. Respondents who have only completed primary school almost entirely lead to worse mental health post election results. We consider this finding to be symptomatic of the wider issues of the members of minority religions. As poor sleep quality hinders productive capacity and since respondents with only primary school are more likely to be employed in occupations where tasks are more routine and physical²³, sleeplessness may put them at increased risk of physical injury or harm to the work. This hypothesis is bolstered by the relatively larger point estimate for those respondents who report their usual principal activity status to be either self-employed or casual wage laborers.²⁴

While the worsening of mental health for minorities is observed for those respondents who report their caste to be in the “general” category or not, the effect is more pronounced for the former.²⁵ We also find that the increased sleeplessness intensity is concentrated in the top two quartiles of consumption expenditure. On examining the effect of election results on different broad categories of activities, we find that except for the employment related activities, there is a decline in other activities where the effect is statistically significant at conventional levels (see [Table A9](#)). Amongst these broad categories of activities, we document a decline in time spent on activities related to self-care and maintenance. This category of activities includes sleeplessness and sleeping time. Thus, we interpret this as sleeplessness spells worsening the total time spent sleeping in the wake of the BJP victory in the 2019 Lok Sabha elections. We also find that the time spent on outdoor activities goes down.²⁶ This might be because minority religion respondents feel insecure and limit their outdoor time to lower the potential backlash that they may be subjected to.

²³ Almost two-thirds of respondents who have potentially completed schooling and have up to primary schooling report working either as self-employed or casual wage laborer or attending to domestic duties.

²⁴ Due to limited sample size, we do not report point estimate for the sample of respondents who report their usual principal activity status as either being unemployed or not in the labor force.

²⁵ All scheduled castes, scheduled tribes, and other backward class castes are categorized as “not upper caste”.

²⁶ See [Jafarov et al. \(2023\)](#) for a description of activities that are categorized as outdoor activities.

Table 3: Heterogeneity

Sample	Optimal	RD	Robust Inference		Number of Observations	Dep. Var.	Dep. Var.
	Bandwidth	Estimator	p-value	95% CI		Mean	SD
Baseline	40.99	0.917	0.00	[0.42, 1.51]	24,812	1.01	7.56
<i>Sex</i>							
Male	40.24	1.134	0.00	[0.51, 1.98]	12,598	0.87	6.86
Female	42.16	0.703	0.04	[0.04, 1.56]	12,688	1.15	8.23
<i>Age</i>							
Age < 18	41.40	1.238	0.02	[0.24, 2.60]	5,445	0.72	6.42
18 ≤ Age ≤ 35	43.14	1.298	0.00	[0.62, 2.16]	10,437	0.85	6.96
36 ≤ Age ≤ 60	38.67	0.742	0.08	[-0.09, 1.67]	7,455	1.09	7.69
Age ≥ 61	36.93	-1.029	0.38	[-4.43, 1.69]	1,782	2.30	11.74
<i>Highest Education Level</i>							
Illiterate	45.35	0.098	0.94	[-1.37, 1.48]	5,240	1.61	9.60
Primary School	34.52	1.553	0.00	[0.74, 2.37]	10,419	0.91	7.12
Secondary School and Above	50.25	0.596	0.12	[-0.18, 1.50]	9,944	0.82	6.87
<i>Usual Principal Activity</i>							
Self-Employed	42.33	1.653	0.00	[0.88, 2.66]	5,395	0.79	6.37
Salaried/Regular Wage	51.85	0.616	0.29	[-0.65, 2.16]	2,912	0.53	5.07
Casual Wage Labor	31.62	1.816	0.03	[0.17, 3.92]	1,933	1.07	7.47
Domestic Duties	42.56	0.843	0.10	[-0.17, 2.06]	6,939	1.34	8.99
In School or College	42.38	0.816	0.05	[-0.02, 1.93]	6,526	0.66	6.06
<i>Caste</i>							
Upper Caste	32.19	1.436	0.02	[0.18, 2.38]	7,167	1.11	8.06
Not Upper Caste	34.59	0.516	0.17	[-0.22, 1.20]	14,380	0.96	7.31
<i>Usual Monthly Consumption Expenditure</i>							
First Quartile	33.08	-0.148	0.77	[-0.90, 0.67]	5,494	1.13	7.83
Second Quartile	18.97	-0.774	0.34	[-3.39, 1.18]	2,479	1.07	7.83
Third Quartile	38.34	1.240	0.02	[0.18, 2.56]	5,793	0.94	7.38
Fourth Quartile	41.58	1.243	0.01	[0.41, 2.41]	6,593	0.90	7.19
<i>Region</i>							
North	32.20	2.386	0.00	[1.45, 3.73]	6,412	1.21	8.34
West	43.18	3.856	0.00	[1.81, 6.39]	2,980	1.66	10.03
South	38.21	-1.318	0.04	[-2.97, -0.04]	3,665	1.47	8.37
East	23.87	-0.618	0.22	[-1.69, 0.39]	5,428	0.54	5.79
<i>Rural-Urban Status</i>							
Urban	23.79	0.686	0.43	[-0.78, 1.83]	6,169	1.14	7.98
Rural	19.20	-0.121	0.50	[-0.98, 0.48]	5,755	0.91	7.23
<i>Political Climate</i>							
BJP Ruled States Only	42.39	1.647	0.00	[0.81, 2.58]	14,369	1.06	7.91
Electorally Competitive District	39.06	1.117	0.00	[0.50, 1.96]	12,067	0.91	7.10
Not Electorally Competitive District	41.55	0.736	0.11	[-0.15, 1.48]	12,736	1.11	7.99

