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# Banning the bottle, shifting the balance: Impact of Reduced Alcohol Consumption on Women’s Agency

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## Abstract

This paper investigates the relationship between alcohol consumption and women’s empowerment. Drawing on two rounds of nationally representative NFHS data from India and employing a difference-in-differences strategy, we show that a sharp decline in alcohol availability due to an alcohol prohibition policy, led to significant gains in women’s agency. Women report greater decision-making power in health care, large household purchases, family visits, and the use of husbands’ earnings, with effects ranging from 11.2 to 14.2 percentage points. We also find improvements in women’s mobility and reductions in barriers to seeking medical care. A key mechanism appears to be a reduction in husbands’ alcohol consumption, accompanied by a decline in reported control issues. Our results are robust across alternative estimation strategies, outcome definitions, placebo and falsification tests, and alternative treatment-control specifications. Heterogeneity analysis indicates particularly strong effects for rural, poorer, and socially disadvantaged women, underscoring the potential of alcohol control policies to enhance women’s empowerment in patriarchal contexts.

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# 1 Introduction

Women’s agency is widely recognized as a fundamental driver of development outcomes worldwide. [Sen \(1985\)](#) defines agency as “*what a person is free to do and achieve in pursuit of whatever goals or values he or she regards as important*”. Women’s empowerment through agency arises when such freedom is used to question, challenge, or reform patriarchal norms and institutional structures that perpetuate subordination. Extensive evidence links women’s agency to improvements in child health and nutrition, economic productivity and household dynamics ([Bhalotra and Clots-Figueras, 2014](#); [Jones et al., 2019](#); [Bandiera et al., 2020](#); [Duflo, 2012](#); [Kose et al., 2021](#); [Nobles et al., 2010](#); [Mobarok et al., 2021](#); [Anik and Rahman, 2021](#); [Basu and Maitra, 2020](#); [Moeeni, 2021](#)). Yet in many developing economies, including India, their agency remains severely constrained by patriarchal household structures, regressive cultural norms, and economic dependency on men. In response, Indian policymakers have introduced several reforms over recent decades. While some aim to dismantle discriminatory and illegal practices (such as the Dowry Prohibition Act, 1961 and the Hindu Succession (Amendment) Act, 2005), others directly target women’s outcomes by encouraging better working conditions (Equal Remuneration Act, 1976), promoting girls’ education, and delaying marriage ([Kanyashree, 2013](#); [Beti Bachao Beti Padhao, 2015](#)). Although many of these policies have resulted in vast improvements in women’s outcomes ([Das and Sarkhel, 2023](#); [Banerjee and Sen, 2024](#)), significant gaps remain.

Alcohol use among men presents a particularly under-explored determinant of women’s agency. It alters male behavior in ways that directly and indirectly restrict women’s autonomy. This paper empirically examines how alcohol consumption by husbands affect their wives’ agency measured by their decision-making power, freedom of movement, and ability to seek medical care for themselves. This question is crucial because the household is the primary arena where gender power imbalances manifest, and alcohol typically intensifies these asymmetries.

Alcohol use carries severe financial and social costs. Treating alcohol-related illnesses strains healthcare systems at the macroeconomic level ([Julien et al., 2024](#)), while absenteeism, reduced work efficiency, and premature death diminish overall output ([Rumgay et al., 2023](#); [Thørrisen et al., 2019](#)). These impacts are particularly harmful in low and middle-income nations, where social insurance systems are underdeveloped and health budgets are constrained. Furthermore, male alcohol use imposes substantial second-order cost to households - raising rates of intimate partner violence ([Chakrabarti et al., 2024](#); [Dixit and Mukherjee, 2025](#)), creating volatile consumption patterns ([Banerjee and Duflo, 2007](#)), and cutting spending on children’s education and health ([Snow Jones et al., 1999](#); [Wu et al., 2021](#)). Women disproportionately bear these

costs due to greater psychological distress, financial instability, and care-giving responsibilities (Tempier et al., 2006; Nayak et al., 2010; Parekh et al., 2022). In India, where informal labor is widespread and female labor force participation is low, the economic and social burden of alcohol misuse is crucial, threatening not only individual health but household stability and social cohesion.

