Consumer Sentiment and Identity Politics: Evidence from India

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Abstract

We study how shifts in political power affect economic sentiment and consumption behavior in identity-polarized settings. Using panel data from more than 178,000 Indian households, we find that sentiment about personal finances - but not the national economy - predicts household expenditure, even after controlling for income growth. Exploiting close elections, we find that Muslim households become more pessimistic after electoral victories by the Hindu nationalist party, especially about national conditions. However, this divergence in sentiment is not associated with corresponding differences in spending. A simple Bayesian learning model explains this disconnect through limited transmission from macro beliefs to personal expectations.

Keywords: sentiment, consumption, close elections, identity politics
JEL Codes: C36, D72, D83, E7, E20

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1 Introduction

A growing body of work argues that shifts in optimism or pessimism — captured in expectations not directly tied to economic fundamentals — can influence real economic behavior, including household consumption (Angeletos and La'O, 2013; Benhabib, Wang and Wen, 2015; Acharya, Benhabib and Huo, 2021; D'Acunto and Weber, 2024). However, the effects of such sentiment shifts are difficult to study causally because they tend to move with the underlying economic conditions. One promising approach uses partisan differences in economic beliefs, where supporters of the winning party express more optimism and opponents turn more pessimistic.[1] Most of the existing evidence on this comes from settings where political preferences are relatively stable and party competition is largely ideological (for example, the US, Australia and Europe).

Many political systems around the world are shaped by enduring identity cleavages — along ethnic, caste, or religious lines — and characterized by frequent elections and clientelistic party-voter links (Anderson, Francois and Kotwal, 2015). In such settings, electoral outcomes can have more immediate implications for different groups, especially when political power is closely tied to access to state resources or protection. This can lead to sharper shifts in economic sentiment along identity lines. At the same time, greater income volatility and limited access to formal smoothing mechanisms may make households more cautious — compartmentalizing their beliefs and responding selectively to political developments. These dynamics remain poorly understood, despite being central to how political change shapes economic behavior in large parts of the developing world.

In this paper, we address the following key questions in the Indian context. Does economic sentiment meaningfully predict household consumption in settings with high economic vulnerability? And, how does political change, especially when power shifts to groups associated with majoritarian or anti-minority rhetoric, reshape both economic sentiment and consumption choices of households of majority and minority populations? Understanding these dynamics is essential, as shifts in economic confidence can influence spending and broader patterns of economic inequality.

We use novel data from a panel survey of Indian households – the Consumer Pyramids Household Survey (CPHS), to study the nexus between identity politics, households' economic sentiment about their personal finances and the national economy, as well as household spending. We begin by documenting that households' perception of their current financial condition relative to the past and expectations about their future financial condition relative to the present, are both significant predictors of changes in total household spending, even after controlling for current and future income growth. The role of individual economic sentiment — whether forward- or backward-looking — in driving household expenditure is stronger for more discretionary expenditure categories, like luxury items, than for necessities such as food. It is also stronger for poorer socio-economic groups, for example, Muslims relative to Hindus – likely because fewer consumption-smoothing channels are

[1] As an alternative to the political channel, Lagerborg, Pappa and Ravn (2023) use fatalities in mass shootings in the US as an exogenous source of variation for consumer sentiment.

available to less-well-off households. On the other hand, household sentiment about the expected future of the national economic condition does not play any additional role in driving household expenditure. While we know of no other paper comparing the relative importance of personal versus national sentiments for household expenditure, our data suggest that the information content of national sentiment may be fully captured by personal sentiment in explaining household spending.

We then investigate how political events shape both types of sentiment and why shifts in national sentiment induced by these events may not fully pass through to personal sentiment and expenditure. In particular, we investigate how the political alignment of religious groups in India can differentially impact their individual and national economic sentiments in response to the electoral performance of parties. Most of the literature on politics-driven economic sentiment relies on the party affiliation reported by voters, which may itself be endogenous to economic conditions or to expectations about electoral outcomes. Furthermore, in a multiparty democracy like India, households often vote for different parties depending on whether it is a state election, a national election, or a local municipality/village-level election. Therefore, predicting the political alignment of households or geographical units is challenging. To overcome these issues, we use religion – an identity determined at birth and largely immutable – and historical patterns of political alignment along religious lines, as a way to identify a causal channel linking politics to economic sentiment.

We rely on a widely recognized political alignment of the Muslim population in India – the country's largest religious minority group. The majority of Muslims in India vote against the Bharatiya Janata Party (BJP), because of its majoritarian pro-Hindu and often anti-Muslim stance. Throughout India, the BJP faces political opposition from a large number of parties, but a common feature in all regions of India is the consolidation of Muslim votes against the BJP.[2] Thus, it is a reasonable prediction that Muslims, on average, become more pessimistic about the national economy when the BJP wins an election. On the other hand, because Hindu voters are not sufficiently consolidated to vote en masse for the BJP (due to caste divisions, among other reasons), the change in their sentiment following a BJP victory is ambiguous.

We model the differing priors of Hindu and Muslim households regarding the economic impact of a BJP victory within a simple Bayesian learning framework. After an election, every household observes (i) a public, economy-wide signal about where national income is heading and (ii) a private cue, hinting at how much national conditions will move their personal finances. Because Hindus start out more optimistic and Muslims more pessimistic (about the BJP), the Hindu–Muslim gap in national outlook is naturally large after a BJP win. Yet two frictions—uncertainty about transmission (if the average link from GDP to household income is weak) and idiosyncratic noise in private income (which makes the cue noisy and thus down-weighted)—dampen how much that macro gap maps

[2]Even during the height of the pro-BJP political wave between August and November 2014, the Samaj Survey Project by the Centre for Monitoring the Indian Economy Pvt. Ltd. (CMIE) found for a subset of roughly 40,000 individuals in the CPHS that more than 67% of Muslims did not vote for the BJP. This statistic is still likely to be an underestimate because Muslims might be fearing political backlash by openly stating their opposition to the BJP. Relatedly, Ghosh et al. (2024) also find that Muslims are significantly more likely to disapprove of the BJP and its prime ministerial candidate.

into personal sentiment. Whenever these frictions are large (small) enough, the model predicts a strictly smaller (larger) Hindu–Muslim difference in personal sentiment than in national sentiment. And because consumption reacts primarily to personal, and not national sentiment, the resulting gap in actual spending is even more muted.

We then empirically test whether BJP victories in state-level assembly constituencies lead to a divergence in national economic sentiment between Hindus and Muslims, and whether the corresponding divergence in personal economic sentiment is smaller, as predicted by the theory.[3] Specifically, we use variation in the share of state assembly seats won by the BJP across districts, and test whether Muslims and Hindus become more or less pessimistic in those districts. The BJP's seat share, however, is likely to be endogenous to other regional and socio-political factors, which cannot be adequately accounted for by geographic or household fixed effects. Therefore, to obtain causal variation across districts in the share of BJP seats, we use the following instrumental variable (IV): the share of close seats won by the BJP in a district as a *fraction* of the total number of close elections in which the BJP was involved in that district. Similar close-election instrumental variables have been used in the literature in different contexts (see, for example, Clots-Figueras (2011), Bhalotra and Clots-Figueras (2014) and Aneja and Ritadhi (2022)) and the idea behind it is simple: when the margin of victory is arbitrarily small, the electoral outcome is determined by exogenous factors like the weather, voter turnout, etc., which political parties have only imperfect control over. Therefore, quasi-random variation in the BJP's *strike rate in close elections* (across districts) is likely to be a valid instrument for overall seat share in a district.[4]

Our causal estimates using close-election IV show that in districts where the BJP won a higher share of state assembly constituencies between 2015 and 2022, Muslim households became significantly more pessimistic about the national economy. We also find a reduction in sentiment about household finances for Muslims, but the effect size is comparatively smaller. We estimate a zero effect of close BJP victories for Hindus, both on their individual and national economic sentiments. In terms of magnitudes, we find that an increase in BJP seat share from 0.20 to 0.67 (25^{th} to 75^{th} percentile) causes a 0.11–0.18σ divergence in Hindu-Muslim personal economic sentiment and a larger 0.24σ divergence in national economic sentiment, with both differences statistically significant. The comparatively greater relevance of political leanings for macroeconomic sentiment vis-à-vis personal finance sentiment is not only consistent with the predictions of our Bayesian belief-updating framework, but is also in line with empirical findings from countries such as the US and the UK (see Huberman et al. (2018)).

Despite the substantial negative impact of the BJP's share of seats on the sentiment of Muslim households, we observe a minimal effect on their overall income and spending patterns. However,

[3]The BJP was in power at the federal level throughout our sample period. Since states in India wield considerable fiscal power, BJP victories in state assembly elections during this period can be more easily tied to changes in the economic sentiment of households.

[4]The smallest administrative unit for which we have household location data is the district rather than the assembly constituency. As a result, a straightforward regression discontinuity design cannot be implemented.

there is some underlying heterogeneity. For instance, Muslims report a statistically significant reduction in government transfer income compared to Hindus ($p = 0.02$). This finding could be driven by negative perception of Muslims about their local BJP leadership, or could suggest potential religious targeting in government cash transfers by the BJP. Nevertheless, such transfers represent only a small fraction of household income, leading to no observable impact on total income. For consumption, we find that spending behavior varies somewhat by religion following electoral gains by the BJP. Notably, Muslim households allocate significantly less to health services compared to Hindu households ($p = 0.01$) and similarly, albeit less significantly, reduce spending on luxury goods ($p = 0.16$) (p-values are for Hindu-Muslim differences). But once again, negative sentiment among Muslims does not translate into a decline in their total expenditure. A potential explanation for why politically driven sentiment exerts only a weak influence on personal consumption decisions is that total household expenditure is more closely related to individual sentiment rather than national sentiment, and political change has a stronger impact on national sentiment than individual sentiment (as our model predicts).

Collectively, these findings indicate that the increase in economic pessimism among Muslim households after narrow BJP victories is not matched by a similar broad-based deterioration in their actual economic conditions. While this disconnect can also arise from individuals adjusting their economic perceptions to align with longstanding political or identity-based views (without underlying conditions changing substantially), we favor the interpretation of our Bayesian learning model because it naturally predicts the gradual attenuation we observe: from a pronounced gap in national sentiment, to a smaller one in personal sentiment, and finally to minimal differences in consumption behavior.

Our work is primarily related to the literature documenting the role of households' political affiliation in driving exogenous movements in their sentiment and economic choices around election time, particularly in developed countries.[5] Papers such as Coibion, Gorodnichenko and Weber (2020) and Binder, Kamdar and Ryngaert (2024) for the U.S., Guirola (2025) for European countries, and Gillitzer, Prasad and Robinson (2021) for Australia and the U.S. study the heterogeneous dynamics of expected economic outcomes based on households' political affiliation. Other works extend these findings by examining whether shifts in economic sentiment around election time lead to changes in actual economic behavior. For example, Meeuwis et al. (2022) show that after the election of US President Trump in 2016, likely Democrats rebalanced their investment portfolios into safe assets, while likely Republicans increased the equity share of their portfolios. Gerber and Huber (2009), Benhabib and Spiegel (2018) and Kamdar and Ray (2022) find that household consumption demand increases when constituents are politically aligned with the party of the sitting President. Using Australian data, Gillitzer and Prasad (2018) also find that shocks to economic sentiment of partisan

[5]For brevity, we focus on the part of the literature most relevant to our work—that is, studies linking politics with households' sentiment and economic decisions. Related strands examine the relationship between political ideology and non-economic household choices, such as vaccine uptake and COVID-19 preventive behaviors, as well as the influence of politics on the behavior of firms and institutional investors.

households during elections affect consumption expenditure. Using US county-level variation in the ideological predisposition of constituents, Mian, Sufi and Khoshkhou (2015, 2023), however, show that while individuals in counties more predisposed toward the losing party turn more pessimistic about government economic policy after the election, such changes in sentiment do not translate into changes in consumer spending. Our results for India are thus the closest to findings in Mian, Sufi and Khoshkhou (2015, 2023). Apart from being the first study in a developing country to document the triangular relationship among electoral outcomes, economic sentiment, and consumption spending, our main contribution lies in the identification strategy. We exploit close elections as an IV to estimate the causal effect of electoral outcomes on both sentiment and expenditure, disaggregated by identity group. We further contribute by developing a theoretical framework that explains how political outcomes can differentially shape national versus personal economic sentiment—and why such shifts sometimes translate into real consumption changes, but in other cases may not.

Our work speaks to a secondary strand of literature, studying the relationship between economic sentiment and consumption, without reference to the political affiliation of the households. The empirical literature on how economic sentiment impacts consumption has typically focused on the time series correlation between economy-wide sentiment indices and aggregate consumption in developed economies (see, for example, Blanchard (1993), Hall (1993), Friend and Adams (1964), Carroll, Fuhrer and Wilcox (1994), Ludvigson (1996, 2004), Bram and Ludvigson (1998) and Howrey (2001) for US-based evidence, Acemoglu and Scott (1994) for the UK, Kwan and Cotsomitis (2006) for Canada, and Fan and Wong (1998) for Hong Kong) and even developing countries like Indonesia (see Juhro and Iyke (2020)). Nevertheless, Attanasio and Weber (1995) argue that in the absence of individual or household-level data, aggregation across consumers to estimate the intertemporal consumption choice equation can lead to spurious correlations between consumption and household expectations. Papers such as Jappelli and Pistaferri (2000), Souleles (2004), Attanasio, Kovacs and Molnar (2020) and Stoltenberg and Uhlendorff (2024) address this criticism by using disaggregated data on sentiment, income and expenditure from household panel surveys. Our work is closest to this latter approach. The household panel data allows us to study the heterogeneity of the relationship across different identity groups within India, but more importantly, to control for permanent idiosyncratic differences across households in their general optimism and pessimism through household fixed effects and aggregate economic conditions through state$\times$year fixed effects. Finally, we push the research frontier further by studying the heterogeneous impact of household sentiment on spending on necessities like food vis-à-vis more discretionary spending like luxury items and human capital investments in health and education, thereby making such correlations between sentiment and spending patterns potentially policy-relevant, particularly in a developing economy context.

Finally, our paper also contributes to research on party control and group-specific outcomes. Beland (2015) shows Democratic governors narrow the Black–White earnings gap in the U.S. (Beland, 2015), and in India BJP rule is linked to heightened Hindu–Muslim tensions and anti-Muslim rhetoric (Nellis, Weaver and Rosenzweig 2016; Jaffrelot 2021). Although extensive work explores how a polit-

ical leader's identity (e.g., caste or gender) shapes economic outcomes in India (Chattopadhyay and Duflo 2004; Bardhan, Mookherjee and Torrado 2005; Aneja and Ritadhi 2022), we are not aware of studies exploring how *party* control overall affects *economic* outcomes. We fill this gap by showing that, in close elections, Muslim households' income and consumption under narrow BJP victories are statistically indistinguishable from those under narrow BJP defeats—implying limited economic spillovers from broader political change.

The rest of the paper is organized as follows. Section 2 presents a theoretical framework illustrating how differences in priors about the role of a political party in the national economy across two identity groups can be amplified for national economic sentiment but muted for individual sentiment. In Section 3, we provide details of the datasets used in the analyses and discuss the survey questionnaire on economic sentiment, specifying how we construct the sentiment variables from the categorical responses in the survey for our empirical analyses. We also motivate and discuss the regression models that we use to study the relationship between sentiment and expenditures, and identify the causal effect of identity politics on economic sentiment. Section 4 then presents key summary statistics and discusses the plausible empirical validity of the instrumental variable. Section 5 presents and discusses the empirical findings, and how they relate to the predictions of the model in Section 2. Finally, Section 6 concludes.

2 A Model of Individual Sentiment Formation from Noisy Signals about the National Economy

In this section, we present a simple theoretical framework to motivate the understanding of how individuals might combine a noisy public signal about the national economy with their private individual cues to form beliefs about personal finances. In the model, we take as given the difference in the subjective beliefs of Hindus and Muslims in India about the contribution of the Hindu-nationalist party (BJP) to the national economy. We then show that after election results are announced, when households update their beliefs, both about the national economy and how the national economy influences their individual income, the difference in sentiment about personal finances between Hindus and Muslims can be smaller than their difference in national economic sentiment. This forms a testable prediction, which we empirically verify later in Section 5.

Set-up and timeline. Each household i belongs to either of the two religious groups - Hindu or Muslim, $g \in \{H, M\}$. There are two periods $t \in \{0, 1\}$. In period 0, elections are held and the outcome is denoted by $e \in \{0, 1\}$, with $e = 1$ denoting a BJP victory. Immediately after election results are announced, households form beliefs about the future state of the national economy as well as their personal finances. This, then, determines household consumption in period 1.