Notes: Each row corresponds to a different sample. Rows indicate the estimating sample. In each row, the sample is restricted to respondents who do not report their religion as Hinduism. The sample contains data from the India Time Use Survey (ITUS) 2019.

Upon examining the heterogeneity of the main effect by where the respondent resides in the four distinct regions of the country, we find that the effect is concentrated in northern and western parts.²⁷ This result ties well with the following result on the effect being more pronounced in states where BJP has control of state legislature. We do not find that the main effect differs by whether the respondent resides in the rural or urban area of the district.²⁸

We next examine if the main effect differs with the wider political landscape in the respondent's state or district. The results indicate that anxiety by minorities is more pronounced in the states that had the BJP as the ruling party in the state legislature. This result suggests that minorities might experience relatively worse mental health post election results if there is an overlap between the ruling party at the federal and state levels. Although local legislators may improve local economic outcomes if they happen to belong to the ruling party at a higher level, these improvements may worsen the existing disparities across ethnic groups (Asher and Novosad, 2017; Banerjee et al., 2005). Importantly, the estimated effect of election results also differs by the electoral competitiveness in the district – the intensity of sleeplessness is more pronounced in more electorally competitive districts. This result suggests that electoral competition driven incentives to indulge in partisan campaigns might worsen the mental health outcomes of the minority religion respondents.

6 Discussion and Conclusion

In this paper, we identify the causal effect of the announcement of the 2019 Lok Sabha election results (the landslide victory of the incumbent BJP) on the mental health of minority religion respondents. We proxy for mental health using the self-reported spells of sleeplessness. Our results show that while there is no effect of election results on the sleeplessness intensity for Hindus, there is a substantial worsening for minorities, especially Muslims. We establish the validity of our research design through multiple empirical tests and show that our results are robust to alternate samples, data aggregation, and inclusion of control variables.

While documenting significant heterogeneity in the main effect, we find that the sleeplessness intensity is more pronounced for males, young adolescents, and non-elderly adults, those with only primary schooling, self-employment or casual wage labor as usual principal activity status, general caste, and those with above median consumption expenditure. On examining if our effects differ by the electoral landscape in the state and district of residence of the respondent, we find that the minorities residing in states with BJP legislature report worse mental health. This conclusion is also reached for districts with higher levels of electoral competition.

Our results can be interpreted as the negative mental health consequence of religious rhetoric in the lead-up to the elections and during election campaigning by the incumbent BJP candidates. To bolster our claim that religious tensions might negatively affect minorities, we leverage another national event that potentially affected a particular minority religion profoundly – the Ayodhya Land Dispute Verdict by the Supreme Court of India.²⁹ The results in

²⁷ States and union territories that constitute the northern region are Jammu and Kashmir, Himachal Pradesh, Punjab, Chandigarh, Uttarakhand, Haryana, Delhi, Rajasthan, Uttar Pradesh, Chattisgarh, and Madhya Pradesh. States and union territories in the western region are Gujarat, Daman and Diu, Dadra and Nagar Haveli, Maharashtra, and Goa. The southern region consists of Andhra Pradesh, Karnataka, Lakshadweep, Kerala, Tamil Nadu, Puducherry, Andaman and Nicobar Islands, and Telangana. Bihar, Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya, Assam, West Bengal, Jharkhand, and Odisha constitute the eastern region.