To empirically evaluate the impact of reduced male alcohol consumption on women’s intra-household decision-making, we employ a quasi-experimental design leveraging the Bihar Prohibition and Excise Act, implemented on April 1st, 2016. Utilizing two rounds of the National Family Health Survey conducted in 2015-16 (pre-prohibition) and 2019-21 (post-prohibition), we compare women’s empowerment outcomes in Bihar to those in the comparable neighbouring state of Jharkhand in a difference-in-differences framework. Our study is motivated by three critical observations. First, women’s empowerment is pivotal in ensuring sustainable and inclusive development (Achu et al., 2025; Akurugu et al., 2021). Second, while much is known about the effect of alcohol on health and crime-related outcomes, its impact on women’s autonomy and intra-household bargaining remains relatively under-examined. Third, alcohol prohibition provides a unique opportunity to empirically examine how resultant behavioral changes may alter gender dynamics within the household.

Our results are of considerable policy relevance. We find that women’s decision-making power improved, with increases ranging from 11.2 to 14.2 percentage points (pp) in the likelihood of having some say over their own health care, large household purchases, family visits, and the allocation of their husband’s earnings. Our results are robust to alternative definitions of the outcome variables, alternative estimation strategies such as Probit estimation and a Propensity Score Matching (PSM - DID) estimation, alternative definitions of the treatment and control groups as well as falsification analysis. Our baseline results are complemented by improvements in women’s freedom of movement, with the probability of being able to visit a health facility, or travel outside the village rising by almost 4 to 8 pp, respectively. We also document a decline in the barriers to seeking medical care, most notably an 11.5 pp reduction in her needing permission to do so.

To understand the possible channels through which husband’s alcohol consumption may impact a woman’s autonomy, we draw on extensive evidence refuting unitary model of households (Becker, 1974; Becker and Lewis, 1973), in favor of modeling the household as a site of negotiation where major decisions are taken based on individual preferences and relative bargaining power the individual yields within the household (Bobonis, 2009; Browning and Chiappori, 1998; Chiappori, 1988, 1992; Lundberg and Pollak, 1996; McElroy and Horney, 1981; Zingwe

et al., 2023; Bertocchi et al., 2014; Carlsson et al., 2012; Abbink et al., 2020; Mookerjee and Ojha, 2025). Excessive male alcohol use can potentially impact women’s relative bargaining position through changes in behaviour, evolving gender norms and expectations, management of finances, as well as household harmony. On one hand, reduced alcohol consumption may lower intimate partner violence, coercion, and intimidation (Chakrabarti et al., 2024; Dixit and Mukherjee, 2025), improving women’s mental health, sense of security, and scope for a more cooperative household environment. As such, women might be freed from the care-giving burden of their husbands and feel empowered to prioritize their own needs, assert greater control in household decisions, and engage more freely in social and economic life (Tempier et al., 2006; Nayak et al., 2010; Parekh et al., 2022). On the other hand, sobriety could also reassert patriarchal authority in some households or prompt women to voluntarily cede control to maintain household harmony by preserving traditional gender norms, potentially diminishing women’s relative bargaining position.

The net effect, which depends on pre-existing norms, household dynamics, and gendered expectations, is ex-ante ambiguous and merits empirical investigation. In this paper, we consider both possibilities and identify two plausible channels through which alcohol prohibition may have an impact on women’s agency. First, we demonstrate that following the prohibition, there is a reduction in male consumption of alcohol by 6.9 pp, which has been linked to reduced instances of violence and improved household function (Chaudhuri et al., 2024; Dixit and Mukherjee, 2025; Zak et al., 2021). Second, we also provide evidence that the alcohol prohibition led to a mitigation in the number of instances of male controlling behavior by 0.362 points, thus signifying improved relational cooperation and household harmony (Dar et al., 2024).