The true processes determining national income and personal finances are given as follows:

$$Y^N = \bar{Y}^N + \theta e + \varepsilon^N; \quad \text{where} \quad \varepsilon^N \sim N\left(0, \sigma_N^2\right) \tag{2.1}$$

$$Y_i^P = \alpha X_i + \beta_i Y^N + \varepsilon_i^P; \quad \text{where} \quad \varepsilon_i^P \overset{\text{i.i.d.}}{\sim} N(0, \sigma_P^2) \quad \& \quad \beta_i \overset{\text{i.i.d.}}{\sim} N\left(\bar{\beta}, v_0^2\right) \tag{2.2}$$

In the national income equation (2.1), $\bar{Y}^N$ denotes a baseline level of national income, θ denotes the "true" national deviation from the baseline level due to the election outcome and ε^N is an error term. The personal financial condition or household income Y_i^P in equation (2.2) is determined by household characteristics X_i, the household's latent sensitivity of how the national economy influences individual finances β_i, and an error term ε_i^P.

In period 0, households hold group-specific priors about the impact of the election outcome on the national economy $\theta|g$, and after the election results are announced, they observe a noisy signal s of the true national income Y^N:

$$\theta|g \sim N\left(\bar{\theta} + \lambda_g, v_\theta^2\right); \quad \text{where} \quad \lambda_H > 0 > \lambda_M \tag{2.3}$$

$$s = Y^N + \eta; \quad \text{where} \quad \eta \sim N\left(0, \tau^2\right), \quad \eta \perp (\varepsilon^N, \varepsilon_i^P, \theta, \beta_i) \tag{2.4}$$

The specification of the group-specific prior in equation (2.3) reflects increased optimism (pessimism) about the national economy for Hindus (Muslims) after a BJP victory. Since Y^N is affine in θ and ε^N (without loss of generality, considering $\bar{\theta} = 0$), we obtain:

$$Y^N|g \sim N\left(\bar{Y}^N + \lambda_g,\, V_0\right) \quad \text{where} \quad V_0 \equiv v_\theta^2 + \sigma_N^2 \tag{2.5}$$

Updating belief about the national economy. Once the signal s is realized, households update their beliefs about the national economy using conjugate-normal learning as follows:

$$Y^N|s, g \sim N\left(S_g^N, V^N\right) \tag{2.6}$$

The posterior mean of national income given religious identity and signal realization is a precision-weighted combination of the prior mean and the observed signal, $S_g^N = (1 - \omega_s)\left(\bar{Y}^N + \lambda_g\right) + \omega_s s$, with the weight $\omega_s \equiv \frac{Q_s}{Q_0 + Q_s}$, where we use Q's to denote the precision of the variables: $Q_0 \equiv \frac{1}{V_0}$ and $Q_s \equiv \frac{1}{\tau^2}$. The variance of the posterior distribution is given by $V^N = \frac{1}{Q_0 + Q_s}$.

Updating belief about how the national economy influences household income. Once the public signal s (and hence the national posterior S_g^N) is observed, each household updates its prior on β_i - the latent sensitivity of how the national economy impacts individual finances, using the observed private cue $z_i \equiv \frac{Y_i^P - \alpha X_i}{Y^N} = \beta_i + \frac{\varepsilon_i^P}{Y^N}$, via conjugate-normal learning. Under these model assumptions, we get the following lemma about the predictive variance of z_i.

Lemma (Proof in Appendix A): The private cue, z_i has predictive variance $\sigma_z^2(s) \approx \sigma_P^2 (S_g^N)^{-2} \left(1 + 3\frac{V^N}{(S_g^N)^2}\right)$, and the corresponding Kalman-gain weight placed on z_i in the update for β_i is $\kappa(s) \equiv \frac{v_0^2}{v_0^2 + \sigma_z^2(s)}$.

Between-group gaps in national and individual sentiments. We define the gap in sentiment about the national economy between the two groups H and M as $\Delta^N \equiv S_H^N - S_M^N$, where $S_g^N = \mathbb{E}\left[Y^N \mid s, g\right]$ for $g \in \{H, M\}$. Similarly, the between-group gap in sentiment about individual household finances can be defined as $\Delta^P \equiv P_H - P_M$, where $P_g = \mathbb{E}\left[Y_i^P \mid z_i, s, g\right]$ for $g \in \{H, M\}$.

Proposition (Proof in Appendix A): The individual or personal sentiment gap Δ^P is strictly smaller than the national sentiment gap Δ^N, if (a) $\sigma_P^2 > v_0^2 S_H^N S_M^N$ and (b) $\bar{\beta}$ is sufficiently small.

We provide some intuition for the proof here. The attenuation of the between-group difference in personal economic sentiment emerges from how households balance two signals: (1) the national economic outlook (shaped by election-driven priors λ_H, λ_M), and (2) their expectations of how national conditions will translate to personal income through β_i. When $\bar{\beta}$ is small, personal finances are less tied to macro trends on average, so election-induced optimism/pessimism has limited downstream effects. This mechanically shrinks Δ^P relative to Δ^N. Similarly, when idiosyncratic noise in personal finances, σ_P^2 is high, making private signals unreliable (e.g., due to shocks to one's health or the local labor market), households discount their own experiences and rely more on national news, *but* the noise prevents their personal beliefs from fully mirroring identity-driven gaps. So long as the noise σ_P^2 dominates prior uncertainty, v_0^2, scaled by the levels of national income expected by both groups, $S_N^H S_N^M$, the personal sentiment gap will again be smaller than the national sentiment gap. The proposition formalizes why political polarization might not fully translate to consumption disparities: real-world randomness (high σ_P^2) and/or weak macro-micro linkages (small $\bar{\beta}$) act as friction against belief spillovers to individual economic decisions.

While we do not explicitly model consumption choice in this framework, it is easy to see that whenever the pass-through of expected household income to consumption is imperfect – a fact widely established empirically – the difference in household spending between the two groups will be even smaller than the difference in personal economic sentiment.

3 Data and Research Design

In this section, we first provide details of the datasets used in our analyses (Section 3.1). Second, we outline the construction of the sentiment variables that we use throughout the paper, based on household responses in the CPHS survey (Section 3.2). Finally, we motivate our empirical specifications to study how sentiment influences expenditure growth (Section 3.3), and how identity politics can drive economic sentiment of households (Section 3.4).

3.1 Data

Our primary data source is the Consumer Pyramids Household Survey (CPHS) conducted by the Centre for Monitoring Indian Economy Pvt. Ltd. (CMIE). The nationally representative panel survey started in 2014 and has till date surveyed more than 236,000 households, with more households added to subsequent survey waves. We use data on income, expenditure, sentiments and demographic characteristics from household interviews conducted every four months (quadrimesterly) between May 2015 and August 2022. During each interview, respondents report their current sentiments and provide details on their consumption and income for the preceding four months. Therefore, we have monthly data on income and expenditure and quadrimesterly data on economic sentiments. We attribute the average income and consumption data for the four months included in the recall to the quadrimester of the interview. In other words, even if income/consumption from a particular month would typically fall into a different quadrimester, we assign it based on the interview's quadrimester. This method ensures that the sentiments expressed are consistently aligned with the associated consumption and income data. Barring the exception of the Australian household panel data used by Gillitzer and Prasad (2018), this dataset is the only one that measures spending, income and economic sentiments of the same panel of households over time.[6] We control for state-by-year fixed effects in all our results to mitigate the obvious concern of the COVID-19 pandemic impacting survey data collection and household income and expenditure patterns in the 2020-2021 period.

While the CPHS data are sufficient to analyze the impact of sentiments on household expenditure, we need to merge the CPHS data with electoral information to conduct our analysis on the role of political outcomes in economic sentiment formation. Specifically, we merge the CPHS data with data from the Election Commission of India about the constituency-level outcomes and candidate-level information of state assembly elections between 2015 and 2022 compiled by the Trivedi Centre for Political Data (TCPD) at Ashoka University. The electoral data comprises candidate-level information within each state assembly constituency, including gender, number of votes, party affiliation, and other candidate characteristics. These data allow us to identify the winners and runners-up, as well as the victory margins. We define an election to be close if the margin of victory in terms of the vote share is less than 5% between the winner and the runners-up candidate. We show the robustness of our results by varying this victory-margin threshold to define a close election. Since electoral constituencies are smaller geographical units than districts, we aggregate the electoral data to the district level following Bhalotra and Clots-Figueras (2014) and Aneja and Ritadhi (2022).[7] This aggregation to the district level allows us to merge the electoral data with the income, expenditure,

[6] In contrast, for example, in the US datasets, household sentiments from the Michigan Survey of Consumers need to be matched with the household expenditure and income information from the Panel Study of Income Dynamics or the Consumption Expenditure Survey for different socio-economic groups, since the set of interviewed households in the different datasets is different.

[7] The mapping of constituencies to districts is sourced from TCPD, which assigns each assembly constituency to a corresponding district based on the 2001 Census administrative boundaries. See the TCPD Lok Dhaba Codebook for further details (https://lokdhaba.ashoka.edu.in/static/media/2022Feb12LokDhabaCodebook.21040cf7.pdf).

and sentiments data in the CPHS.

3.2 Consumer Sentiment: Survey Questions and Variable Construction

The CPHS has a consumer sentiment module in its questionnaire with the following five questions. We report the possible responses in parentheses after the questions below:

1. Compared to a year ago, how is your family faring financially these days? [Better/Same/Worse]
2. How do you think that a year from now, your family will be faring financially? [Better/Same/Worse]
3. How would you describe the financial and business conditions in our country in the next 12 months? [Good/Uncertain/Bad]
4. What do you think would be the financial and business conditions in our country in the next 5 years? [Continuously good times/Uncertain with ups and downs/Continuously bad times]
5. Do you think that this is generally a good or bad time to buy things like furniture, refrigerator, television, two-wheeler, car? [Good/Uncertain/Bad]

This set of five questions is identical to that in the Thomson Reuters/University of Michigan Survey of Consumers in the US as well as the Westpac-Melbourne Institute Survey of Consumer Sentiment in Australia, thereby aiding cross-country comparability. However, unlike the repeated cross-sectional data of the other consumer sentiment surveys, a unique feature of the CPHS is its panel structure, which allows us to effectively control for household fixed effects in sentiment, that is, control for the general optimism or pessimism of particular households.[8] While the Australian survey asks respondents for who they would vote for in a federal election, this information is missing in the CPHS. Therefore, while Gillitzer and Prasad (2018) can rely on households' voting intention in the Australian dataset to inform the relation between political outcomes and economic sentiment, we need to rely on a particular group identity, namely religion, which is highly correlated with voting patterns in India, to establish a causal relationship between political outcomes and economic sentiment. We argue that relying on voting patterns across identities assigned at birth rather than voting intentions that are potentially influenced by personal and national economic conditions is helpful in claiming causality.

We standardise the categorical responses to the five sentiment questions, that is, create a mean-zero unit-variance variable based on the survey responses to each of the five sentiment questions. For tractability of exposition, we construct a Country Sentiment Index based on the two standardised variables for the national sentiment questions (questions 3 and 4 above), and an Individual Sentiment

[8] In the CPHS data, a household is defined by the existence of a physical structure in which a group of people live and there exist physical structures and facilities (such as a kitchen, a verandah or an electricity connection) that are shared by this group of people. Households that do not have such shared physical structures as a kitchen, for example, 'nomadic households', are not included in the CPHS. The CPHS also does not follow households if all members of the household migrate.

Index based on the three standardised variables for the individual sentiment questions (questions 1, 2 and 5 above). In constructing these indices, we follow the methodology in Anderson (2008), where the constituent standardised variables are weighted by the inverse of their covariance matrix. Since the three individual sentiment questions capture different types of household sentiment, namely, perception of the present financial condition relative to the past (backward-looking sentiment), expectations about the future financial condition relative to the present (forward-looking sentiment), and the current readiness to buy durables, we show our main results for each of the three constituent variables separately. The Country Sentiment Index does not suffer from this issue because both of its constituent questions are forward-looking (one-year and five-year ahead expectations). We believe distinguishing between the roles played by individual and national sentiments in influencing household expenditure is an important contribution of this work.[9]

3.3 The Relationship between Economic Sentiment and Consumption

The main focus of this paper is to study whether and how identity-based electoral politics influence households' economic sentiment and, through such sentiment, their final expenditure decisions. Before we establish a causal link between identity politics and household sentiment and expenditures, it is important to determine whether survey-elicited sentiment has any explanatory power for changes in spending after controlling for shifts in income and aggregate economic conditions. To that end, we run household-level panel regressions of the following form:

$$\Delta \ln C_{hsyt} = \beta S_{hsyt-1} + \delta_c \Delta \ln Y_{hsyt} + \delta_f \Delta \ln Y_{hsyt+1} + \theta_{sy} + \gamma_h + \epsilon_{hsyt} \tag{3.1}$$

Here, h indexes the household, s denotes the state of residence of the household, y denotes the calendar year, and t denotes the quadrimester when the household is interviewed. The time difference Δ is calculated between two consecutive quadrimesters $t-1$ and t, whenever data are available for a household in the two consecutive periods.[10] The variables C and Y denote consumption expenditure and total household income, respectively. S denotes a vector of household sentiment variables, namely, the standardized variables for forward-looking and backward-looking individual sentiments, and the Country Sentiment Index.

The parameter estimates from the empirical specification in equation (3.1) should not be treated as causal because of the obvious endogeneity of economic sentiment with both income and consumption changes. Still, one can motivate this reduced-form regression using a linearized Euler equation arising from optimal consumption choices of expected-utility-maximizing households subject to a

[9] There is a large literature studying household expectations about specific variables like inflation, unemployment or expected future household income. However, given the nature of the CPHS sentiment questions, we desist from interpreting our sentiment indices as capturing expectations about any particular variable, like inflation, unemployment, or household income.

[10] If a household for any reason is not surveyed in that quadrimester, that household would have missing values for both income, consumption, and sentiments. The CPHS weights explicitly factors in these missing data.

budget constraint. We outline this motivation in Appendix B.

The main objective of regression (3.1) is to test whether the sentiment variables have any explanatory power for expenditure growth over and above the role of income growth. The joint statistical significance of the β vector will indicate the relevance of extra information contained in the survey questions on sentiments that are not contained in realized income changes.

The coefficient δ_c captures the degree of pass-through of income fluctuations to contemporaneous expenditure changes, and can be interpreted as an inverse measure of the consumption insurance against current income changes. Similarly, δ_f captures the marginal effect of future income growth on current expenditure growth. We include the one-period-ahead income growth as an additional regressor to check if the sentiment variables capture private information of the households about their future income growth. As an extreme example, if the sentiments are only reflecting private information about future income changes, then β should be zero when $\Delta \ln Y_{hsyt+1}$ is controlled for.

In addition to the sentiment and income growth variables as regressors, we include state×year fixed effects θ_{sy} as controls to account for state-level aggregate economic conditions in each calendar year, including, for instance, state-specific inflation. All our results are virtually the same if we instead include district×year fixed effects (not shown for brevity). We also include household fixed effects γ_h to control for time-invariant household characteristics like general optimism or pessimism of individual households, so that the effect of the sentiment variables can be interpreted as those arising from deviations from the household norm.[11] This is in contrast to earlier work, such as those by Carroll, Fuhrer and Wilcox (1994) and Ludvigson (1996), where only time-series analyses could be performed to estimate the effect of a national average sentiment index on aggregate private consumption in the economy. Such analyses could neither allow for cross-sectional heterogeneity nor control for biases arising from interviewing different sets of households every period.

3.4 The Role of Identity Politics in Forming Economic Sentiments

After establishing an important role of economic sentiment in shaping household expenditure, we subsequently investigate a causal channel through which such sentiment may be influenced. While there can be many potential sources of subjective expectations formation, one particularly important channel is politics. The electoral performance of political parties to which individuals are affiliated has been shown to have considerable influence in driving economic sentiments in countries like the US (see Mian, Sufi and Khoshkhou (2015, 2023) and Kamdar and Ray (2022)) and Australia (see Gillitzer and Prasad (2018)). Relatedly, we examine whether the electoral victory of a nationalist party with majoritarian religious overtones — the BJP — affects economic sentiment among Muslims, India's largest religious minority. While the literature typically uses information on the political

[11] CPHS assigns sampling weights to household-month level observations to ensure that consumption and income measures are representative of the Indian population. When conducting regressions at the household-quadrimester level, we average these weights across months within the quadrimester and use the resulting value as probability weights in our regressions. For regressions at the household-month level, we apply the original weights as provided.

affiliation of households and correlates individual sentiments with the electoral performance of political parties, we do not have information on political affiliation in our dataset. Therefore, we need to rely on religious identity, which is strongly associated with voting patterns in India. It is worth noting that relying on religious identity rather than political affiliation is arguably better for the causal interpretation of the effect of political outcomes on economic sentiments. This is because it is easy to think of a situation of endogenous partisanship where individuals switch their political loyalties depending on their economic expectations or sentiments (see Erikson, MacKuen and Stimson (1998)). On the other hand, religious conversions in response to political outcomes are almost non-existent. Below, we discuss the background of identity politics in India and how we use the political alignment of different religious groups to identify the causal effect of politics on economic sentiments.