²⁸ Rural and urban classification is based on ITUS classification. See Jafarov et al. (2023) for more information on this classification.

²⁹ Ayodhya dispute is a dispute regarding the land that was contested to be the site of the birthplace of the Hindu deity Rama and the

Table A10 provide evidence for the substantial increase in anxiety for Muslims. This effect is absent for Hindus or Christians. These findings, together with our main results, suggest that in periods of religious fervor, minority religious residents might benefit from better access to mental health services.

We conclude by underlining the prospective avenues of research, which remain unexplored herein due to data constraints. One such intriguing perspective involves delving into the causal impact of the Lok Sabha election results announcement on workplace efficiency, short-term educational accomplishments, and other potential outcomes of the interest, whereby sleeplessness could emerge as a pivotal mechanism. While anxiety and associated mental health issues are highly correlated with sleeplessness, scholars may examine the clinical diagnosis of such issues employing novel data sources and test how respondents cope with potential mentally stressful episodes when the source of stress has religious underpinnings. Finally, one may shed light on further downstream effects of worse mental health of minorities that may potentially worsen the existing socioeconomic disparities in India.

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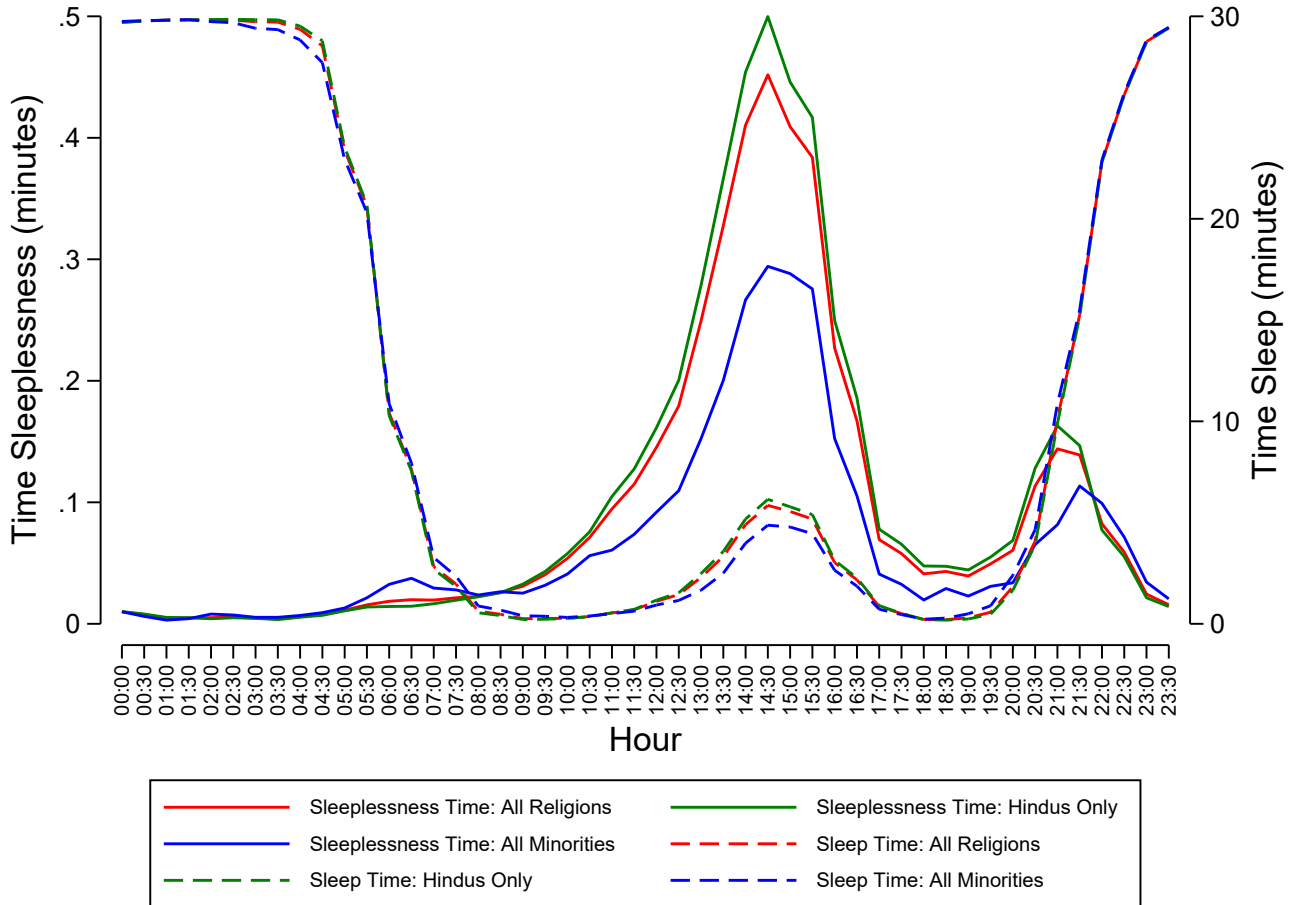
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Appendices