The rest of the paper proceeds as follows. In Section 2, we provide the institutional framework and detailed background on Bihar’s Alcohol Ban policy. In Section 3, we describe our data and sample creation, illustrate the descriptive statistics, and also present our empirical methodology and identification strategy. In Section 4, we summarize our primary results followed by Section 5, where we extend our analysis to examine the effects on secondary outcomes and incorporate alternative measures of women’s decision-making. In Section 6, we delve into two plausible channels through which the prohibition policy may have impacted women’s agency. Section 7 presents a host of robustness checks to test the sensitivity of our preferred estimates, and Section 8 illustrates interesting heterogeneous impacts of alcohol prohibition on women’s agency by her age, education, household wealth index, geographical location and social group. Finally, in Section 9, we conclude and provide a discussion of the main contributions of the paper.

## 2 Bihar’s Alcohol Ban

The implementation of the alcohol prohibition policy in the state of Bihar is one of the most ambitious governmental initiatives taken by a state government in India’s recent history (Aggarwal et al., 2025). The Bihar Prohibition and Excise Act, announced in late 2015 and implemented on April 1, 2016, aimed to prohibit all kinds of alcohol-related activities, including its consumption, sale, production, and distribution. Alcohol regulation has long been within the jurisdiction of Indian states and exists in multiple other states, such as Gujarat, Kerala, Mizoram and Nagaland, but what differentiates Bihar from the rest was the intensity with which it was implemented and the punishment associated with violations (Prakash, 2016).

Bihar’s rationale for prohibition stemmed from the desire to improve public order and public health, reduce domestic violence and health hazards due to alcoholism, and from the political capital to be gained from large segments of the population adversely affected by alcohol. In the years prior to the ban, Bihar ranked among the top 6 states in India in per capita alcohol consumption (NSSO, 2014), and a significant amount of household resources was spent on alcohol (Chaudhuri et al., 2024). Bihar, being the second most populous state, with a population share of approximately 9% (over 130 million), is also the state with the lowest per-capita GDP. Therefore, the economic rationale in favour of the prohibition was the fact that alcohol posed a significant monetary burden on low-income households.

The Act criminalized not only the sale and production but also the possession and consumption of alcohol. It included provisions for imprisonment ranging from five to ten years, and fines up to INR 1 million ( $\sim$  \$11,660 USD). In extreme cases, such as deaths caused by the consumption of spurious liquor, the Act allowed for capital punishment of manufacturers of spurious liquor. Law enforcement was empowered to raid premises, seize property, and arrest individuals based solely on suspicion. Citizens were encouraged to report violations via a state-managed toll-free number. This high-stakes enforcement mechanism drew praise from some and severe criticism from others who argued that it violated civil liberties. However, two years after the introduction of the ban, the government reduced the severity of punishment for certain cases: first-time offenders could be released on bail, and the confiscation of property due to the presence of alcohol in someone’s house was abolished. Per the Bihar State Crime Records Bureau, 2021, prohibition-related crimes accounted for over 76% of all crimes reported in the state during the period between 2017-2021 (Mishra, 2024).

Before the ban, excise duties on liquor constituted over 12% of Bihar’s internal tax revenue, which was INR 3,142 crore in 2015-16 (PRS, 2024). Following the ban, Bihar’s tax revenue from alcohol took a major hit, reducing it to almost negligible numbers, and resulting in signif-

icant challenges for the state (Kumar and Prakash, 2016). This loss affected the state’s fiscal expenditure, resulting in cuts to infrastructure and social sector spending. Those critical of the policy were concerned that such shortfalls could reduce Bihar’s ability to finance long-term development goals; however, the government maintained the narrative that the societal benefits from reduced alcohol consumption justified the fiscal sacrifice. To circumvent this problem, the government passed the Bihar VAT Amendment Bill, 2016, which increased VAT by 1% and tax on goods not covered by VAT by 0.5%.