3.4.1 Background

Voting based on religious and caste identities is pervasive in Indian politics. Despite India's Election Commission explicitly prohibiting campaign speeches that invoke caste or religious affiliations that jeopardize the secular fabric of the country, politicians frequently employ such rhetoric to gain electoral advantage.[12] Going beyond mere campaign slogans, research also finds ingroup favouritism in public service delivery, where politicians tend to prioritize their own caste and religious communities (see Munshi and Rosenzweig (2015), Jensenius (2015) and Dunning and Nilekani (2013)).

The rise of the Hindu nationalist BJP in India's national politics since 2014 has been accompanied by a significant increase in hate speech and vigilante attacks targeting Muslims (see Jaffrelot (2021)). While direct evidence on the impact of the BJP's electoral performance on religious and caste group outcomes is limited, the BJP government has enacted policies like the Citizenship Amendment Act (CAA), which has faced widespread criticism for discriminating against Muslims.[13] Additionally, there is anecdotal evidence of far-right Hindu nationalist groups, such as Bajrang Dal, undermining Muslim livelihoods through attacks on their businesses for using Hindu names for their shops or selling products in Hindu-majority areas.[14] Muslim representation within the BJP's political ranks is strikingly low — marking a first in India's history, the ruling BJP party at the federal level has no Muslim Member of Parliament (MP) in 2024.[15] Indeed, research indicates that victories by the Indian National Congress (INC) — the other major pan-India national party, in state assembly elections, helped reduce Hindu-Muslim violence between 1962 and 2000 (see Nellis, Weaver and Rosenzweig (2016)). Consequently, the Muslim electorate in India tends to vote overwhelmingly against the BJP, further entrenching the party's reliance on religious voting patterns.

Given this context, particularly the strong consolidation of Muslim votes against the BJP across various levels of elections in India, which has intensified over the past decade, we hypothesize that

[12] "EC comes down heavily on BJP, Congress for religious and casteist Lok Sabha election campaigns" (Economic Times, May 2024)

[13] "India enacts citizenship law criticised as 'discriminatory' to Muslims" (The Guardian, 2019).

[14] "'Shown their place': Muslim livelihoods under attack in India" (Aljazeera, September, 2021).

[15] "Eighteenth Lok Sabha has lowest share of Muslim MPs in six decades" (The Hindu, June 2024).

BJP electoral victories are likely to result in negative sentiment among Muslims regarding their economic future and their broader outlook on the country's future. However, changing sentiments in response to political outcomes may not necessarily translate into changes in real consumption behavior. We, therefore, also test whether the BJP's ascent to power in local elections causes income and expenditure changes among the Hindus and Muslims.

3.4.2 Empirical Framework

We analyze the impact of the electoral performance of the BJP on household-level sentiments for different religious groups using the following regression specification:

$$S_{hsdyt} = \alpha_1 BJPSh_{sdyt} \times Hindu_h + \alpha_2 BJPSh_{sdyt} \times Muslim_h + \theta_{sy} + \gamma_h + \psi_{hsdyt} \tag{3.2}$$

Here, S_{hsdyt} denotes one of two types of sentiment (country-level or individual level) for household h living in state s, district d, in calendar year y and quadrimester t. $BJPSh_{sdt}$ is the share of assembly constituencies won by the BJP in district d of state s in the most recently concluded state-assembly election. We interact it with the religious identity of the household (Hindu or Muslim) to estimate the effect of the BJP's seat share on the sentiments of Hindu and Muslim households separately. We also include a household fixed effect γ_h in these regressions to control for household-specific time-invariant factors that affect sentiments. All other variables and indices are defined as before.

Estimating the specification above through an OLS regression will likely yield biased estimates due to omitted variables. There may be omitted variables that determine both the seat share of the BJP in a district and consumer sentiments of households in the district. The direction of this bias is unclear a priori. On the one hand, if households in richer and more urban neighbourhoods have more positive sentiments and are also more likely to vote for the BJP, the estimates could be upward biased. Alternatively, given the BJP's (recent) rising popularity among Hindu low-caste voters, there could be a downward bias if economic sentiments are more negative among these voters due to lower income.

To deal with this endogeneity problem, we use an instrumental variable (IV) for the seat share of BJP in each district, which is similar in spirit to the IVs used in Clots-Figueras (2011), Bhalotra and Clots-Figueras (2014) and Aneja and Ritadhi (2022), among others. We utilize district-level variation in the share of state assembly constituency seats won by the BJP in close elections. The intuition is simple – when the margin of victory is arbitrarily small, the outcome may be influenced by exogenous factors such as turnout, weather conditions, etc. If politicians have imperfect control over these factors, the outcome of such close elections can be considered as good as random.

The instrument we use for the share of seats won by the BJP in a district is the share of close elections won by the BJP. The mathematical formula for the instrument is the following:

$$BJPcloseShWin_{sdyt} = \frac{BJPcloseWin_{sdyt}}{TotalBJPcloseElections_{sdyt}} \tag{3.3}$$

The numerator in equation (3.3) is the total number of close elections (with a victory margin of less than 5%) won by the BJP in district d during the most recently concluded state-assembly election, measured at calendar year y and quadrimester t. The denominator is the total number of close elections that involved the BJP. If both candidates have the same chance of winning a close election, the instrument would take a value of 0.5 by construction. Using the instrument, we estimate a two-stage least squares (2SLS) design. The first stage is:

$$BJPSh_{sdyt} = \phi BJPcloseShWin_{sdyt} + \theta_{sy} + \mu_{sdyt} \tag{3.4}$$

and the second stage is:

$$S_{hsdyt} = \alpha_1 \widehat{BJPSh_{sdyt}} \times Hindu_h + \alpha_2 \widehat{BJPSh_{sdyt}} \times Muslim_h + \theta_{sy} + \gamma_h + \psi_{hsdyt}{}^{16} \tag{3.5}$$

In their practical guide for implementing regression discontinuity designs, Imbens and Lemieux (2008) recommend validity checks for the soundness of identification strategies like the one above. We discuss such validity tests in Section 4.2 below.

4 Summary Statistics and Validity of Instrument

4.1 Summary Statistics

To understand the dynamics of the household responses to each of the five sentiment questions in the CPHS, in Figure 4.1, we plot the net fraction of households recording positive responses to these questions in the survey. We find that the responses to all five questions have very similar dynamics, implying that optimism or pessimism in one response is highly correlated with the sentiment recorded for the other questions.

A notable feature of the sentiment dynamics in Figure 4.1 is the sharp drop in optimism at the onset of the COVID-19 lockdown. While it is intuitive that a pandemic-induced lockdown damaging economic activity should have a huge negative impact on the economic sentiment of households, what is more interesting is that the decline in sentiment is more pronounced in districts with a higher number of confirmed COVID-19 cases. In Appendix Figure C.1, we show this negative correlation between the logarithm of the number of COVID-19 cases and household-level sentiments across Indian districts. Although the primary focus of our paper is the importance of political events in shaping economic sentiments, the finding that COVID-19 cases correlate with sentiments both in the time-series and cross-sectional dimensions serves as a validation of the survey-based sentiments data and highlights an important determinant of economic sentiments during our study period.

[16] In practice, we estimate this specification in one step using STATA's *ivreghdfe* command with $BJPcloseShwin_{sdyt} \times Hindu_h$ and $BJPcloseShwin_{sdyt} \times Muslim_h$ as instruments for $BJPSh_{sdyt} \times Hindu_h$ and $BJPSh_{sdyt} \times Muslim_h$, respectively.

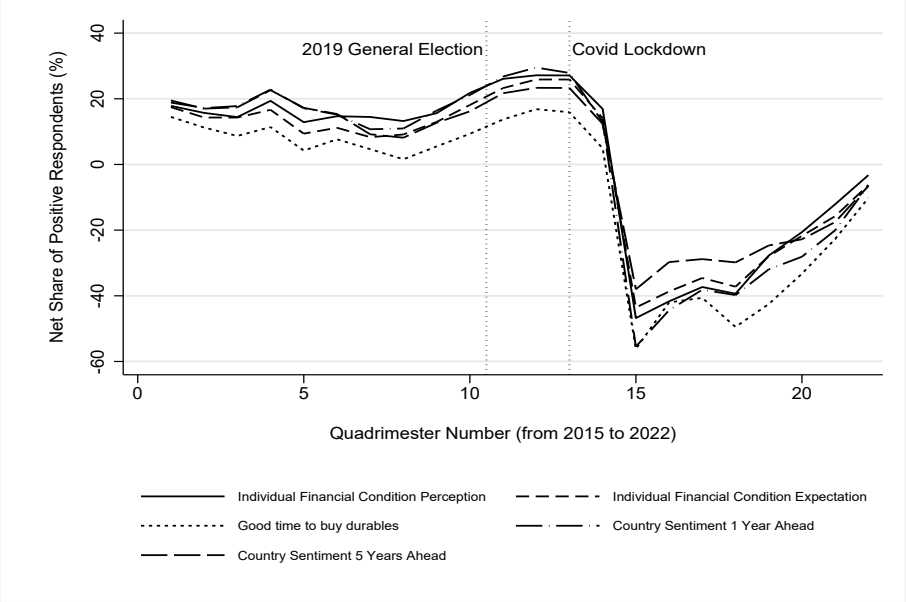


Figure 4.1: Difference between Shares of Positive and Negative Sentiment Response over Time

Note: The graph plots the difference between the fractions of households reporting a positive response and those reporting a negative response to each of the 5 sentiment questions in the CPHS survey for 30 quarters between the third quarter of 2015 and the fourth quarter of 2022. The timings of the 2019 general election and the onset of the COVID-19 lockdown are shown by dotted vertical lines.

One concern with survey-based sentiment measures is that household responses to sentiment questions are very persistent over time, that is, there are optimistic and pessimistic households, and these two groups do not change their responses irrespective of the situation. This potentially jeopardizes the identification of our regression specification (3.1), since it relies on the residual variation in sentiments that is left after controlling for household fixed effects and state×year fixed effects. In Appendix Figure C.3, we show that only between 16% and 22% of the total variation in the sentiment variables is soaked up by the household and state-by-year fixed effects. This shows that the survey responses to the sentiment questions have enough variation within each household and even across quadrimesters within a year, lending credence to our identification and empirical results.

Since our main focus is on the differential changes in the economic sentiments for Hindu and Muslim households after a close-election victory by the BJP, we study how these two religious groups differ in terms of their economic status and their average sentiments throughout the period under study. To that end, Table 4.1 reports the mean, median and standard deviation of total monthly income and total monthly expenditure for Hindu and Muslim households in the CPHS. The numbers show the widely acknowledged pattern in India that Hindus are better off than Muslims, both in terms of income and expenditure. Moreover, there is more inequality in income than in expenditure, both within and across the two religious groups, which highlights the role of cross-sectional consumption insurance through both public taxes and transfers and private means like savings and borrowing.

Table 4.1: Summary Statistics of Household-Level Income, Expenditure & Sentiment Indices by Religion

	Hindu + Muslim (1)	**Hindu** (2)	**Muslim** (3)
Total Monthly Income (in current INR)			
Mean	21,687.53	22,096.05	18,119.21
Median	16,531.25	16,687.30	15,447.79
Standard Deviation	473,391.60	499,741.10	10,627.32
Total Monthly Expenditure (in current INR)			
Mean	11,737.90	11,754.05	11,596.85
Median	10,630.64	10,643.99	10,503.72
Standard Deviation	5,430.96	5,502.21	4,761.28
Individual Sentiment Index			
Mean	0.01	0.01	-0.02
Standard Deviation	0.43	0.44	0.40
Country Sentiment Index			
Mean	0.02	0.01	0.10
Standard Deviation	0.42	0.42	0.40
No. of unique households	178,663	160,310	18,353

Note: The standard deviations of the sentiment indices are different from one because these are variance-weighted indices of standardized variables. The means differ slightly from zero because, after constructing the indices, we exclude households that are neither Hindu nor Muslim, as well as households associated with multiple religious identities over the sample period — an indicator that new residents might have moved into the household. All statistics correspond to data from the CPHS survey between May 2015 and August 2022.

Table 4.1 also reports the mean and standard deviation of the Individual and Country Sentiment Indices for the two religious groups. We find that large differences in income and expenditure across the two groups do not translate into substantial differences in the average sentiment indices. Not only are the time-averaged values of the sentiment Indices similar across Hindus and Muslims, Appendix Figure C.2 shows that variation over time in the two sentiment indices is also similar across the two groups.

Consistency of household sentiment with actual income and expenditure changes. The backward looking individual sentiment question allows us to check whether household perceptions about past events (relative to present) align with reality. One can view this as a sanity check for the sentiment responses in the survey. In particular, in Appendix Table C.1, we examine whether household income growth over the past quadrimester (that is, between quadrimester $t-1$ and t) or the past year (that is, between quadrimesters $t-3$ and t) is positively correlated with the household's perception of changes

in its financial situation during the same period. We find a significant positive correlation between the perceived change in financial condition and income growth, both over the past quadrimester (Panel A) and over the past year (Panel B). This is reassuring for the validity of the survey-based sentiment measures.

The forward-looking individual sentiment records households' beliefs about their financial condition in the future compared to their current condition. We use this to verify whether households' subjective expectations about their future financial conditions are aligned with the actual changes in future income. In Appendix Table C.2, we find that households' subjective expectations about their future financial conditions are not aligned, in fact negatively correlated, with the actual change in future income, both over a quadrimester (Panel A) and a year (Panel B). This implies that while households correctly perceive realized changes in their income, they make systematic errors in forming subjective expectations about their future income. One way to rationalize this finding is that households feel optimistic about their future financial prospects when they are better off in the present compared to their past. In other words, households ignore the typical mean reversion in income shocks, wherein positive income shocks are more likely to be followed by negative ones. In fact, in our data, the pooled correlation between the income growth rates in two consecutive periods, $Corr\left(\Delta y_{it}, \Delta y_{it+1}\right)$ is -0.41, which highlights the mean reversion in actual income shocks and provides an explanation for the systematic error in subjective expectations about households' future incomes based on past income changes.[17]

Finally, the third survey question on individual sentiment speaks directly to a household's readiness to buy durable items. Therefore, it is natural to ask whether the stated intention of the household matches actual spending on durables. In Appendix Table C.3, we show that all households, irrespective of their religious identity, increase their spending on durable items in the period in which they state that it is a good time to buy such items. However, we also find that the correlation between intended and realized durable spending is weaker for Muslims than for Hindus.

4.2 Instrument Validity and Relevance

As discussed in Section 3.4, our identification of the role of political outcomes in driving economic sentiments hinges on the election outcome being quasi-random so that the impact of a close election outcome on the economic sentiments of Hindus and Muslims can be deemed causal. The validity of the close-election instrumental variable proposed here depends on (a) the density of the BJP win margin being continuous at the zero threshold, where the electoral outcome changes discontinuously from a BJP loss to a BJP victory, and (b) candidate and constituency-level covariates like age, education, gender of candidates and the number of contenders in a constituency, etc. being smooth around the BJP victory threshold.

[17] Our findings are similar to experimental evidence in Armona, Fuster and Zafar (2019), who find that home price expectations are revised in a way consistent with short-term momentum in home price growth but respondents do not expect the empirically-occurring mean reversion in home price growth.

Figure 4.2 shows the manipulation testing plot from a McCrary (2008) test of discontinuity of the running variable - BJP win margin, at the zero threshold. It plots the density of elections by the running variable, where a positive value of the running variable indicates a BJP victory, a negative value indicates a BJP loss, and values close to zero on either side of the zero threshold indicate a close election outcome. The absence of a statistically discernible discontinuity in the density of elections around the zero-threshold of win margin suggests no sorting of candidates into winner and loser status. In other words, we find no evidence to reject that a BJP victory in a close election is a random event. This lends credence to using the share of constituency seats won by the BJP in all close elections as an instrumental variable.

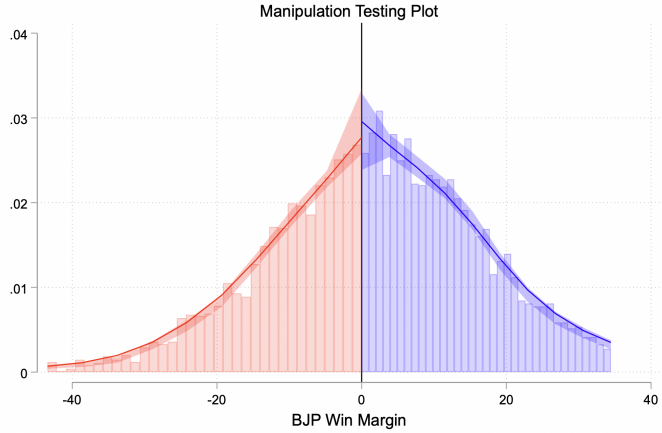


Figure 4.2: Instrument Validity: McCrary Test for Discontinuity of BJP Victory Margin around Zero

Note: Each bar indicates the density of the BJP win margin for one of the bins corresponding to the victory margin in individual constituencies in state-level elections between 2015 and 2022. The fitted curves, along with their shaded confidence bands, test for discontinuity in the BJP victory margin at the winning threshold of zero, as proposed in McCrary (2008).