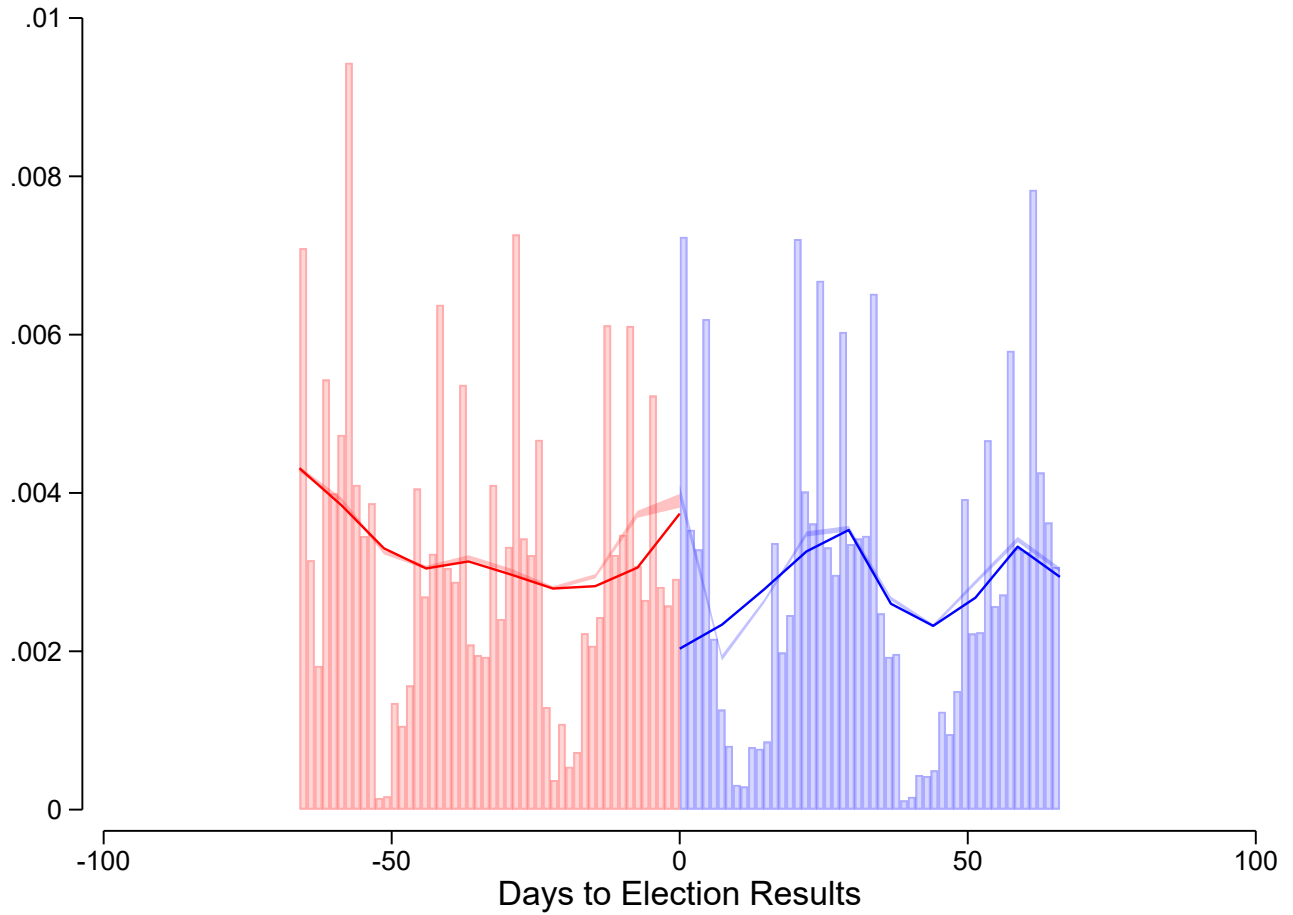
Appendix A Figures and Tables

Figure A1: Time on Sleep and Sleeplessness



Notes: The data comes from the India Time-Use Survey (ITUS) 2019. The sample is restricted to those respondents who were interviewed before May 23, 2019. Time on sleeping and sleeplessness activities within each 30-minute interval is averaged over all the respondents.

Figure A2: Distribution of Running Variable



Notes: The data comes from the India Time-Use Survey (ITUS) 2019. The optimal bandwidth used for density estimators is 22.00. Default options, as documented in [Cattaneo et al. \(2018\)](#) and [Cattaneo et al. \(2022\)](#), are used except for the local polynomial order, which is one. Daily bins; the first bin after the value 0 refers to May 23, 2019. Solid lines are density estimates, and 95% confidence intervals are bands.

Table A1: Summary Statistics

	Mean	SD	Min	Max
Age (in years)	34.317	18.024	6.00	116.00
Usual Monthly Consumption Expenditure (10,000 Rupees)	1.014	0.783	0.00	30.12
Sleeplessness Time (minutes)	4.095	23.865	0.00	780.00
<i>Sex</i>				
Male	0.508	0.500	0.00	1.00
Female	0.492	0.500	0.00	1.00
<i>Religion</i>				
Follow Hinduism	0.814	0.389	0.00	1.00
Follow Islam	0.129	0.335	0.00	1.00
Follow Christianity	0.027	0.161	0.00	1.00
All Minority Religion Follower	0.186	0.389	0.00	1.00
<i>Highest Education Level</i>				
Illiterate	0.222	0.416	0.00	1.00
Primary School	0.440	0.496	0.00	1.00