Despite these issues, the ban was perceived as successful among several sections of society. People living in rural areas, especially women, praised the government’s initiative and advocated for the continuation of the ban. The positive feedback received primarily focuses on the significant decrease in alcohol consumption by males in the households. Chakrabarti et al. (2024) claim that the ban effectively reduced alcohol consumption, obesity, and intimate partner violence by 2.4, 1.8, and 2.1 million cases, respectively. The state government of Bihar often takes plaudits for the success of the ban, citing the decrease in alcohol consumption and related crimes.

### 3 Empirical framework

#### 3.1 Data

We use two rounds of the National Family Health Survey (NFHS - 4 for 2015-16 and NFHS -5 for 2019-21) for our analysis. The NFHS is conducted by the International Institute for Population Sciences (IIPS) in Mumbai, administered under the Ministry of Health and Family Welfare (MoHFW), Government of India and is a part of the global Demographic Health Survey (DHS) programme.<sup>1</sup> The NFHS provides nationally representative data, with an emphasis on demographics, health, nutrition, and substance use from across India. For our baseline analysis, we use data from the states of Bihar and Jharkhand, and for our robustness analysis, we also include data from the neighbouring states of Madhya Pradesh, Chhattisgarh, Assam and Sikkim. We utilize the Couples module wherein the couples are interviewed for a subset of the households in NFHS-4 and NFHS-5. The couple’s data comprises of one record for every couple, though the respondent is always the woman. It contains data for married couples, or men and women who are cohabiting where both are declared to be married. We first restrict our data to ensure that we have only one couple from each household, and second, we restrict the sample to women who have been married only once, to ensure that we capture woman’s responses about their

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<sup>1</sup>The DHS surveys for all countries are available at <https://dhsprogram.com/>.

union.

*Outcome variables:* Our outcome variables are the woman’s relative decision-making power within a household. The NFHS asks the respondents questions about the decision-making dynamics within a household, regarding *who usually makes decisions about the respondent’s health care, large household purchases, family visits, and how husband’s earnings are spent*. A decision could be made by one of the spouses, jointly, or by someone else. We code each of these variables into binary indicators to capture the woman’s participation in household decisions, viz. her having some say (either joint or sole). Specifically, we code each of these outcomes as taking the value 1 if the woman has some say, and 0 otherwise.

We also include a range of secondary outcome variables pertaining to the woman’s freedom of mobility. The survey also asks the respondents *whether she is usually allowed to go to the market, to the nearby health facility, and outside the village*. We create binary variables for each of these dimensions as taking the value 1 if the woman is allowed to go alone or with someone else, and 0 otherwise. In addition, we also consider questions relating to the woman’s barriers to seeking medical care. The survey questions capture *whether it is problematic for the woman to seek medical care in terms of needing permission, needing money or not wanting to go alone*. We code each of these variables as taking the value 1 if it is a big problem and 0 if it not a (big) problem, reflecting the barriers.

*Selection of controls:* Our set of control variables include information about the household size, the husband’s and wife’s ages, their years of education, a dummy variable indicating the area of residence (rural/urban), dummies for religion (Hindu, Muslim, Christian, Sikh, Buddhist, No religion and Other), indicators for social group (upper/backward). Table 1 shows the mean and standard deviation for all the variables for the two states before and after the prohibition policy. We note that, on average, women in Bihar have lower decision-making power than Jharkhand in 2015-16. Approximately 63 - 66% of women have some say in the decision making in Bihar, versus 82-83% of women in Jharkhand in the pre-ban period of 2015. Over the years, we note a large increase in woman’s participation in decision-making in Bihar, and only a minor increase for Jharkhand. For Bihar, on average, approximately 79-81% of women report more participatory decision-making by 2019-20, whereas 83-84% of women in the state of Jharkhand report more participation in household decisions, which is roughly similar to their baseline levels.