In addition to the absence of candidate sorting around the discontinuity of victory status, Meyersson (2014) suggests that constituency and candidate-specific observable characteristics should also be smooth at the victory threshold. We carry out such smoothness checks for six observables, namely, (a) voter turnout in the constituency (valid votes as a share of the number of registered electors), (b) whether the winning candidate is a graduate, (c) the sex of the winning candidate, (d) the term number of the winning candidate, (e) the age of the winner, and (f) the number of candidates contesting in the constituency. Figure 4.3 shows no visual discontinuity at the threshold of BJP win or loss for any of the six observable characteristics of candidates and constituencies. Taken together, the evidence in Figures 4.2 and 4.3 suggests the quasi-randomness of a BJP close win in tightly contested constituencies, supporting the validity of our instrumental variable.

In Figure 4.4, we show the relevance of our instrument by illustrating how BJP's win margins at the assembly constituency level influence its overall seat share at the district level. The figure highlights the strong relevance of our instrument, showing that an additional constituency-level win corresponds to an approximately 20 percentage point increase in the district-level seat share. This is

intuitive, given that the average number of constituencies per district in our sample period is 5.13.

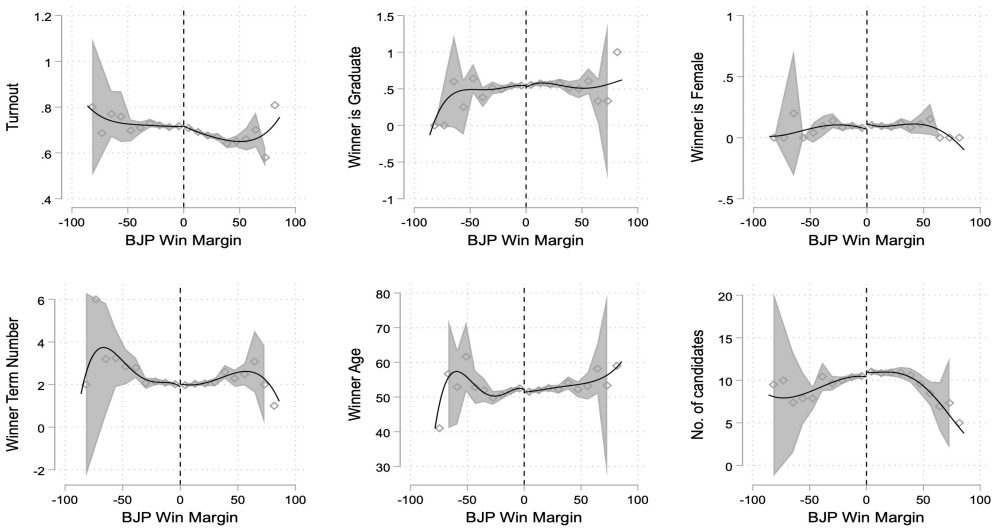


Figure 4.3: Instrument Validity: Constituency-level Covariate Balance across BJP Victory Margin

Note: The first five figures present covariate balance checks across winning candidate characteristics, while the last figure corresponding to the number of candidates is at the level of constituencies. The solid lines show the best-fit curve from local polynomial regressions, while the shaded regions represent the 95% confidence bands.

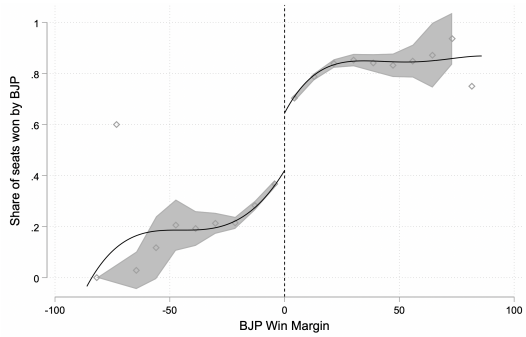


Figure 4.4: Instrument Relevance: The Impact of BJP Win Margin on Share of Seats Won in the District

Note: The outcome variable is the share of seats won at the district-level by BJP. The running variable is BJP win margin at the constituency-level. The solid lines show the best-fit curve from local polynomial regressions, while the shaded regions represent the 95% confidence bands.

Finally, we notice that constructing the instrument restricts the sample to districts with at least one election in which the BJP was in a close contest. Since the occurrence of close elections involving the BJP is not random, we thus implicitly restrict our sample to areas where the BJP has a strong presence. Appendix Figure C.4 shows a map of India, highlighting all districts in our sample where at least one state assembly constituency had the BJP involved in a close election during the period of study. As is evident from the map, such close-election districts are widely spread across India except some southern states, where the BJP is not a formidable political force.

5 Results

In this section, we first examine whether and how household sentiment – about both personal finances and the national economy – shapes household expenditure (Section 5.1). Then, we show how close victories by the BJP in state assembly elections differentially impact the economic sentiment of Hindu and Muslim households and whether such heterogeneous changes in the sentiments translate into differences in household expenditures between the two groups (Section 5.2).

5.1 Effect of Sentiment on Household Expenditure

Each column of Table 5.1 presents results based on some variation of the regression specification (3.1), showing how sentiment about household finances and the national economy influences changes in household expenditure after controlling for the effects of time-invariant household-level characteristics, aggregate economic conditions and household income growth.

In column (1) of Table 5.1, we include as regressors the contemporaneous household income growth and the standardised variables capturing the forward and backward looking sentiments about households' personal finance at the start of the period. We find that these two individual sentiment variables are jointly statistically significant in predicting expenditure growth (as shown by the low p-value of the F-test for joint significance).

One possible interpretation of the forward-looking individual sentiment can be the households' private information about their future income (see Barsky and Sims (2012)). Since we observe the future income of the household in our data, we can test whether controlling for the realized future income growth makes the forward-looking individual sentiment variable redundant in predicting expenditure growth. To that end, column (2) of Table 5.1 includes the one-period-ahead income growth as an additional control. However, we find that the marginal effect of the forward-looking sentiment does not materially change, and the joint significance of the individual sentiment variables also remains unchanged. This shows that the forward-looking individual sentiment variable is not merely capturing households' advance information about their future income growth.

In column (3) of Table 5.1, we not only include the forward and backward looking individual sentiments and the current and future income growth as regressors, but we additionally include the Country Sentiment Index. In this full specification, we find that after accounting for current and future income growth, a one-standard-deviation increase in forward (backward) is associated with a 0.89% (0.74%) reduction in household spending between the current quadrimester and the next, while the Country Sentiment Index has a negligible impact on household spending. Thus, we find no additional predictive power of the Country Sentiment Index for household expenditure growth, once individual sentiment and income growth are controlled for. Nevertheless, the three sentiment variables continue to be jointly significant in predicting expenditure growth.

Table 5.1: Effect of Economic Sentiment on Changes in Total Expenditure

	Δ Log Total Expenditure between $t-1$ and t		
Explanatory Variables	(1)	(2)	(3)
Forward-looking individual sentiment at $t-1$	-0.0078***	-0.0089***	-0.0089***
	(0.0006)	(0.0007)	(0.0007)
Backward-looking individual sentiment at $t-1$	-0.0066***	-0.0074***	-0.0074***
	(0.0006)	(0.0007)	(0.0007)
Country Sentiment Index at $t-1$			0.0002
			(0.0006)
Δ Log Income between $t-1$ and t	0.1223***	0.1288***	0.1288***
	(0.0016)	(0.0019)	(0.0019)
Δ Log Income between t and $t+1$		0.0019**	0.0020**
		(0.0008)	(0.0008)
F-test for Joint Significance of Sentiment Variables	$p < 0.01$	$p < 0.01$	$p < 0.01$
No. of Observations	2,134,924	1,723,573	1,723,573
Mean of Dependent Variable	0.03	0.03	0.03

Note: The unit of time is a quadrimester. Robust standard errors clustered at the household level are reported in parentheses. All regressions include state-by-year fixed effects and household fixed effects as controls. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

The estimated negative coefficients of the forward and backward looking individual sentiment variables in Table 5.1 indicate that households reduce their spending between periods $t-1$ and t when they perceive their current financial condition at $t-1$ to be better than the past situation at $t-2$, as well as when they expect their future financial condition at t to be better than the present at $t-1$. These results can initially appear counterintuitive but are consistent with the findings in Table 5.2, which shows that both the forward and backward looking sentiment variables are associated with higher levels of current expenditure.[18] In other words, households with a more positive outlook, whether about their future relative to the present or about their present relative to the past, appear to bring forward their spending to the current period, leaving less room for growth in the subsequent period.

[18]Our finding of current economic sentiment being positively correlated with current expenditure is consistent with results in Stoltenberg and Uhlendorff (2024), who use Italian household survey data and find that current expenditure is not only driven by current earnings but is also positively correlated with expectations of future earnings. Relatedly, Jappelli and Pistaferri (2000), using older waves of the same Italian survey, find that household income growth predicted through subjective expectations is uncorrelated with consumption growth but the expected variance of income predicts a higher spending growth, suggesting precautionary saving motives. Since the CPHS-based sentiment questions do not provide the nominal rupee-value of households' expected income, we cannot test for precautionary saving motive explicitly.

Table 5.2: Effects of Forward and Backward Looking Individual Sentiments on Current Expenditure

	Log Total Expenditure at time t		
	(1)	(2)	(3)
Forward-looking individual sentiment at t	0.0251***		0.0150***
	(0.0005)		(0.0006)
Backward-looking individual sentiment at t		0.0260***	0.0164***
		(0.0005)	(0.0006)
Δ Log Income between $t-1$ and t	0.0397***	0.0396***	0.0394***
	(0.0008)	(0.0008)	(0.0008)
Δ Log Income between t and $t+1$	-0.0472***	-0.0470***	-0.0468***
	(0.0008)	(0.0008)	(0.0008)
No. of Observations	1,723,573	1,723,573	1,723,573
Mean of Dependent Variable	9.31	9.31	9.31

Note: Robust standard errors clustered at the household level are reported in parentheses. All regressions include state-by-year fixed effects and household fixed effects. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Heterogeneity across Hindu and Muslim households by expenditure category. Beyond establishing the significant role of individual economic sentiment in predicting total household expenditure growth, we study the heterogeneity of this relationship between individual sentiment and different spending categories across Hindu and Muslim households. In Table 5.3, we show that the negative impact of both the forward and backward looking individual sentiment variables on expenditure growth over the next quadrimester is significantly larger in magnitude for Muslim households than their Hindu counterparts.[19] The larger pass-through of individual sentiment to household expenditure growth for Muslims is not only true for total spending but also holds separately for food, health, education and luxury spending.[20] This suggests a greater sensitivity of Muslim households'

[19] Although the survey questions on individual sentiment ask about the current perception compared to *last year* and the expectations of the financial condition *next year* relative to the present, household may recall their financial situation *since their most immediate interview in the previous quadrimester* or form expectations about the financial situation *in the immediate future of the next quadrimester*. Nevertheless, as robustness, in Appendix Table D.1, we show the same results using a year as the time-frame instead of a quadrimester.

[20] Luxury expenditure includes spending on clothing, footwear, jewellery, wallets, gems, automobile EMIs, electronics, entertainment and recreation, and social or religious activities. This basket of luxury items has an income elasticity of greater than one for both Hindus and Muslims (see Mitra and Mukherji (2025)). The four spending categories considered here, namely, food, health, education and luxury items, taken together, constitute about 60% of total household monthly

spending to sentiment about their financial condition. This is unsurprising given that Muslims are, on average, poorer than Hindus in India, and economic theory dictates that consumption sensitivity should be larger for less well-off households with fewer ways of smoothing financial shocks. Moreover, consistent with economic theory, in Table 5.3, we also find that the pass-through of the sentiment variables as well as of the contemporaneous income growth to expenditure growth is higher for more discretionary spending categories like luxury expenses than necessities like food.

Table 5.3: Effects of Forward and Backward Looking Individual Sentiments on Growth in Different Expenditure Categories over a Quadrimester for Hindu and Muslim Households

	Δ Log Expenditure between $t-1$ and t in Different Categories				
	Total	**Food**	**Health**	**Education**	**Luxury**
	(1)	(2)	(3)	(4)	(5)
A. Forward Looking Individual Sentiment at $t-1$					
Forward-looking individual sentiment at $t-1$ x Hindu	-0.0112***	-0.0056***	-0.0082***	-0.0242***	-0.0849***
	(0.0005)	(0.0005)	(0.0021)	(0.0037)	(0.0025)
Forward-looking individual sentiment at $t-1$ x Muslim	-0.0185***	-0.0119***	-0.0351***	-0.0260**	-0.1244***
	(0.0014)	(0.0013)	(0.0062)	(0.0113)	(0.0087)
Δ Log Income between $t-1$ and t	0.1224***	0.0859***	0.1565***	0.1793***	0.3331***
	(0.0016)	(0.0013)	(0.0032)	(0.0051)	(0.0047)
Equality of Hindu and Muslim Coefficients	$p<0.01$	$p<0.01$	$p<0.01$	$p=0.88$	$p<0.01$
No. of Observations	2,134,924	2,134,924	2,134,924	2,134,924	2,134,924
Mean of Dependant Variable	0.03	0.02	0.04	0.04	0.05
B. Backward Looking Individual Sentiment at $t-1$					
Backward-looking individual sentiment at $t-1$ x Hindu	-0.0110***	-0.0070***	-0.0078***	-0.0144***	-0.0940***
	(0.0005)	(0.0005)	(0.0021)	(0.0038)	(0.0025)
Backward-looking individual sentiment at $t-1$ x Muslim	-0.0177***	-0.0134***	-0.0405***	0.0188*	-0.1368***
	(0.0014)	(0.0013)	(0.0060)	(0.0114)	(0.0086)
Δ Log Income between $t-1$ and t	0.1224***	0.0858***	0.1564***	0.1799***	0.3320***
	(0.0016)	(0.0013)	(0.0032)	(0.0051)	(0.0047)
Equality of Hindu and Muslim Coefficients	$p<0.01$	$p<0.01$	$p<0.01$	$p<0.01$	$p<0.01$
No. of Observations	2,134,924	2,134,924	2,134,924	2,134,924	2,134,924
Mean of Dependent Variable	0.03	0.02	0.04	0.04	0.05

Note: Robust standard errors clustered at the household level are reported in parentheses. All regressions include state-by-year fixed effects and household fixed effects. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

expenditure in our sample.

5.2 Effect of Identity Politics on Household Sentiment, Income and Expenditure

5.2.1 Impact of BJP Seat Share on Economic Sentiment

Having established a link between economic sentiment and household consumption, we now examine whether election outcomes influence people's sentiment about their future prospects and their broader outlook for the country. Could election outcomes also affect consumption patterns by altering economic sentiment?

Election results are likely among the most significant events shaping people's future outlook on a country's political and economic landscape. However, there is little causal microevidence on how elections influence individual sentiments and consumption patterns, especially for developing countries.[21] Most of the evidence on how political partisanship shapes perceptions of the economy and influences consumption intentions or actual consumption patterns comes from high-income countries. Gerber and Huber (2009, 2010) combine survey data with county-level taxable sales information from the US, demonstrating that both economic sentiment and post-election consumption are correlated with a county's partisan makeup. More recent studies, also focused on the US, provide mixed evidence on whether sentiment shifts driven by political partisanship influence economic activity and consumption (Benhabib and Spiegel, 2018; Mian, Sufi and Khoshkhou, 2015, 2023). Outside the US, Gillitzer and Prasad (2018) analyze Australian consumer sentiment data where respondents are directly asked about their voting intentions, and show that sentiment changes following the Australian Labor Party's election victory affected consumption patterns based on pre-election partisanship.

Our analysis in this section extends previous studies in two important ways. First, we examine how political attitudes shaped by religious identity influence economic sentiment within a developing-country context, where identity politics plays a crucial role in determining electoral outcomes. Given the BJP's longstanding Hindu nationalist stance, Muslims in India have largely voted against the BJP in both federal and state elections, with such polarization intensifying over the last decade (Heath, 2020). Second, by employing a close-election regression discontinuity (RD) design combined with a long panel dataset and household fixed effects, we provide a more precise causal analysis of these relationships than has previously been possible.

We investigate the causal impact of elections on public sentiment by leveraging plausibly exogenous variation in election outcomes from closely contested seats in Vidhan Sabha (state assembly) elections. Our detailed identification strategy is presented in Section 3.4.2.

Table 5.4 illustrates how an increase in the share of seats won by the BJP influences sentiments of Hindu and Muslim households about both individual and national financial conditions. For each household-quadrimester-level outcome, we assign the BJP's share of seats in the household's district based on the most recent election preceding that quadrimester. We instrument for the share of seats won by the BJP in a district by the ratio of close elections it won over the number of close elections

[21] The bulk of the literature on the impact of elections in India focuses on the effect of political reservations on various socio-economic indicators (see, for example, Chattopadhyay and Duflo, 2004 and Chin and Prakash, 2011).

it was involved in, in that district. Our sample includes all state assembly elections held during the time period for which we have data on sentiments and consumption from the CPHS.