Secondary School or above	0.338	0.473	0.00	1.00
<i>Usual Principal Activity</i>				
Self-Employed	0.197	0.398	0.00	1.00
Salaried/Regular Wage	0.099	0.298	0.00	1.00
Casual Wage Labor	0.125	0.331	0.00	1.00
Domestic Duties	0.269	0.443	0.00	1.00
In School or College	0.237	0.425	0.00	1.00
Unemployed or Not in Labor Force	0.073	0.260	0.00	1.00
<i>Caste</i>				
Upper Caste	0.280	0.449	0.00	1.00
Not Upper Caste	0.720	0.449	0.00	1.00
<i>Region</i>				
North	0.385	0.487	0.00	1.00
West	0.143	0.350	0.00	1.00
South	0.212	0.409	0.00	1.00
East	0.260	0.438	0.00	1.00
<i>Rural-Urban Status</i>				
Urban	0.303	0.459	0.00	1.00
Rural	0.697	0.459	0.00	1.00

Notes: The sample contains data from the India Time Use Survey 2019. The number of observations in each row is 442,607. Survey weights are used to account for complex survey design.

Table A2: Number of Interviews in the District

Sample	Optimal	RD	Robust Inference		Number of Observations	Dep. Var.	Dep. Var.
	Bandwidth	Estimator	p-value	95% CI		Mean	SD
All Religions	18.31	0.071	0.61	[-0.61, 1.04]	4,932	9.28	6.50
Hindus Only	23.01	-0.261	0.72	[-0.89, 0.61]	5,354	8.27	5.86
All Minorities	24.79	0.177	0.47	[-0.49, 1.06]	2,341	6.05	4.58
Muslims Only	31.12	0.547	0.14	[-0.22, 1.55]	1,994	5.68	3.85

Notes: Each row corresponds to a different sample. Rows indicate the estimating sample. The dependent variable in all rows is the number of interviews conducted in the district. The sample contains data from the India Time Use Survey (ITUS) 2019.