### 3.2 Identification and estimation strategy

Our aim is to empirically determine the causal effect of reduced male alcohol consumption on women’s empowerment, as captured through household decision-making, using the Bihar alcohol ban as a natural experiment. A simple comparison of women’s decision-making power outcomes before and after the Bihar Ban in 2016 would lead to potential endogeneity concerns in estimation, as several unobservable differences may explain the outcomes at the state level. Similar to [Muralidharan and Prakash \(2017\)](#) and [Chakrabarti et al. \(2024\)](#), we use the neighboring state of Jharkhand as a control group to estimate causal effect (see Figure 1). Jharkhand forms a credible control group for Bihar since the two states were part of a unified state of Bihar and were bifurcated administratively only in 2001, following the Bihar Reorganisation Act, 2000. However, the two states are still comparable in terms of social indicators, such as low literacy rate (66.4% in Jharkhand, 61.8% in Bihar against the national average of 74%), low female literacy rate (55.4% in Jharkhand, 53.3% in Bihar against the national average of 65.4%) and high school dropouts rate (35% in Jharkhand, 40% in Bihar against the national average of 17%) as per the Census (2011). Figure 2 shows the difference in consumption of alcohol by the husband (as reported by the wife) for Bihar and Jharkhand over the last three NFHS rounds (NFHS-3 for 2005-06, NFHS-4 for 2015-16 and NFHS-5 for 2019-21). We see that the alcohol consumption fell sharply in Bihar after the introduction of the Ban in 2016.

We conduct a Difference-in-Differences (DID) analysis wherein we compare the change in women’s empowerment outcomes in Bihar to changes in women’s outcomes in Jharkhand before and after the ban. Our identification, therefore, relies on the exogenous state-time variation based on the announcement of the ban in Bihar. We include district fixed effects to address the concern of any time-invariant district-level characteristics that may be correlated with the ban. In addition, we also control for year fixed effects to account for any time-varying characteristics that may impact both the states equally.

$$Y_{idst} = \beta_0 + \beta_1 Bihar_s + \beta_2 Post_t + \beta_3 Bihar_s * Post_t + \beta_4 \mathbb{X}_{idst} + \lambda_d + \epsilon_{idst} \quad (1)$$

The vector of outcome variables,  $Y_{idst}$  for woman  $i$  in district  $d$  in state  $s$  at time  $t$ , includes household decision-making power regarding health, large household purchases, family visits and how the husband’s earnings are spent.  $Bihar$  is a treatment variable that takes the value 1 for the state of Bihar and 0 for the control state of Jharkhand.  $Post$  takes the value 1 for the survey round NFHS-5 (2019-21) and 0 for the survey round NFHS-4 (2015-16).  $\mathbb{X}_{idst}$  is a vector of woman  $i$  and her household-level controls.  $\lambda_d$  captures the district fixed effects and

$\epsilon_{idst}$  denotes the idiosyncratic error term. The standard errors are clustered at the district level.  $\beta_3$  reflects our DID parameter of interest, capturing the causal effect of the ban on women’s agency in Bihar.

### 3.3 Parallel trends

The parallel trends assumption requires that, in the absence of the alcohol ban in Bihar, women’s empowerment outcomes would have evolved in parallel with those in Jharkhand. Since this assumption cannot be tested post the implementation of the ban in 2016, we examine pre-treatment trends as supportive evidence using NFHS-3 and NFHS-4<sup>2</sup>. Figure 3 plots the trends for each of the women’s decision-making-power outcomes. We see that women in Jharkhand seem to have a greater degree of decision making power relative to their counterparts in Bihar. The difference in all measures is either constant over time or has actually widened, with Bihar registering a slower growth than Jharkhand in all cases. We also test the differences in outcomes between Bihar and Jharkhand empirically before the alcohol ban policy was implemented in 2016, in Section 7.5.