Table 5.4: Effect of BJP Seat Share on Each Component of Economic Sentiments by Religion

Instrument = $\frac{\text{Share of close elections BJP won}}{\text{Share of close elections BJP involved}}$	Individual Sentiment Variables			Country Sentiment Index
	Forward Looking	Backward Looking	Good Time to Buy Durables	
	(1)	(2)	(3)	(4)
Panel A: OLS				
BJP Seat Share × Hindu	0.0145	-0.0595	0.0205	-0.186**
	(0.0711)	(0.0746)	(0.0762)	(0.0873)
BJP Seat Share × Muslim	-0.102	-0.222**	-0.1445	-0.351***
	(0.103)	(0.111)	(0.1194)	(0.124)
Equality of Hindu & Muslim Coefficients	$p = 0.08$	$p = 0.02$	$p = 0.03$	$p = 0.04$
Panel B: IV				
BJP Seat Share × Hindu	0.0349	-0.0120	0.114	-0.0272
	(0.131)	(0.143)	(0.132)	(0.171)
BJP Seat Share × Muslim	-0.202	-0.365*	-0.123	-0.519**
	(0.190)	(0.205)	(0.181)	(0.237)
Equality of Hindu & Muslim Coefficients	$p = 0.06$	$p < 0.01$	$p = 0.05$	$p < 0.01$
Kleibergen-Paap F-Stat (First Stage)	67.2	67.2	67.2	67.2
Number of Observations	1,486,856	1,486,856	1,486,856	1,486,856

Note: Robust standard errors clustered at the district-by-year level are reported in parentheses. All regressions include household fixed effects and state-by-year fixed effects. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively. Close elections are those with a victory margin of 5% or less. Appendix Table D.2 shows the robustness of the results to varying the win-margin threshold to 4% and 6%.

Columns (1)–(3) of Table 5.4 present the effects of increases in BJP seat share on household financial sentiment among Hindus and Muslims. Across all three sentiment components, both the OLS and IV estimates indicate a more negative impact on Muslims than on Hindus (An increase in the BJP's seat share from the 25th percentile (0.20) to the 75th percentile (0.67) causes a divergence in Hindu-Muslim sentiment of 0.11 to 0.18 standard deviations in the IV regressions). Although the individual interaction terms—*BJP Seat Share* × *Hindu* and *BJP Seat Share* × *Muslim*—are not always statistically significant, the difference between them is, indicating that BJP victories have divergent effects on the two religious groups.

The effects are much more pronounced for sentiments about the country's economic and financial future. Column (4) shows that a higher BJP seat share is associated with a significantly larger negative impact on Muslims' outlook compared to Hindus, based on a composite index combining expectations over the next 12 months and the next five years (An increase in the BJP's seat share from the 25th percentile (0.20) to the 75th percentile (0.67) causes a divergence in Hindu-Muslim national

sentiment of 0.24 standard deviations in the IV regression).

Although the OLS estimate also indicates a negative effect for Hindus (for country sentiment), this relationship does not exist in the 2SLS specification. This suggests that the OLS estimate for Hindus is downward biased, whereas for Muslims it is upward biased. It is difficult to determine the exact reason for this, but it is an intriguing pattern. It is plausible that the growing popularity of the BJP among low-caste Hindus (and the resulting higher seat share in these regions), who are generally of lower income and may hold more negative sentiments, leads to a downward bias in the OLS estimate for Hindus. Conversely, the BJP's increased popularity in higher-income regions with Muslim populations may cause an upward bias in the OLS estimate for Muslims relative to the 2SLS estimate.

Overall, the results are consistent with the idea that BJP victories are perceived more negatively by Muslim citizens, prompting a more pessimistic outlook on both national and personal finances compared to Hindus—though the effects are markedly stronger for perceptions of the national economy.

A Placebo Test: Close election wins by the Indian National Congress (INC). One potential concern with the previous analysis is that the differential effects across Hindus and Muslims could arise from divergent preferences for national versus local parties rather than solely reflecting the BJP's Hindu-nationalist stance that drives its higher popularity among Hindus and lower support among Muslims. For instance, regional or state-specific parties may be more responsive to minority populations due to their deeper local knowledge. In contrast, national parties might lack the same state-specific insight and responsiveness. This could be in part due to the fact that decision-making is influenced or controlled by the central leadership of such larger parties, limiting their ability to address local concerns as effectively. Since our research design compares close elections won by the BJP against both regional and national parties, this might explain part of the results in the previous section.

To test for and rule out this alternative explanation, we study (using a similar identification strategy) whether an increase in seat share of the Indian National Congress (INC) (the only other pan-Indian party) in state assembly elections has different effects on Hindu and Muslim households. We do not find this to be the case (see Table 5.5). The impact of an increase in INC seat share does not seem to have differential effects on Hindus and Muslims. If anything, in the OLS specifications, a higher seat share for the INC has a negative impact on Muslim sentiments, but we see a zero effect in the 2SLS specification. In fact, a downward bias in the OLS specification is what one would expect – given that poorer Muslims (with more negative sentiments) are perhaps more likely to vote for the INC.

Taken together, the results from this section and Section 5.2.1 suggest that the BJP's specific political history and stance, rather than a broader distinction between national and regional parties, is likely driving the negative sentiments among Muslims when the party secures a higher share of

assembly seats. Notably, Hindu households' sentiments do *not* appear to improve when the BJP wins more seats compared to other parties, even though the difference with Muslim households is statistically significant. Thus, the BJP's Hindu nationalist position seems to have little effect on the sentiments of the majority Hindus, at least regarding their outlook on personal economic and financial conditions and their broader perceptions of the country's financial future. While we lack systematic evidence comparing the economic performance of BJP-ruled and non-BJP-ruled states (or legislators), existing data suggest that states' aggregate growth rates have remained similar regardless of the party in power.[22] This pattern is consistent our finding that Hindus do not appear to adjust their financial expectations based on the BJP's electoral victories.

Table 5.5: Effect of INC Seat Share on Each Component of Economic Sentiments by Religion

Instrument = $\frac{\text{Share of close elections INC won}}{\text{Share of close elections INC involved}}$	Individual Sentiment Variables			Country Sentiment Index
	Forward Looking	Backward Looking	Good Time to Buy Durables	
	(1)	(2)	(3)	(4)
Panel A: OLS				
INC Seat Share × Hindu	-0.0701	-0.0248	-0.125*	0.00146
	(0.0750)	(0.0748)	(0.0735)	(0.0873)
INC Seat Share × Muslim	-0.226**	-0.226**	-0.285***	-0.0710
	(0.0966)	(0.0971)	(0.0910)	(0.107)
Equality of Hindu & Muslim Coefficients	$p = 0.02$	$p < 0.01$	$p = 0.01$	$p = 0.26$
Panel B: IV				
INC Seat Share × Hindu	-0.188	0.0554	-0.112	0.251
	(0.183)	(0.187)	(0.164)	(0.210)
INC Seat Share × Muslim	-0.281	0.008	-0.395	0.410
	(0.277)	(0.281)	(0.285)	(0.303)
Equality of Hindu & Muslim Coefficients	$p = 0.58$	$p = 0.82$	$p = 0.17$	$p = 0.39$
Kleibergen-Paap F-Stat (First Stage)	108.4	108.4	108.4	108.4
Number of Observations	1,311,188	1,311,188	1,311,188	1,311,188

Note: Robust standard errors clustered at the district-by-year level are reported in parentheses. All regressions include household fixed effects and state-by-year fixed effects. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively. In the instrumental variable, close elections are defined as those with a victory margin of 5% or less.

5.2.2 Impact of BJP Seat Share on Income and Expenditure

What impact do heightened negative sentiments among Muslims—fueled by an increasing BJP seat share—have on their spending behavior? Prior literature suggests that the BJP's electoral gains are often accompanied by surges in Hindu-Muslim violence, potentially triggering supply-side shocks that may also depress the real income of Muslims relative to Hindus (Nellis, Weaver and Rosen-

[22] "Congress versus BJP: Who has fared better in the last five years," The Economic Times, 2013.

zweig, 2016). Consequently, one might expect a disproportionately adverse economic effect on Muslim households from the BJP's electoral wins. If these impacts are substantial, they could also contribute to long-term majority-minority disparities in income and upward mobility.

Table 5.6: Effect of BJP Seat Share on Income and Expenditure by Religion: Household level

Instrument = $\frac{\text{Share of close elections BJP won}}{\text{Share of close elections BJP involved}}$	**Total Income**	**Total Expenditure**
	2SLS	**2SLS**
	(1)	(2)
BJP Seat Share × Hindu	1031.219	890.961
	(1059.932)	(656.995)
BJP Seat Share × Muslim	1568.275	823.053
	(1572.904)	(855.396)
% effect due to an increase in BJP seat share from 25^{th} to 75^{th} percentile (47 p.p. increase)	(Hindu = 2.4%, Muslim=3.7%)	(Hindu = 3.1%, Muslim=3.4%)
Equality of Hindu & Muslim Coefficients	$p = 0.64$	$p = 0.92$
No. of Observations	5,694,113	5,696,192
Mean of Dependent Variable	19,586	12,343
Kleibergen-Paap F-Stat (First Stage)	52.8	65.1

Note: All regressions include household fixed effects and state-by-year fixed effects. Robust standard errors clustered at the district-by-year level are reported in parentheses. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively. Results for different expenditure and income categories are presented in Appendix Tables D.4 and D.5, respectively.

To understand this, we study whether an increase in the BJP seat share affects the income and expenditure patterns of Hindu and Muslim households. Table 5.6 reports these results. The outcome in Column (1) is the total income of the household from both labor and non-labor sources. We find no evidence that the BJP winning more seats significantly affects the incomes of Hindu or Muslim households. Both coefficients are positive, although *economically small* and *not* statistically significant. We find similar positive but statistically non-significant results for total household expenditure. The magnitudes of the coefficients suggest that an increase in the BJP seat share from 0.20 (25th percentile) to 0.67 (75th percentile) (nearly a 50 p.p. increase) would raise monthly incomes by roughly 2.4-3.7% and expenditures by 3.1-3.4% relative to the mean.[23] Because the estimates pool outcomes across the full five-year electoral cycle, one might wonder whether any consumption response is short-lived, showing up only in the years right after an election. Appendix Table D.3 shows that this is not the case: we detect no effect on total expenditure or income either in the first two years post-election or in the third to fifth years (despite divergent effects on sentiments across the full five-year electoral

[23]Please note that the outcomes are not defined on a per capita basis. However, we include household fixed effects, which account for differences in household size unless the number of members changes over time. The results remain the same if we instead use per capita measures.

term, as seen in Table 5.4).

This aggregate result may conceal important heterogeneity across different types of spending. For instance, essential expenditures—such as those on food—are likely less influenced by changes in political sentiment that accompany electoral cycles. In contrast, more discretionary spending on items like health, education, and luxury goods (even though they form a small share of overall spending) may be more sensitive to households' expectations about the future or shifts in the political mood.

To investigate this possibility, Appendix Table D.4 dis-aggregates household expenditure into the following categories: food, education, healthcare, and luxury items. The evidence suggests some heterogeneity across these categories. Specifically, the impact of an increase in the BJP seat share on food and education spending is nearly identical for both Hindu and Muslim households. However, for healthcare (Column 2) and luxury items (Column 4), the effects differ: we observe positive coefficients for Hindu households and negative ones for Muslim households, with the difference being statistically significant for healthcare spending ($p = 0.01$) and suggestive, though less robust, for luxury expenditure ($p = 0.16$).

For income categories (labor, private transfers, government transfers, and business income), we again observe largely non-significant effects, both within each religious group and between groups, with the notable exception of government transfers (Appendix Table D.5). Specifically, Muslims report a negative effect (p = 0.07) while Hindus report no significant effect, and this difference is statistically significant (p = 0.02). This finding may suggest religious targeting in the allocation of public funds by the BJP, although government transfers constitute only a small portion of overall household income, thus limiting their overall impact.

These heterogeneous effects are consistent with the notion that a heightened BJP presence, by giving rise to negative sentiment among Muslims, leads the group to curb discretionary spending (relative to Hindus) on areas such as health and luxury goods that are perhaps more susceptible to unplanned or sentiment-driven fluctuations. However, it is important to emphasize that these effects are generally modest, and when considering overall expenditure, the data do not support the presence of large-scale differences in spending behavior between Hindu and Muslim households following the BJP's electoral victories.

5.2.3 Discussion

Our theoretical framework explains why, despite substantial shifts in national sentiment, Hindu and Muslim households exhibit smaller changes in their personal financial outlook—and even more muted responses in consumption behavior, after a close victory by the BJP. Households face multiple layers of uncertainty that complicate their ability to interpret how national-level developments might affect their personal finances – first, ambiguity about the national economic condition, perceived through group-specific biases; and second, uncertainty over how changes in national conditions translate into household-level outcomes. Together, these factors dampen the divergence in personal

sentiment, even when national sentiment differs sharply between Hindu and Muslim households.

Since personal sentiment is a key driver of consumption, the effect on actual spending behavior is correspondingly weaker. Our framework suggests that in environments characterized by greater dispersion of idiosyncratic income shocks or higher uncertainty about the transmission of aggregate economic trends to household finances, the link between politically driven sentiment changes and consumption is likely to be weaker. This could explain why our findings from a developing country context contrast with results from higher-income countries, such as those reported in Gillitzer and Prasad (2018). However, our results align closely with the psychology of poverty literature, which argues that people with limited financial resources and greater uncertainty tend to be more cautious and deliberative in their spending, and less influenced by external non-economic stimuli (Mullainathan and Shafir, 2013). This contrast underscores how financial constraints in poorer settings can shape economic behavior in fundamentally different ways than in wealthier contexts.

Although this explanation is consistent with our empirical findings, it is important to recognize that other mechanisms may also help account for these patterns. One possibility is that changes in reported (national) economic sentiment primarily reflect shifts in political attitudes, particularly given the BJP's association with Hindu nationalism and anti-minority rhetoric. For Muslim households, negative political views toward the ruling party may spill over into perceptions of the economy, making it difficult to express optimism about economic conditions when political sentiments are negative. In this case, a deterioration in economic sentiment driven by political factors may not translate into changes in actual household spending, suggesting that politically driven sentiment and consumption are governed by distinct underlying processes. A related explanation is that Muslim households can form beliefs by taking cues from political elites or media sources (Broockman and Butler, 2017). If influential figures within the Muslim community highlight the adverse consequences of BJP rule, economic or otherwise, these messages may shape public perceptions even in the absence of immediate changes in personal economic conditions.

Whether due to uncertainties about the national economy and its implications for personal finances (as emphasized in our model), or due to limited discretionary spending, informal insurance networks, or other institutional buffers that insulate personal consumption from political change, Indian households appear capable of *compartmentalizing* their views of national economic health from their own financial circumstances. This compartmentalization seems to lie at the heart of our core empirical findings.

Lastly, it is important to underscore that despite the BJP's strong Hindu nationalist stance, we do not find evidence that the party has implemented large-scale supply-side policies (such as restrictions on employment opportunities or access to public services) that directly harm Muslim household consumption. Of course, there is substantial evidence of the BJP's negative effects on Muslims documented in other research—particularly in the form of increased violence and discrimination (Jaffrelot (2021); Nellis, Weaver and Rosenzweig (2016)). These are serious consequences in their own right, even if they do not manifest directly in broader household consumption patterns.

6 Conclusion

We document several facets of the relationship between consumer sentiment and household spending, and how politics shapes this relationship in the context of a large multiparty democracy where ethnopolitical group divides are highly salient. We show that sentiment about household finances predicts total expenditure growth, even after accounting for income changes, but sentiment about national finances has no additional predictive power.

A victory in close elections by the Hindu nationalist BJP has divergent effects on the sentiments of Hindus and Muslims. This disparity is much larger when it comes to the perception of national finance, as compared to personal finance. As a result, the effects on actual spending behavior are minimal. Our theoretical framework suggests that uncertainty about the national economic condition—along with uncertainty about how it might translate into personal financial outcomes—drives this muted response in both personal sentiment and consumption.

We find these results novel because, despite the deep-rooted influence of religion-based identity politics in India, such politics appear to have a limited impact on household consumption—a finding that might go against many priors. While further research is needed to understand, at a more micro-behavioral level, what drives the disconnect between national sentiment and personal financial decision-making, our findings clearly indicate that Indian households are capable of cognitively separating these domains when making expenditure choices. Future research could focus on understanding this behavioral non-response in a more systematic way. One promising direction would be to experimentally manipulate perceptions—perhaps through an information experiment like in Fuster et al. (2022) and Faia et al. (2024)—and observe whether shifts in national sentiment translate into changes in personal sentiment (or not). Such designs could also help disentangle the precise psychological mechanisms underlying consumer responses to political or macroeconomic information. With better micro-level data, it may also be possible to structurally estimate some of the key parameters in our theoretical model—such as income shock variances or the precision of national signals—and examine how different sub-populations respond to a common aggregate shock based on these characteristics.