Table A3: Effect of Election Results on Sleeplessness – Alternate Cutoffs

Cutoff	Optimal	RD	Robust Inference		Number of Observations	Dep. Var.	Dep. Var.
	Bandwidth	Estimator	p-value	95% CI		Mean	SD
Cutoff = -6	15.92	-0.043	0.81	[-0.54, 0.43]	6,515	0.81	6.14
Cutoff = -5	15.70	0.139	0.80	[-0.45, 0.59]	6,441	0.81	6.14
Cutoff = 0	40.99	0.917	0.00	[0.42, 1.51]	24,812	1.01	7.56
Cutoff = 5	19.22	-0.542	0.58	[-1.61, 2.89]	6,413	0.67	5.38
Cutoff = 6	24.40	-1.257	0.47	[-2.83, 1.30]	8,863	0.67	5.38

Notes: Each row corresponds to a different cutoff. Rows indicate the cutoff. In each row, the sample is restricted to respondents who do not report their religion as Hinduism. The sample contains data from the India Time Use Survey (ITUS) 2019.

Table A4: Effect of Election Results on Sleeplessness – Donut-Hole Approach

Donut-Hole Radius	Optimal	RD	Robust Inference		Number of Observations	Dep. Var.	Dep. Var.
	Bandwidth	Estimator	p-value	95% CI		Mean	SD
Baseline	40.99	0.917	0.00	[0.42, 1.51]	24,812	1.01	7.56
1	30.08	1.432	0.00	[0.68, 2.27]	17,671	1.01	7.55
2	24.92	1.806	0.00	[1.03, 2.85]	11,841	1.00	7.51
3	22.76	2.132	0.00	[1.13, 3.47]	9,828	0.99	7.50
4	18.93	3.408	0.00	[1.97, 5.36]	7,078	0.99	7.49
5	20.41	2.564	0.01	[0.72, 4.76]	7,429	0.99	7.48

Notes: Each row corresponds to a different interval around the cutoff from which the observations are excluded. Rows indicate the interval. In each row, the sample is restricted to respondents who do not report their religion as Hinduism. The sample contains data from the India Time Use Survey (ITUS) 2019.

Table A5: Alternate Bandwidths

Bandwidth	Optimal	RD	Robust Inference		Number of Observations	Dep. Var.	Dep. Var.
	Bandwidth	Estimator	p-value	95% CI		Mean	SD
h_{MSE}	40.99	0.917	0.00	[0.42, 1.51]	24,812	1.01	7.56
$2h_{MSE}$	81.98	0.533	0.00	[0.62, 1.58]	50,257	1.01	7.56
h_{CER}	23.09	0.371	0.12	[-1.75, 0.21]	13,138	1.01	7.56
$2h_{CER}$	46.18	0.937	0.11	[-0.12, 1.17]	27,743	1.01	7.56

Notes: Each row corresponds to a different bandwidth. Rows indicate the bandwidth. h_{MSE} and h_{CER} refer to MSE and CER optimal bandwidths (Cattaneo et al., 2020b). In each row, the sample is restricted to respondents who do not report their religion as Hinduism. The sample contains data from the India Time Use Survey (ITUS) 2019.

Table A6: Effect of Election Results on Sleeplessness – Robustness Tests

Sample	Optimal	RD	Robust Inference		Number of	Dep. Var.	Dep. Var.
	Bandwidth	Estimator	p-value	95% CI	Observations	Mean	SD
Baseline	40.99	0.917	0.00	[0.42, 1.51]	24,812	1.01	7.56
HH Without Infants	39.61	0.905	0.00	[0.45, 1.53]	23,632	1.00	7.54
States Without Elections	38.68	1.039	0.00	[0.52, 1.68]	21,993	0.97	7.50
Normal Day Only	36.98	0.959	0.00	[0.29, 1.57]	20,016	1.02	7.62
Weekdays Only	42.48	0.730	0.03	[0.06, 1.50]	16,204	1.00	7.53
Include Covariates	37.07	0.720	0.00	[0.29, 1.36]	23,553	1.01	7.56
Aggregate Data	41.69	0.639	0.02	[0.11, 1.37]	83	1.01	1.07
Only Major Activity	34.90	1.761	0.00	[0.73, 2.62]	22,151	1.52	11.09
Include Outlier Obs.	49.27	1.923	0.01	[0.49, 3.69]	29,471	2.67	19.62