## 4 Results

Table 2 presents the results from our baseline linear probability model. Column (1) through (4) present the estimates for the woman having joint or sole decision making power regarding her health care, large household purchases, family visit and how her husband’s earnings are spent, respectively. For all four outcomes, we present the specification with all controls and district fixed effects.<sup>3</sup> From column (1), we note that the ban has led to an increase in the woman having decision-making power in the decisions pertaining to her own health by 13.2 pp. The effect is statistically significant at 1% level. Similarly, we note a positive effect of the ban on women’s say in decisions regarding large household purchases, family visits and husband’s earnings by 11.2 pp, 13.6 pp and 14.2 pp respectively (columns (2) - (4)).<sup>4</sup> The largest gain is in the probability of the woman participating in decisions about how her husband’s earnings are spent. These results are statistically significant at 1% level and highlight important improvements in women’s agency within the household as a result of the ban.

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<sup>2</sup>Bihar interviews were conducted in the year 2015 in NFHS-4, prior to the implementation of the alcohol ban

<sup>3</sup>We also run the naive specification with no controls, and with the full set of controls. We find consistently positive and statistically significant treatment effect on women’s decision making power across all four decisions. We do not present the results in the paper for expositional purposes. The results are available on request.

<sup>4</sup>We also find statistically significant effect on women’s decision-making power on how her own earnings are spent. We do not report these results since the number of observations are lower. The results are available on request.

## 5 Extensions

### 5.1 Women’s freedom of movement and barriers to seeking medical care

Building on our baseline analysis, we extend our investigation to two additional dimensions of women’s agency viz. freedom of mobility, and barriers to seeking medical care. These outcomes capture a woman’s autonomy in navigating public spaces and accessing essential services without barriers being posed at home. Both these dimensions are reflective of household norms around women’s mobility and constraints on their independence.

Table 3 presents the results. Panel (a) records the results for freedom of mobility and Panel (b) for barriers to seeking medical help. As in our baseline, we utilize a linear probability model for our estimation and present the results for our most preferred specification including all controls and fixed effects. In Panel (a), we find a statistically significant positive increase in woman’s mobility for visiting a health facility by 3.9 percentage points. The probability of being allowed to go outside the village also increases 7.9 pp. However, we do not see any effect on women’s ability to go to the market alone or with someone. From Panel (b), we note a statistically significant decline in the barriers women face in seeking medical care. Specifically, we find a fall of 11.5 pp in the probability of women needing permission to seek medical care due to the ban. Together these results suggest that the alcohol ban not only shifts intra-household decision-making but also relaxes broader restrictions on women’s physical autonomy and to some extent, access to medical care, thereby reinforcing the interpretation that reduction in alcohol use has far-reaching implications for women’s empowerment.

### 5.2 Alternative measures of baseline outcomes

Besides, we extend our analysis to three alternative measures of women’s decision-making power within the household in Table 4. First, we construct a binary indicator that takes the value 1 if the woman has sole or joint say in *at least* one of four decisions. We find a statistically significant increase of 9.2 pp in the likelihood of having a say in at least one of these decisions. Second, we consider a stricter binary indicator for whether the woman participates in *all* four decisions. Here, we observe a large and statistically significant increase of 16.4 pp. Lastly, using a continuous measure that counts the total number of decisions (ranging from 0 to 4) in which the woman has some say, we find an increase of 0.523 decisions on average. This corresponds to nearly a 20% increase relative to the pre-ban mean.