One might also have expected supply-side channels through which the BJP's electoral victories could have adverse effects on Muslim households. However, our findings show little evidence for such effects—consistent with the overall null impact on consumption behavior.

Finally, an open question remains: which types of shocks, by shaping individual sentiments, meaningfully influence consumption, and to what extent? These are likely to be shocks that affect individuals' financial outlooks without necessarily altering their current incomes. For instance, witnessing layoffs in one's workplace or industry—while remaining personally unaffected—could still undermine confidence in future financial stability. Exploring these dynamics using suitable data remains an important direction for future research.

References

Acemoglu, Daron, and Andrew Scott. 1994. "Consumer Confidence and Rational Expectations: Are Agents' Beliefs Consistent with the Theory?" *The Economic Journal*, 104(422): 1–19.

Acharya, Sushant, Jess Benhabib, and Zhen Huo. 2021. "The anatomy of sentiment-driven fluctuations." *Journal of Economic Theory*, 195.

Anderson, Michael L. 2008. "Multiple Inference and Gender Differences in the Effects of Early Intervention: A Reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects." *Journal of the American Statistical Association*, 103(484): 1481–1495.

Anderson, Siwan, Patrick Francois, and Ashok Kotwal. 2015. "Clientelism in Indian Villages." *The American Economic Review*, 105(6): 1780–1816.

Aneja, Abhay, and S.K. Ritadhi. 2022. "Can political parties improve minority wellbeing? Evidence from India's "Silent Revolution"." *Journal of Development Economics*, 158.

Angeletos, George-Marios, and Jennifer La'O. 2013. "Sentiments." *Econometrica*, 81(2): 739–779.

Armona, Luis, Andreas Fuster, and Basit Zafar. 2019. "Home Price Expectations and Behaviour." *The Review of Economic Studies*, 86(4): 1371–1410.

Attanasio, Orazio, Agnes Kovacs, and Krisztina Molnar. 2020. "Euler Equations, Subjective Expectations and Income Shocks." *Economica*, 87: 406–441.

Attanasio, Orazio P., and Guglielmo Weber. 1995. "Is Consumption Growth Consistent with Intertemporal Optimization? Evidence from the Consumer Expenditure Survey." *Journal of Political Economy*, 103(6): 1121–1157.

Attanasio, Orazio P., and Hamish Low. 2004. "Estimating Euler equations." *Review of Economic Dynamics*, 7: 406–435.

Bardhan, Pranab, Dilip Mookherjee, and Monica Parra Torrado. 2005. "Impact of reservations of panchayat pradhans on targeting in West Bengal." *University of California at Berkeley, department of economics, typescript*.

Barsky, Robert B., and Eric R. Sims. 2012. "Information, Animal Spirits, and the Meaning of Innovations in Consumer Confidence." *The American Economic Review*, 102(4): 1343–1377.

Beland, Louis-Philippe. 2015. "Political Parties and Labor-Market Outcomes: Evidence from US States." *American Economic Journal: Applied Economics*, 7(4): 198–220.

Benhabib, Jess, and Mark M. Spiegel. 2018. "Sentiments and Economic Activity: Evidence from US States." *The Economic Journal*, https://doi.org/10.1111/ecoj.12605.

Benhabib, Jess, Pegfei Wang, and Yi Wen. 2015. "Sentiments and Aggregate Demand Fluctuations." *Econometrica*, 83(2): 549–585.

Bhalotra, Sonia, and Irma Clots-Figueras. 2014. "Health and the Political Agency of Women." *American Economic Journal: Economic Policy*, 6(2): 164–197.

Binder, Carola Conces, Rupal Kamdar, and Jane M. Ryngaert. 2024. "Partisan expectations and COVID-era inflation." *Journal of Monetary Economics*, 148.

Blanchard, Olivier. 1993. "Consumption and the Recession of 1990-91." *AEA Papers and Proceedings*, 83(2): 270–274.

Blundell, Richard, Luigi Pistaferri, and Ian Preston. 2008. "Consumption Inequality and Partial Insurance." *The American Economic Review*, 98(5): 1887–1921.

Bram, Jason, and Sydney Ludvigson. 1998. "Does Consumer Confidence Forecast Household Expenditure? A Sentiment Index Horse Race." *FRBNY Economic Policy Review*, 4(2): 59–78.

Broockman, David E, and Daniel M Butler. 2017. "The causal effects of elite position-taking on voter attitudes: Field experiments with elite communication." *American Journal of Political Science*, 61(1): 208–221.

Carroll, Christopher D., Jeffrey C. Fuhrer, and David W. Wilcox. 1994. "Does Consumer Sentiment Forecast Household Spending? If So, Why?" *The American Economic Review*, 84(5): 1397–1408.

Chattopadhyay, Raghabendra, and Esther Duflo. 2004. "Impact of reservation in Panchayati Raj: Evidence from a nationwide randomised experiment." *Economic and Political Weekly*, 979–986.

Chin, Aimee, and Nishith Prakash. 2011. "The redistributive effects of political reservation for minorities: Evidence from India." *Journal of Development Economics*, 96(2): 265–277.

Clots-Figueras, Irma. 2011. "Women in politics: Evidence from the Indian States." *Journal of Public Economics*, 95: 664–690.

Coibion, Olivier, Yuriy Gorodnichenko, and Michael Weber. 2020. "Political Polarization and Expected Economic Outcomes." *NBER Working Paper*, 28044.

D'Acunto, Francesco, and Michael Weber. 2024. "Why Survey-Based Subjective Expectations are Meaningful and Important." *NBER Working Paper*, 32199.

Dunning, Thad, and Janhavi Nilekani. 2013. "Ethnic Quotas and Political Mobilization: Caste, Parties, and Distribution in Indian Village Councils." *American Political Science Review*, 107(1): 35–56.

Erikson, Robert S., Michael B. MacKuen, and James A. Stimson. 1998. "What Moves Macropartisanship? A Response to Green, Palmquist, and Schickler." *American Political Science Review*, 92(4): 901–912.

Faia, Ester, Andreas Fuster, Vincenzo Pezone, and Basit Zafar. 2024. "Biases in Informatio Selection and Processing: Survey Evidence from the Pandemic." *The Review of Economics and Statistics*, 106(3): 829–847.

Fan, Chengze Simon, and Phoebe Wong. 1998. "Does consumer sentiment forecast household spending? The Hong Kong case." *Economic Letters*, 58: 77–84.

Friend, Irwin, and F. Gerard Adams. 1964. "The Predictive Ability of Consumer Attitudes, Stock Prices, and Non-Attitudinal Variables." *Journal of the American Statistical Association*, 59(308): 987–1005.

Fuster, Andreas, Ricardo Perez-Truglia, Mirko Wiederholt, and Basit Zafar. 2022. "Expectations with Endogenous Information Acquisition: An Experimental Investigation." *The Review of Economics and Statistics*, 104(5): 1059–1078.

Gerber, Alan S., and Gregory A. Huber. 2009. "Partisanship and Economic Behavior: Do Partisan Differences in Economic Forecasts Predict Real Economic Behavior?" *American Political Science Review*, 103(3): 407–426.

Gerber, Alan S., and Gregory A. Huber. 2010. "Partisanship, Political Control, and Economic Assessments." *American Journal of Political Science*, 54(1): 153–173.

Ghosh, Arkadev, Prerna Kundu, Matt Lowe, and Gareth Nellis. 2024. "Creating Cohesive Communities: A Youth Camp Experiment in India." *The Review of Economic Studies*, forthcoming.

Gillitzer, Christian, and Nalini Prasad. 2018. "The Effect of Consumer Sentiment on Consumption." *American Economic Journal: Macroeconomics*, 10(4): 234–269.

Gillitzer, Christian, Nalini Prasad, and Tim Robinson. 2021. "Political Attitudes and Inflation Expectations: Evidence and Implications." *Journal of Money, Credit and Banking*, 53(4): 605–634.

Guirola, Luis. 2025. "Economic expectations under the shadow of party polarization: Evidence from 135 government changes." *European Economic Review*, 171.

Hall, Robert E. 1993. "Macro Theory and the Recession of 1990-91." *AEA Papers and Proceedings*, 83(2): 275–279.

Hansen, Lars Peter, and Kenneth J. Singleton. 1983. "Stochastic Consumption, Risk Aversion, and the Temporal Behavior of Asset Returns." *Journal of Political Economy*, 91(2): 249–265.

Heath, Oliver. 2020. "Communal realignment and support for the BJP, 2009–2019." *Contemporary South Asia*, 28(2): 195–208.

Howrey, E. Philip. 2001. "The Predictive Power of the Index of Consumer Sentiment." *Brookings Papers on Economic Activity*, 2001(1): 175–207.

Huberman, Gur, Tobias Konitzer, Masha Krupenskin, David Rothschild, and Shawndra Hill. 2018. "Economic Expectations, Voting, and Economic Decisions around Elections." *AEA Papers and Proceedings*, 108: 597–602.

Imbens, Guido, and Thomas Lemieux. 2008. "Regression discontinuity designs: A guide to practice." *Journal of Econometrics*, 142: 615–635.

Jaffrelot, Christophe. 2021. *Modi's India: Hindu Nationalism and the Rise of Ethnic Democracy.* Princeton, NJ:Princeton University Press.

Jappelli, Tullio, and Luigi Pistaferri. 2000. "Using subjective income expectations to test for excess sensitivity of consumption to predicted income growth." *European Economic Review*, 44: 337–358.

Jensenius, Francesca Refsum. 2015. "Development from Representation? A Study of Quotas for the Scheduled Castes in India." *American Economic Journal: Applied Economics*, 7(3): 196–220.

Juhro, Solikin M., and Bernard Njindan Iyke. 2020. "Consumer confidence and consumption expenditure in Indonesia." *Economic Modelling*, 89: 367–377.

Kamdar, Rupal, and Walker Ray. 2022. "Polarized Expectations, Polarized Consumption." *Working Paper*.

Kwan, Andy C.C., and John A. Cotsomitis. 2006. "The Usefulness of Consumer Confidence in Forecasting Household Spending in Canada: A National and Regional Analysis." *Economic Inquiry*, 44(1): 185–197.

Lagerborg, Andresa, Evi Pappa, and Morten O. Ravn. 2023. "Sentimental Business Cycles." *Review of Economic Studies*, 90: 1358–1393.

Ludvigson, Sydney. 1996. "Consumer Sentiment and Household Expenditure: Reevaluating the Forecasting Equations." *Federal Reserve Bank of New York Research Paper*, No. 9636.

Ludvigson, Sydney C. 2004. "Consumer Confidence and Consumer Spending." *The Journal of Economic Perspectives*, 18(2): 29–50.

McCrary, Justin. 2008. "Manipulation of the running variable in the regression discontinuity design: A density test." *Journal of Econometrics*, 142: 698–714.

Meeuwis, Maarten, Jonathan A. Parker, Antoinette Schoar, and Duncan Simester. 2022. "Belief Disagreement and Portfolio Choice." *The Journal of Finance*, LXXVII(6): 3191–3247.

Meyersson, Erik. 2014. "Islamic Rule and the Empowerment of the Poor and Pious." *Econometrica*, 82(1): 229–269.

Mian, Atif, Amir Sufi, and Nasim Khoshkhou. 2015. "Government Economic Policy, Sentiments, and Consumption." *NBER Working Paper*, 21316.

Mian, Atif, Amir Sufi, and Nasim Khoshkhou. 2023. "Partisan Bias, Economic Expectations, and Household Spending." *The Review of Economics and Statistics*, 105(3): 493–510.

Mitra, Aruni, and Ronit Mukherji. 2025. "Class, Caste and Conspicuous Consumption in India." *Working Paper*.

Mullainathan, Sendhil, and Eldar Shafir. 2013. *Scarcity: Why having too little means so much.* Penguin Books.

Munshi, Kaivan, and Mark Rosenzweig. 2015. "Insiders and Outsiders: Local Ethnic Politics and Public Goods Provision." *NBER Working Paper*, 21720.

Nellis, Gareth, Michael Weaver, and Steven C. Rosenzweig. 2016. "Do Parties Matter for Ethnic Violence? Evidence from India." *Quarterly Journal of Political Science*, 11(3): 249–277.

Souleles, Nicholas S. 2004. "Expectations, Heterogeneous Forecast Errors, and Consumption: Micro Evidence from the Michigan Consumer Sentiment Surveys." *Journal of Money, Credit and Banking*, 36(1): 39–72.

Stoltenberg, Christian A., and Arne Uhlendorff. 2024. "Consumption Choices and Earnings Expectations: Empirical Evidence and Structural Estimation." *Working Paper*.

Appendix

There are three appendices, A through D corresponding to Sections 2 through 5, respectively in the main paper.

A Appendix to Section 2

A.1 Proof of Lemma

We have defined: $z_i \equiv \frac{Y_i^P - \alpha X_i}{Y^N} = \beta_i + \frac{\varepsilon_i^P}{Y^N}$. Then, $z_i | \left(Y^N, s\right) \sim N\left(\beta_i, \frac{\sigma_P^2}{(Y^N)^2}\right)$. Since $Y^N | s, g \sim N\left(S_g^N, V^N\right)$, and Y^N being the national income is sufficiently away from zero, we have the following approximate expression for the predictive variance of z_i at time $t = 0$:

$$\sigma_z^2(s) \equiv \mathbb{E}\left[\frac{\sigma_P^2}{\left(Y^N\right)^2}\middle| s, g\right] \approx \sigma_P^2 \left(S_g^N\right)^{-2} \left(1 + 3\frac{V^N}{\left(S_g^N\right)^2}\right)$$

To see this, define a function $f(x) = \frac{1}{x^2}$. A second order Taylor expansion of this function $f(x)$ around a fixed point $x = a$ is given by $f(x) \approx \frac{1}{a^2} - \frac{2}{a^3}(x-a) + \frac{3}{a^4}(x-a)^2$. Applying this approximation of the function for the random variable Y^N around S_g^N, we get,

$$\begin{aligned} \frac{1}{\left(Y^N\right)^2} &\approx \frac{1}{\left(S_g^N\right)^2} - \frac{2}{\left(S_g^N\right)^3}\left(Y^N - S_g^N\right) + \frac{3}{\left(S_g^N\right)^4}\left(Y^N - S_g^N\right)^2 \\ \implies \mathbb{E}\left[\frac{1}{\left(Y^N\right)^2}\middle| s, g\right] &\approx \frac{1}{\left(S_g^N\right)^2} + 3\frac{V^N}{\left(S_g^N\right)^4} = \left(S_g^N\right)^{-2}\left(1 + 3\frac{V^N}{\left(S_g^N\right)^2}\right) \end{aligned} \tag{A.1}$$

The last step follows from the posterior mean and variance of $Y^N | s, g$ in equation (2.6). Then the expression for the predictive variance of z_i at $t = 0$, $\sigma_z^2(s)$ can be readily derived by multiplying both sides of equation (A.1) by σ_P^2.