Notes: Each row corresponds to a different sample. Rows indicate the estimating sample. In each row, the sample is restricted to respondents who do not report their religion as Hinduism. The sample contains data from the India Time Use Survey (ITUS) 2019. The second row drops households who have any members less than one year of age at the time of the survey. The third row drops states where state legislative assembly elections are held concurrently with the Lok Sabha elections. The fourth row drops all days which are reported as in the ITUS. The fifth row drops respondents who are interviewed either on Saturday or Sunday. The sixth row includes individual, household, and weather controls. Individual controls include age, sex, highest education level, and usual principal activity status. Household controls include number of members in the household, whether a household is an upper caste or not, usual monthly consumption expenditure, and whether the household uses a clean fuel as a primary source of energy for cooking. Weather controls include temperature and precipitation. The seventh row aggregates data for each day of the interview using arithmetic mean. The eighth row assigns all the time within each 30-minute interval to the activity reported by the respondent. The ninth row includes observations that are above the 99th percentile of the sample distribution.

Table A7: Robustness Tests for Muslims Only

Sample	Optimal	RD	Robust Inference		Number of	Dep. Var.	Dep. Var.
	Bandwidth	Estimator	p-value	95% CI	Observations	Mean	SD
Baseline	39.65	2.868	0.00	[1.69, 4.34]	14,275	2.11	12.84
HH Without Infants	38.26	2.705	0.00	[1.66, 4.26]	13,576	2.10	12.82
States Without Elections	37.87	2.854	0.00	[1.62, 4.34]	13,387	2.00	12.67
Normal Day Only	37.68	3.549	0.00	[1.88, 5.09]	12,174	2.11	12.85
Weekdays Only	39.26	2.413	0.00	[0.86, 4.24]	9,078	2.06	12.68
Include Covariates	35.98	2.477	0.00	[1.33, 3.97]	13,153	2.11	12.84
Aggregate Data	47.30	2.688	0.01	[0.74, 5.82]	95	2.05	2.50
Only Major Activity	39.07	2.962	0.00	[1.84, 4.45]	14,267	2.04	12.85
Include Outlier Obs.	38.86	2.486	0.20	[-1.01, 4.77]	14,244	3.49	22.45

Notes: Each row corresponds to a different sample. Rows indicate the estimating sample. In each row, the sample is restricted to respondents who report their religion as Islam. The sample contains data from the India Time Use Survey (ITUS) 2019. The second row drops households who have any members less than one year of age at the time of the survey. The third row drops states where state legislative assembly elections are held concurrently with the Lok Sabha elections. The fourth row drops all days which are reported as in the ITUS. The fifth row drops respondents who are interviewed either on Saturday or Sunday. The sixth row includes individual, household, and weather controls. Individual controls include age, sex, highest education level, and usual principal activity status. Household controls include number of members in the household, whether a household is an upper caste or not, usual monthly consumption expenditure, and whether the household uses a clean fuel as a primary source of energy for cooking. Weather controls include temperature and precipitation. The seventh row aggregates data for each day of the interview using arithmetic mean. The eighth row assigns all the time within each 30-minute interval to the activity reported by the respondent. The ninth row includes observations that are above the 99th percentile of the sample distribution.

Table A8: Robustness Tests for Christians Only

Sample	Optimal	RD	Robust Inference		Number of Observations	Dep. Var.	Dep. Var.
	Bandwidth	Estimator	p-value	95% CI		Mean	SD
Baseline	37.20	0.290	0.04	[0.02, 0.64]	5,155	0.15	2.01
HH Without Infants	37.44	0.290	0.04	[0.02, 0.65]	5,029	0.15	2.01
States Without Elections	45.80	0.293	0.08	[-0.04, 0.66]	5,488	0.13	1.86
Normal Day Only	38.55	0.352	0.04	[0.02, 0.77]	4,335	0.16	2.10
Weekdays Only	45.38	0.131	0.29	[-0.13, 0.42]	3,767	0.16	2.10
Include Covariates	33.70	0.317	0.02	[0.05, 0.68]	4,758	0.15	2.01
Aggregate Data	55.67	0.331	0.18	[-0.14, 0.78]	110	0.26	1.18
Only Major Activity	41.85	0.147	0.33	[-0.16, 0.48]	5,619	0.14	2.04
Include Outlier Obs.	36.07	-0.485	0.66	[-1.71, 1.07]	5,144	0.85	10.28