## 6 Potential Mechanisms

An unintended but important consequence of the Bihar ban was the rise in illicit liquor trade of alcohol, which resulted in a rise in the price of alcohol (which further exacerbates the household budget constraint) and also the rise of homemade or spurious liquor. Spurious liquor production increased manifold, thereby leading to approximately over 200 deaths till date from the time of implementation of the Act. This makes it imperative to examine whether the ban had any actual impact on liquor consumption. Moreover, alcohol use is widely recognized as a trigger for conflict within households, often through intimate partner violence, intimidation and dominance. As such, we explore husband’s alcohol consumption as a mechanism of our observed impacts since reduced alcohol consumption can ease household tensions and volatility, allowing women to assert greater influence in decisions. In line with this, [Dixit and Mukherjee \(2025\)](#) provide direct evidence of a reduction in IPV following the ban.

While the NFHS provides the self-reports of alcohol consumption by the man, we rely on the wife’s report of her husband’s alcohol use given the concerns about systematic under reporting and measurement error in the man’s own response. Table 5 presents the results. The DID estimate in column (1) shows a statistically significant decline of 6.9 pp in the likelihood that the husband consumes alcohol. This is evidence that the ban was effective in reducing men’s alcohol use, often associated with factors that can limit women’s autonomy. Since household resources are likely no longer diverted toward alcohol, this suggests that women gain greater bargaining power in household decisions. This decline in husbands’ alcohol use provides a clear behavioral channel through which the prohibition enhanced women’s empowerment.

Additionally, we posit that alcohol consumption and women’s empowerment outcomes are closely linked through channels of household cooperation and relational harmony. Sobriety may lead to improved male behavior, reducing conflict, easing the domestic burden on women, and enhancing their autonomy in decision-making and mobility. To further explore this channel, we analyze women’s responses to questions on men’s control issues, such as, whether the husband feels jealous if she talks to other men, accuses her of unfaithfulness, insists on knowing her whereabouts, limits contact with friends and family, or distrusts her with money. We look at the number of such controlling behaviours the woman responds yes to as our outcome variable. From column (2), we find a statistically significant reduction of 0.362 points in the number of control issues reported. This decline suggests a shift in household power dynamics, with reduced male control and improved relational harmony enhancing women’s agency.

## 7 Robustness

We conduct several checks to check the robustness of our baseline results where we consider alternative estimation strategy, falsification analysis and placebo tests, and alternative definitions of the treatment and control groups.

### 7.1 Alternative estimation strategy: Probit estimation

Given that our baseline outcomes are binary in nature, we use Probit estimation as an alternative estimation strategy. Table 6 presents the results. Columns (1) through (4) show the DID results for women’s decisions pertaining to her own health, large household purchases, family visits and how the husband’s earnings are spent, respectively. We present the marginal effects from the Probit estimation under the estimated coefficients.

The results remain qualitatively and quantitatively similar to the baseline. Specifically, from column (1), we find an increase in women’s participation decisions about her own health by 11 pp, large household purchases by 9.1 pp, family visits by 11 pp and about how the husband’s earnings are spent by 12.2 pp in decisions about husband’s earnings, respectively. As in our baseline, we record the largest gain in women’s participation about how the husband’s earnings are spent.

### 7.2 Alternative estimation strategy: PSM-DID estimation

In Figure 3, we see that women in Jharkhand traditionally have better agency than their counterparts in Bihar. While our baseline results suggest a marked improvement in women’s empowerment following the ban in Bihar, we further address this concern using a Propensity Score Matching (PSM) with our DID estimation, to ensure balance in the observed characteristics of the women in both the states. Our control variables are women’s age, husband’s age, their years of education, religion, caste, wealth index, whether the household is located in a rural area and the size of the household. Similar to [Dixit and Mukherjee \(2025\)](#), we match the women in Bihar before the alcohol ban was imposed, with women from the other three groups - post Ban Bihar and both sets of Jharkhand, to generate the propensity score of each observation being included in the ‘treated’ group. These weights, based on propensity score distance, are then used in the DID estimation.

Table 7 presents our PSM-DID estimates. The direction and magnitude of our results remain similar to the baseline. From column (1), we find an increase in women’s participation in decisions about her own health by 12.7 pp, large household purchases by 10.7 pp, family visits by 12.6 pp and about how the husband’s earnings are spent by 13.5 pp, respectively.