Given the variance of β_i as v_0^2 and the variance of z_i as $\sigma_z^2(s)$, it can be easily seen that the Kalman-gain weight placed on z_i in the update for β_i is given by

$$\kappa(s) = \frac{v_0^2}{v_0^2 + \sigma_z^2(s)}$$

Therefore, the posterior mean of β_i is given as follows:

$$E\left[\beta_i | z_i, Y^N\right] = \kappa\left(Y^N\right) z_i + \left(1 - \kappa\left(Y^N\right)\right)\bar{\beta} \tag{A.2}$$

A.2 Proof of Proposition

Taking conditional expectations on both sides of equation (2.2), and using the Law of Iterated Expectations (henceforth, LIE), we get

$$\begin{aligned} E\left[Y_i^P|X_i,s,g\right] &= \alpha X_i + E_{Y^N|s,g}\left[E_{\beta_i}\left[\beta_i Y^N|s,Y^N\right]\right] \\ &= \alpha X_i + E\left[\beta_i Y^N|s,g\right] \end{aligned} \tag{A.3}$$

Using the definition of covariance, $Cov(X,Y) = E(XY) - E(X)E(Y)$, we can write the last term of equation (A.3) as follows:

$$\begin{aligned} E\left[\beta_i Y^N|s,g\right] &= E\left[\beta_i|s,g\right]E\left[Y^N|s,g\right] + \text{Cov}\left(\beta_i, Y^N|s,g\right) \\ &= \bar{\beta}S_g^N + \text{Cov}\left(\beta_i, Y^N|s,g\right) \end{aligned} \tag{A.4}$$

Therefore, $E\left[Y_i^P|X_i,s,g\right]$ can be found if we can solve for $\text{Cov}\left(\beta_i, Y^N|s,g\right)$ in equation (A.4). Since the posterior mean of β_i is given by equation (A.2), we can express posterior β_i as $\bar{\beta}+\kappa\left(Y^N\right)\left(z_i-\bar{\beta}\right)$. Thus, we can rewrite the covariance term as $\text{Cov}\left(\beta_i, Y^N|s,g\right) = \text{Cov}\left[\kappa(Y^N)(z_i-\bar{\beta}), Y^N\right]$. To simplify the calculation of this covariance, we take a linear Taylor approximation of the function $\kappa(.)$ around the fixed point S_g^N, that is, $\kappa\left(Y^N\right) \approx \kappa\left(S_g^N\right) + \kappa'\left(S_g^N\right)\left(Y^N - S_g^N\right)$. Therefore, plugging this approximate expression of $\kappa\left(Y^n\right)$ into the covariance yields

$$\text{Cov}\left(\beta_i, Y^N|s,g\right) = \kappa\left(S_g^N\right)\text{Cov}\left(z_i-\bar{\beta}, Y^N\right) + \kappa'\left(S_g^N\right)\text{Cov}\left[\left(Y^N - S_g^N\right)\left(z_i-\bar{\beta}\right), Y^N\right] \tag{A.5}$$

We can rewrite the second covariance term on the right-hand side of equation (A.5) as follows:

$$\begin{aligned} \text{Cov}\left[\left(Y^N - S_g^N\right)\left(z_i-\bar{\beta}\right), Y^N\right] &= \text{Cov}\left[\left(Y^N - S_g^N\right)\left(z_i-\bar{\beta}\right), \left(Y^N - S_g^N\right)\right] \\ &= E\left[\left(Y^N - S_g^N\right)^2\left(z_i-\bar{\beta}\right)\right] - E\left[Y^N - S_g^N\right]E\left[\left(Y^N - S_g^N\right)\left(z_i-\beta\right)\right] \\ &= E\left[\left(Y^N - S_g^N\right)^2\left(z_i-\bar{\beta}\right)\right] \quad (\because E\left(Y^N - S_g^N\right) = 0, \text{ by definition}) \\ &= E_{Y^N}\left[\left(Y^N - S_g^N\right)^2 E\left(z_i-\bar{\beta}\right)|Y^N\right] \quad \text{(applying LIE)} \\ &= 0 \quad (\because E\left(z_i-\bar{\beta}\right) = 0, \text{ by definition}) \end{aligned}$$

Then, equation (A.5) simplifies to

$$\begin{aligned} \text{Cov}\left(\beta_i, Y^N|s,g\right) &= \kappa\left(S_g^N\right)\text{Cov}\left(z_i-\bar{\beta}, Y^N\right) \\ &= \kappa\left(S_g^N\right)\text{Cov}\left(z_i, Y^N\right) \\ &= \kappa\left(S_g^N\right)\text{Cov}\left(\frac{Y_i^P - \alpha X_i}{Y^N}, Y^N\right) \end{aligned} \tag{A.6}$$

We notice that for any differentiable function $\phi\left(Y^N\right)$, we can approximate it using a first-order Taylor approximation around the fixed point $Y^N = S_g^N$ as follows: $\phi\left(Y^N\right) \approx \phi\left(S_g^N\right) + \phi'\left(S_g^N\right)\left(Y^N - S_g^N\right)$. Because $E\left(Y^N - S_g^N\right) = 0$, this allows us to write

$$E\left[\phi\left(Y^N\right)\right] \approx E\left[\phi\left(S_g^N\right)\right] \tag{A.7}$$

Stein's lemma states that for a normally distributed random variable X with expectation μ and variance σ^2, and a differentiable function $h(.)$ for which the two expectations $E\left[h(X)(X-\mu)\right]$ and $E\left[h'(X)\right]$ both exist, $E\left[h(X)(X-\mu)\right] = \sigma^2 E\left[h'(X)\right]$. Using Stein's lemma for the function $f\left(Y^N\right) = \frac{Y_i^P - \alpha X_i}{Y^N}$, we can write: $\text{Cov}\left(f\left(Y^N\right), Y^N\right) = V^N E\left[f'\left(Y^N\right)\right]$, since V^N is the variance of the normally distributed random variable Y^N. Now, using equation (A.7) for the function $f'\left(Y^N\right)$, we can write

$$\begin{aligned}
\text{Cov}\left(f\left(Y^N\right), Y^N\right) &\approx V^N E\left[f'\left(S_g^N\right)\right] \\
&= -V^N E\left[\frac{Y_i^P - \alpha X_i}{\left(S_g^N\right)^2}\right] \quad \text{(from the definition of } f(.) \text{ above)} \\
&= -\frac{V^N}{\left(S_g^N\right)^2} E\left(Y_i^P - \alpha X_i\right) \\
&= -\frac{V^N}{\left(S_g^N\right)^2} E\left(\beta_i Y^N + \varepsilon_i^P\right) \quad \text{(from equation (2.2))} \\
&= -\frac{V^N}{\left(S_g^N\right)^2} E\left(\beta_i Y^N\right) \quad (\because \varepsilon_i^p \text{ has mean zero}) \\
&= -\frac{V^N}{\left(S_g^N\right)^2} E\left[E\left(\beta_i Y^N | Y^N\right)\right] \quad \text{(applying LIE)} \\
&= -\frac{V^N \bar{\beta}}{\left(S_g^N\right)^2} E\left(Y^N\right) \quad (\because \beta_i \text{ has mean } \bar{\beta}) \\
&= -\frac{V^N \bar{\beta}}{S_g^N} \quad (\because Y^N \text{ has mean } S_g^N) \\
\implies \text{Cov}\left(\beta_i, Y^N | s, g\right) &\approx -\kappa\left(S_g^N\right) \frac{V^N \bar{\beta}}{S_g^N} \quad \text{(from equation (A.6))} \\
\implies E\left[\beta_i Y^N | s, g\right] &\approx \bar{\beta} S_g^N - \kappa\left(S_g^N\right) \frac{V^N \bar{\beta}}{S_g^N} \quad \text{(from equation (A.4))} \\
\implies E\left[Y_i^P | X_i, s, g\right] &\approx \alpha X_i + \bar{\beta} S_g^N - \kappa\left(S_g^N\right) \frac{V^N \bar{\beta}}{S_g^N} \quad \text{(from equation (A.3))}
\end{aligned} \tag{A.8}$$

Equation (A.8) can be used to define the between-group gap in personal or individual sentiment as follows:

$$\begin{aligned}\Delta^P &\equiv E\left[Y_i^P|X_i,s,H\right]-E\left[Y_i^P|X_i,s,M\right]\\ &\approx \bar{\beta}\left[\left(S_H^N-S_M^N\right)-V^N\left(\frac{\kappa\left(S_H^N\right)}{S_H^N}-\frac{\kappa\left(S_M^N\right)}{S_M^N}\right)\right]\\ &\equiv \bar{\beta}\left[\Delta^N-V^N\left(\frac{\kappa\left(S_H^N\right)}{S_H^N}-\frac{\kappa\left(S_M^N\right)}{S_M^N}\right)\right]\end{aligned} \tag{A.9}$$

The last step uses the definition of the between-group gap in national sentiment, $\Delta^N = S_H^N - S_M^N$.

For the case when $\bar{\beta} \leq 1$, a sufficient condition for $\Delta^P < \Delta^N$ to hold is $\frac{\kappa\left(S_H^N\right)}{S_H^N} > \frac{\kappa\left(S_M^N\right)}{S_M^N}$. Using the expression of $\kappa\left(S_g^N\right)$ from the Lemma and the definition of Δ^N, it is easy to show that

$$\frac{\kappa\left(S_H^N\right)}{S_H^N} > \frac{\kappa\left(S_M^N\right)}{S_M^N} \iff \sigma_P^2\left[1+\frac{3V^N\left[\left(S_H^N\right)^2+\left(S_M^N\right)^2+S_H^NS_M^N\right]}{\left(S_H^NS_M^N\right)^2}\right] > v_0^2S_H^NS_M^N$$

Therefore, a sufficient condition for $\frac{\kappa\left(S_H^N\right)}{S_H^N} > \frac{\kappa\left(S_M^N\right)}{S_M^N}$ is $\sigma_P^2 > v_0^2S_H^NS_M^N$. Therefore, for $\bar{\beta} \leq 1$, we have shown that the proposition holds if $\sigma_P^2 > v_0^2S_H^NS_M^N$. The proposition can hold even if $\bar{\beta} > 1$ provided $\bar{\beta}$ is not too large.

The necessary condition for $\Delta^P < \Delta^N$ is given as follows:

$$\bar{\beta} < \left[1-\frac{V^N}{\Delta^N}\left(\frac{\kappa\left(S_H^N\right)}{S_H^N}-\frac{\kappa\left(S_M^N\right)}{S_M^N}\right)\right]^{-1} \tag{A.10}$$

Note that the necessary condition in (A.10) has the same comparative statics as the original proposition. The condition is easier to satisfy if (a) $\bar{\beta}$ is smaller, making the left-hand side of the inequality smaller, or if (b) σ_P^2 is larger or v_0^2 is smaller – both of which make the right-hand side of the inequality larger.

B Appendix to Section 3

Motivation for the Expenditure Growth Regression Specification

In a standard life-cycle model of expected utility maximization by a household choosing consumption subject to a budget constraint, one can derive the intertemporal optimality condition or the Euler equation by equating the discounted expected marginal utilities of consumption in two consecutive periods. Assuming a power utility function like the CRRA, the Euler equation can be used to express consumption growth as a linear function of the (log) real interest rate, changes in any utility-shifting variables that are exogenous and deterministic from the point of view of the household and observable to the econometrician (e.g., age, location, etc.), and an error term.[24] Attanasio, Kovacs and Molnar (2020) argue that the error term, in turn, contains several important components: (i) the expectational error in consumption growth, (ii) the expectational error in real interest rate, (iii) any unobserved heterogeneity across households that influences utility, (iv) any measurement error in consumption, and (v) deviations of conditional higher-order moments of consumption growth and real interest rate from their unconditional means. Of these, we are particularly interested in the two expectational error components, (i) and (ii).

Blundell, Pistaferri and Preston (2008) show that the expectational error in consumption growth can be approximated by a linear function of the permanent and transitory shocks to a log-linear income process. Without assuming a log-linear income process or delving into the structural identification of the permanent and transitory income shocks, it can still be argued that the expectational error in consumption growth is a function of income growth. The coefficient of the income growth variable in a regression of consumption growth on income growth can be interpreted similarly to the loading factors for permanent and transitory income shocks in Blundell, Pistaferri and Preston (2008). A coefficient close to one means that income fluctuations are transmitted almost entirely to consumption changes, implying little consumption insurance against income shocks. On the other hand, a coefficient close to zero implies high levels of consumption smoothing.

The expectational error in the interest rate is the deviation of the realized interest rate from the rationally expected value of the interest rate. Not only does the interest rate contain information regarding the aggregate economic condition, e.g., the inflation rate, the real return on investment, etc., but also individual households' portfolio choices. Therefore, any expectational error in the interest rate can be considered a function of household sentiment about their personal finances and the national economy.

Taking the two expectational error terms in the Euler equation into consideration, we can, therefore, express the change in log expenditure as a linear function of initial consumer sentiment, the

[24] Log-linearizing an Euler equation helps obtain consistent estimates of the relationship (see Attanasio and Low (2004)), particularly when the income process is assumed to be log-linear. Factors like the elasticity of intertemporal substitution and the unconditional means of the higher-order moments of consumption growth and real interest rate are subsumed in constant terms in the log-linear Euler equation (see Hansen and Singleton (1983)).

change in log income, and an error term capturing measurement error, higher-order moments, and unobserved heterogeneity. This is the basis of our estimation equation (3.1), where we test whether sentiments can predict expenditure growth above and beyond the role played by income growth. It is worth noting that despite equation (3.1) describing consumption growth and not log consumption levels, we include household fixed effects in that regression. This is because the sentiment variables are measured at the initial period, and changes in these sentiment variables are not meaningful objects, given that the survey questions on sentiments already measure perception or expectation about *changes* in financial conditions. Therefore, to control for the household-specific optimism or pessimism, we must include household fixed effects in the consumption growth equation.

It is worth noting that equation (3.1) can be viewed as a generalized version of the standard log-linear consumption function derived, for example, in Blundell, Pistaferri and Preston (2008) – augmented with individual and national sentiment, one-period-ahead income growth and household fixed effects. Thus, by constraining $\beta = \delta_f = \gamma_h = 0$, we can get back the standard consumption growth function.

C Appendix to Section 4

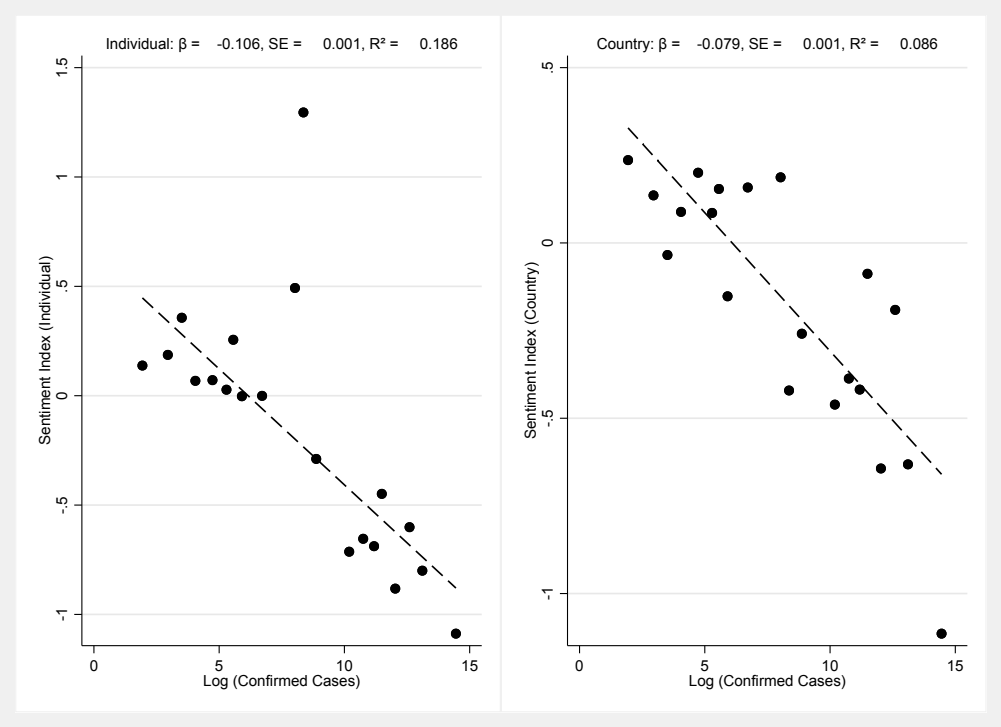


Figure C.1: Correlations of Sentiment Indices with Covid-19 Cases across Indian Districts

Note: The two panels of the figure show the bin scatter plots of Individual Sentiment Index (left panel) and Country Sentiment Index (right panel) against the logarithm of total confirmed cases of COVID-19 across Indian districts during the second and third quarters of 2020. In estimating the fitted lines, observations are weighted by the district-level population estimates in 2021. Estimates of the slope coefficients (β) along with their standard errors, and the R-squared of the regressions are reported.