Notes: Each row corresponds to a different sample. Rows indicate the estimating sample. In each row, the sample is restricted to respondents who report their religion as Christianity. The sample contains data from the India Time Use Survey (ITUS) 2019. The second row drops households who have any members less than one year of age at the time of the survey. The third row drops states where state legislative assembly elections are held concurrently with the Lok Sabha elections. The fourth row drops all days which are reported as in the ITUS. The fifth row drops respondents who are interviewed either on Saturday or Sunday. The sixth row includes individual, household, and weather controls. Individual controls include age, sex, highest education level, and usual principal activity status. Household controls include number of members in the household, whether a household is an upper caste or not, usual monthly consumption expenditure, and whether the household uses a clean fuel as a primary source of energy for cooking. Weather controls include temperature and precipitation. The seventh row aggregates data for each day of the interview using arithmetic mean. The eighth row assigns all the time within each 30-minute interval to the activity reported by the respondent. The ninth row includes observations that are above the 99th percentile of the sample distribution.

Table A9: Heterogeneity by Activity Type

Variable	Optimal	RD	Robust Inference		Number of Observations	Dep. Var. Mean	Dep. Var. SD
	Bandwidth	Estimator	p-value	95% CI			
Baseline	40.99	0.917	0.00	[0.42, 1.51]	24,812	1.01	7.56
<i>Single-Digit Codes</i>							
Code 1: Employment and related activities	29.23	18.111	0.02	[3.84, 36.80]	17,930	150.55	229.61
Code 2: Production of goods for own final use	24.14	-6.166	0.02	[-13.16, -1.19]	13,826	25.22	80.68
Code 3: Unpaid domestic services for household and family members	51.09	1.195	0.93	[-9.07, 9.90]	29,821	129.93	169.78
Code 4: Unpaid caregiving services for household and family members	41.87	-6.889	0.00	[-10.77, -3.91]	25,287	28.36	66.57
Code 5: Unpaid volunteer, trainee and other unpaid work	40.85	-0.825	0.34	[-1.99, 0.68]	24,812	3.19	23.74
Code 6: Learning	27.47	-7.139	0.28	[-16.60, 4.73]	16,191	97.21	194.28
Code 7: Socializing and communication, community participation and religious practice	41.15	3.892	0.55	[-5.41, 10.13]	25,287	140.76	122.24
Code 8: Culture, leisure, mass media and sports practices	44.25	-3.151	0.46	[-10.44, 4.71]	26,844	145.21	119.08
Code 9: Self-care and maintenance	17.97	-9.869	0.03	[-22.55, -0.96]	10,096	719.57	112.23
Outdoor Activity Duration	41.27	-10.893	0.05	[-18.86, -0.04]	25,287	123.67	162.08

Notes: Each row corresponds to a different specification. Rows indicate the dependent variable. In each row, the sample is restricted to respondents who do not report their religion as Hinduism. The sample contains data from the India Time Use Survey (ITUS) 2019.

Table A10: Effect of Election Results on Sleeplessness – Additional Events

Sample	Optimal	RD	Robust Inference		Number of Observations	Dep. Var.	Dep. Var.
	Bandwidth	Estimator	p-value	95% CI		Mean	SD
Cutoff: Election Results							
Minorities Only	40.99	0.917	0.00	[0.42, 1.51]	24,812	1.01	7.56
Cutoff: Ayodhya Dispute Verdict							
All Religions	28.39	0.155	0.56	[-0.30, 0.56]	78,134	2.24	13.22
Hindus Only	30.25	0.006	0.85	[-0.44, 0.53]	66,875	2.43	13.76
All Minorities	26.04	0.170	0.60	[-0.51, 0.88]	14,643	1.01	7.56
Muslims Only	26.94	1.696	0.00	[0.61, 3.13]	8,655	2.11	12.84
Christians Only	22.56	-1.075	0.00	[-1.93, -0.36]	2,835	0.15	2.01

Notes: Each row corresponds to a different sample. Rows indicate the estimating sample. The dependent variable in all rows is the time spent experiencing sleeplessness. Sleeplessness activity is discussed in the main text. Cutoff in the second panel is the date of Ayodhya Dispute Verdict, i.e., November 9, 2019. The sample contains data from the India Time Use Survey (ITUS) 2019.