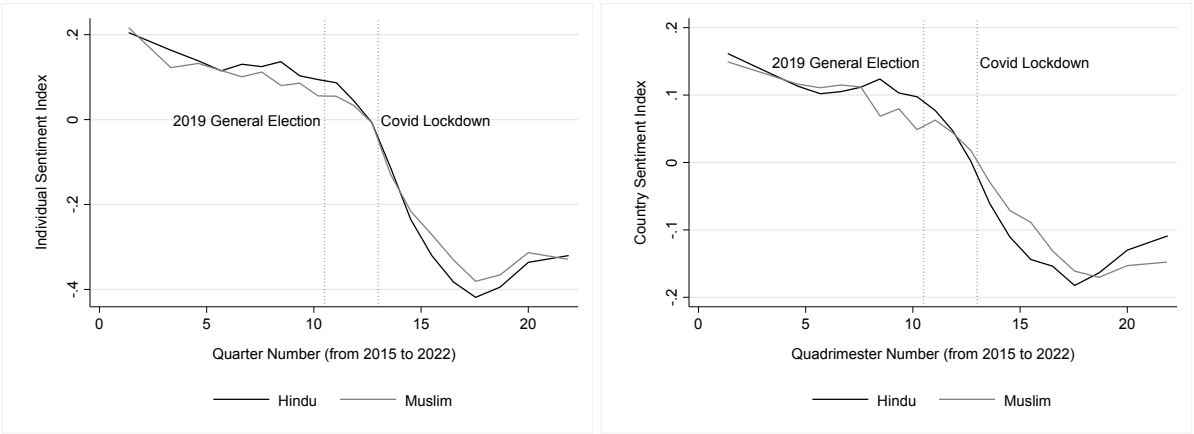
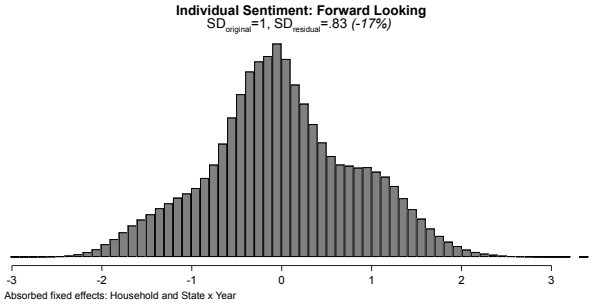
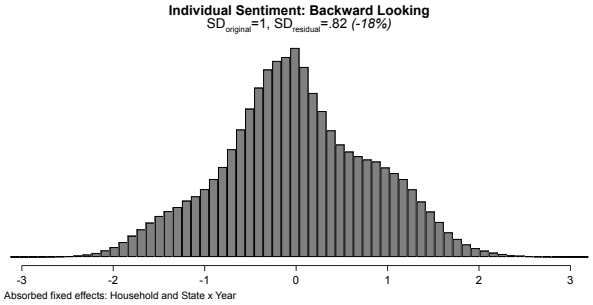


Figure C.2: Individual & Country Sentiment Indices by Religion over Time

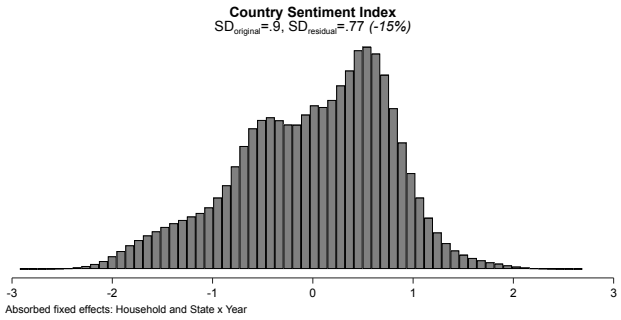
Note: The top panel shows the time series of the Individual (left) and Country (right) Sentiment Indices residualized by household fixed effects, separately for Hindus and Muslims. The timings of the 2019 general election and the onset of the COVID-19 lockdown are shown by dotted vertical lines.



(a) Forward Looking Individual Sentiment



(b) Backward Looking Individual Sentiment



(c) Forward Looking Country Sentiment Index

Figure C.3: Residual variation in sentiment indices after accounting for fixed effects

Note: This figure displays the distribution of the two sentiment indices—individual-level and country-level—after residualizing them with respect to household and state-by-year fixed effects. These fixed effects account for 16–22% of the variation in the indices.

Table C.1: Correlation between Past Income Growth and Individual Sentiment about Current Financial Condition Compared to Last Year by Religion

Dependent Variable:	**Hindu**	**Muslim**
How is the family faring financially compared to a year ago?	(1)	(2)
Panel A: *Income Growth from Last Quadrimester*		
Δ Log Income between $t-1$ and t	0.0484***	0.0864***
	(0.0013)	(0.0060)
No. of Observations	1,927,297	207,627
Mean of Dependent Variable	0.02	0.00
Panel B: *Income Growth from Last Year*		
Δ Log Income between $t-3$ and t	0.0688***	0.0812***
	(0.0014)	(0.0055)
No. of Observations	1,687,487	181,248
Mean of Dependent Variable	-0.01	-0.02

Note: The unit of time is a quadrimester. Since there are three quadrimesters in a year, an annual change in any variable x is calculated as $x_t - x_{t-3}$. Panel A uses income growth between the last quadrimester and the current period, while Panel B uses the annual income growth since last year as the explanatory variable. In both panels, the dependent variable is measured at the current period t. Robust standard errors clustered at the household level are reported in parentheses. All regressions include state-by-year fixed effects and household fixed effects. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table C.2: Correlation between Future Income Growth and Individual Sentiment about One Year Ahead Financial Condition by Religion

	Hindu	**Muslim**
	(1)	(2)
Panel A. *Dependent Variable:* Δ *Log Income between t and* $t+1$		
How will the family fare financially a year from now?	-0.0417***	-0.0488***
	(0.0010)	(0.0024)
No. of Observations	1,927,297	207,611
Mean of Dependent Variable	0.03	0.03
Panel B. *Dependent Variable:* Δ *Log Income between t and* $t+3$		
How will the family fare financially a year from now?	-0.0586***	-0.0599***
	(0.0012)	(0.0032)
No. of Observations	1,687,487	181,248
Mean of Dependent Variable	0.07	0.08

Note: The unit of time is a quadrimester. Since there are three quadrimesters in a year, an annual change in any variable x is calculated as $x_t - x_{t-3}$. Panel A uses income growth between the current quadrimester and the next one, while Panel B uses the annual income growth between the current period and next year as the dependent variable. In both panels, the explanatory variable is measured at the current period t. Robust standard errors clustered at the household level are reported in parentheses. All regressions include state-by-year fixed effects and household fixed effects. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table C.3: Follow-Through of Stated Position of Whether It Is a Good Time to Buy Durables by Religion

Dependent Variable:	**Hindu**	**Muslim**
Log Durable Expenditure at time t	(1)	(2)
Sentiment about durable expenditure at t	0.1278***	0.0656***
	(0.0031)	(0.0090)
Δ Log Income between $t-1$ and t	0.0863***	0.1399***
	(0.0035)	(0.0138)
Δ Log Income between t and $t+1$	-0.0859***	-0.1156***
	(0.0035)	(0.0133)
No. of Observations	1,558,375	165,197
Mean of Dependent Variable	2.45	2.12

Note: Robust standard errors clustered at the household level are reported in parentheses. All regressions include state-by-year fixed effects and household fixed effects. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

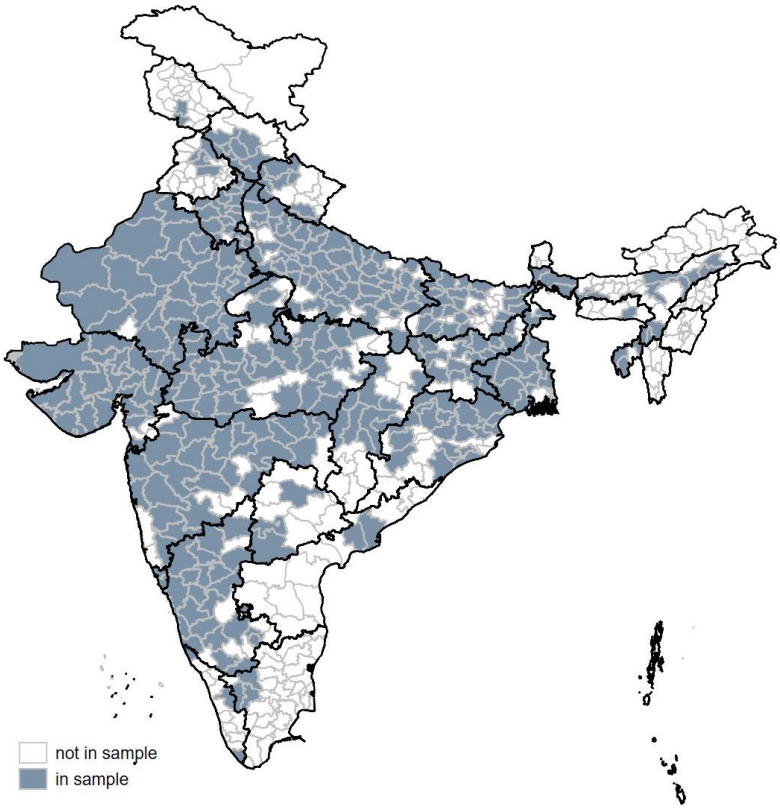


Figure C.4: Districts with At Least One State Assembly Constituency with BJP in a Close Electoral Contest

Note: The map shows all district boundaries of India in light grey lines and all state boundaries in black lines. The districts in dark grey colour had at least one state assembly constituency with the BJP involved in a close electoral contest, i.e., less than 5% vote share difference with the nearest competitor. The white (uncoloured) districts had no constituency where the BJP was involved in a close contest during the period under study.

D Appendix to Section 5

Table D.1: Effects of Forward and Backward Looking Individual Sentiments on Growth in Different Expenditure Categories over a Year for Hindu and Muslim Households

	Δ Log Expenditure in Different Categories between $t-3$ and t				
	Total	**Food**	**Health**	**Education**	**Luxury**
	(1)	(2)	(3)	(4)	(5)
A. Forward Looking Individual Sentiment at $t-3$					
Forward-looking individual sentiment at $t-3$ x Hindu	-0.0176***	-0.0092***	-0.0213***	-0.1338***	-0.1056***
	(0.0006)	(0.0006)	(0.0025)	(0.0046)	(0.0028)
Forward-looking individual sentiment at $t-3$ x Muslim	-0.0233***	-0.0142***	-0.0445***	-0.0900***	-0.1185***
	(0.0017)	(0.0017)	(0.0075)	(0.0143)	(0.0100)
Δ Log Income between $t-3$ and t	0.1516***	0.1089***	0.1722***	0.2198***	0.3637***
	(0.0018)	(0.0014)	(0.0035)	(0.0056)	(0.0047)
Equality of Hindu and Muslim Coefficients	$p<0.01$	$p<0.01$	$p=0.11$	$p<0.01$	$p=0.21$
No. of Observations	1,868,735	1,868,735	1,868,735	1,868,735	1,868,735
Mean of Dependent Variable	0.06	0.04	0.06	-0.07	0.08
B. Backward Looking Individual Sentiment at $t-3$					
Backward-looking individual sentiment at $t-3$ x Hindu	-0.0160***	-0.0078***	-0.0224***	-0.1248***	-0.1205***
	(0.0006)	(0.0006)	(0.0025)	(0.0047)	(0.0029)
Backward-looking individual sentiment at $t-3$ x Muslim	-0.0213***	-0.0136***	-0.0558***	-0.0566***	-0.1473***
	(0.0018)	(0.0017)	(0.0074)	(0.0145)	(0.0100)
Δ Log Income between $t-3$ and t	0.1517***	0.1089***	0.1720***	0.2203***	0.3624***
	(0.0018)	(0.0014)	(0.0035)	(0.0056)	(0.0047)
Equality of Hindu and Muslim Coefficients	$p<0.01$	$p<0.01$	$p<0.01$	$p<0.01$	$p<0.01$
No. of Observations	1,868,735	1,868,735	1,868,735	1,868,735	1,868,735
Mean of Dependent Variable	0.06	0.04	0.06	-0.07	0.08

Note: Robust standard errors clustered at the household level are reported in parentheses. All regressions include state-by-year fixed effects and household fixed effects. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table D.2: Effect of BJP Seat Share on Economic Sentiments by Religion: Robustness to Close Election Threshold

Instrument = $\frac{\text{Share of close elections BJP won}}{\text{Share of close elections BJP involved}}$	Individual Sentiment Variables			Country Sentiment
	Forward Looking	**Backward Looking**	**Good Time to Buy Durables**	**Index**
	(1)	(2)	(3)	(4)
Panel A: *Close election threshold = 4%* (N = 1,322,588)				
OLS regressions				
BJP Seat Share × Hindu	0.0478	0.0163	0.0835	-0.106
	(0.0827)	(0.0825)	(0.0851)	(0.0950)
BJP Seat Share × Muslim	-0.0738	-0.144	-0.116	-0.277**
	(0.119)	(0.124)	(0.124)	(0.138)
Equality of Hindu & Muslim Coefficients	$p = 0.09$	$p = 0.03$	$p = 0.01$	$p = 0.04$
IV regressions				
BJP Seat Share × Hindu	0.261	0.192	0.317**	0.275
	(0.160)	(0.158)	(0.152)	(0.187)
BJP Seat Share × Muslim	-0.0560	-0.0345	0.203	-0.192
	(0.258)	(0.260)	(0.218)	(0.343)
Equality of Hindu & Muslim Coefficients	$p = 0.08$	$p = 0.19$	$p = 0.46$	$p = 0.05$
Kleibergen-Paap F-Stat (First Stage)	37.02	37.02	37.02	37.02
Panel B: *Close election threshold = 6%* (N= 1,577,800)				
OLS Regressions				
BJP Seat Share × Hindu	0.0366	-0.0415	0.0161	-0.134*
	(0.0635)	(0.0664)	(0.0671)	(0.0771)
BJP Seat Share × Muslim	-0.0598	-0.190*	-0.114	-0.271**
	(0.0939)	(0.102)	(0.108)	(0.114)
Equality of Hindu & Muslim Coefficients	$p = 0.11$	$p = 0.23$	$p = 0.06$	$p = 0.06$
IV Regressions				
BJP Seat Share × Hindu	-0.0429	-0.0633	0.0357	-0.298*
	(0.114)	(0.124)	(0.117)	(0.156)
BJP Seat Share × Muslim	-0.252	-0.407**	-0.167	-0.713***
	(0.161)	(0.185)	(0.162)	(0.219)
Equality of Hindu & Muslim Coefficients	$p = 0.06$	$p < 0.01$	$p = 0.06$	$p < 0.01$
Kleibergen-Paap F-Stat (First Stage)	84.39	84.39	84.39	84.39

Note: Robust standard errors clustered at the district-by-year level are reported in parentheses. All regressions include household fixed effects and state-by-year fixed effects. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively. Close elections are those with a victory margin of 4% in Panel A and 6% in Panel B.

Table D.3: Effect of BJP Seat Share on Income and Expenditure by Religion: Household level

Instrument = $\frac{\text{Share of close elections BJP won}}{\text{Share of close elections BJP involved}}$	**Total Income**	**Total Expenditure**
	2SLS	**2SLS**
	(1)	(2)
Panel A: Within 2 years after an election		
BJP Seat Share × Hindu	307.262	-419.054
	(1537.562)	(1000.849)
BJP Seat Share × Muslim	541.726	232.081
	(1823.943)	(1061.393)
Equality of Hindu & Muslim Coefficients	$p = 0.86$	$p = 0.47$
No. of Observations	2,744,575	2,74,1016
Mean of Dependent Variable	19,754	12,169
Kleibergen-Paap F-Stat (First Stage)	43.4	44.00
Panel B: Between 3-5 years after an election		
BJP Seat Share × Hindu	2053.319	2361.223**
	(1713.912)	(1009.300)
BJP Seat Share × Muslim	2742.518	1846.750
	(2139.955)	(1152.865)
Equality of Hindu & Muslim Coefficients	$p = 0.62$	$p = 0.39$
No. of Observations	2,976,769	2,982,337
Mean of Dependent Variable	19,915	12,491
Kleibergen-Paap F-Stat (First Stage)	37.14	37.35

Note: All regressions include household fixed effects and state-by-year fixed effects. Robust standard errors clustered at the district-by-year level are reported in parentheses. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table D.4: Effect of BJP Seat Share on Expenditure Categories by Religion: Household level

Instrument = $\frac{\text{Share of close elections BJP won}}{\text{Share of close elections BJP involved}}$	**Food 2SLS**	**Health 2SLS**	**Education 2SLS**	**Luxury 2SLS**
	(1)	(2)	(3)	(4)
BJP Seat Share × Hindu	442.861*	34.775	-31.884	108.242
	(262.336)	(28.998)	(40.596)	(131.634)
BJP Seat Share × Muslim	409.579	-44.072	-45.341	-119.376
	(386.118)	(40.898)	(76.781)	(195.764)
Equality of Hindu & Muslim Coefficients	$p = 0.90$	$p = 0.01$	$p = 0.83$	$p = 0.16$
No. of Observations	5,638,337	5,698,782	5,705,652	5,757,812
Mean of Dependent Variable	5702	278	308	934
Kleibergen-Paap F-Stat (First Stage)	53.13	65.2	65.2	52.3

Note: Robust standard errors clustered at the district-by-year level are reported in parentheses. All regressions include household fixed effects and state-by-year fixed effects. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table D.5: Effect of BJP Seat Share on Income Categories by Religion: Household level

Instrument = $\frac{\text{Share of close elections BJP won}}{\text{Share of close elections BJP involved}}$	**Wage 2SLS**	**Pvt Transfer 2SLS**	**Govt Transfer 2SLS**	**Business 2SLS**
	(1)	(2)	(3)	(4)
BJP Seat Share × Hindu	-273.898	98.756**	10.105	872.019
	(787.409)	(49.393)	(21.803)	(565.091)
BJP Seat Share × Muslim	785.687	290.772	-54.875*	812.767
	(1253.387)	(200.785)	(29.945)	(635.372)
Equality of Hindu & Muslim Coefficients	$p = 0.38$	$p = 0.26$	$p = 0.02$	$p = 0.92$
No. of Observations	5,697,033	5,714,356	5,702,263	5,693,077
Mean of Dependent Variable	15,206	122	117	3026
Kleibergen-Paap F-Stat (First Stage)	52.8	52.9	52.3	52.6

Note: Robust standard errors clustered at the district-by-year level are reported in parentheses. All regressions include household fixed effects and state-by-year fixed effects. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.