### 7.3 Random assignment: Falsification analysis

Our baseline DID estimates show a consistently positive and statistically significant effect of the ban on women’s decision making power within the household. However, a possible concern with our baseline estimation could be that the effect is spurious in nature and not necessarily that of the alcohol ban. Therefore, we conduct two tests of random simulation to alleviate this concern and generate confidence in our identification strategy. First, we randomly assign the treatment status to women across the control and the treatment groups. We replicate this process 100 times each for all our outcome variables. Second, we shuffle our outcome variables keeping all other relationships constant and repeat the process 100 times.

Figure 4 plots the t-statistics obtained from repeated simulations where we randomize the treatment status at 10% level of significance for all outcomes, viz. decisions pertaining to health, household purchases, family visits and how husband’s earnings are spent. We note that 92 out of 100 times, we do not find a statistically significant effect of randomly assigning the treatment and control states to women for health decisions. Similarly, 89 out of 100 times we do not find statistically significant effect of randomly assigning the the treatment for decisions pertaining to houshold purchases, family visits, and how husband’s earnings are spent. Figure 5 plots the t-statistics obtained from the repeated simulations of randomizing the outcome variables. We note that we are unable to reject the null that the alcohol ban treatment effect is equal to zero only 11, 9, 9 and 11 out of 100 times for health decisions, household purchases, family visits and for husband’s earnings respectively.

Thus, these falsification analyses reveal that repeated estimations with random assignments of treatment or outcomes variables do not produce significant results in majority of the simulations. This strengthens our assertion that our original DID specification is not picking up a spurious relation.

### 7.4 Alternative definitions of treatment and control groups

Here, we conduct two sensitivity checks to examine how our results change when we consider alternative definitions of our treatment and control groups.

First, we alter our control group and consider the states of Madhya Pradesh, Chhattisgarh, Assam and Sikkim (MCAS) as a joint control group. This allows us to address concerns of spillover effects of the Bihar Ban in Jharkhand, owing to a long, shared border. The states of MCAS are the closest, non-bordering states of Bihar that did not have an effective alcohol-ban policy in place in any of their districts during the period of our analysis (see Figure 6). Therefore, we estimate equation (1) again with MCAS as our control group, and present these

results in Table 9. We find that changing the control group leads to results similar to our baseline. In columns (1) to (4), we record a statistically significant and positive effect of the ban on alcohol consumption on a woman’s say in all four household decisions by 8, 8.3, 10.2 and 11 pp respectively.

Second, we consider only the interior districts of Bihar as the treatment group and only the interior districts of Jharkhand as the control group. Since state borders are relatively open for movement and free of barriers to people’s movement across the states, there could be a concern about alcohol being smuggled across the state borders, despite all excise and police check points. Thus, we exclude all the districts of Bihar and Jharkhand that share a common border. Absent any cross-border movement of alcohol or consumers, the ban may have a different effect in the interior districts of Bihar. Our expectation is that the ban would be more effective in the interior districts on account of easier enforcement. This results in the exclusion of eight districts of Bihar and ten districts of Jharkhand from the analytical sample.

Table 10 presents the results. Across all outcomes, we note large positive and statistically significant improvement in women’s decision-making power in the interior districts of Bihar. Specifically, there is an 15.6 pp increase in women’s participation in her own healthcare decisions, 12.8 pp increase in large household purchases, 17.1 pp in decisions about family visits; and 17.4 pp increase in decisions regarding husband’s earnings, respectively. The magnitude of effects are indeed stronger for interior districts of Bihar when the control group is interior Jharkhand.

## 7.5 Placebo

We also test the differences in outcomes between Bihar and Jharkhand empirically before the alcohol ban policy was implemented in 2016. We use data from NFHS-3 and NFHS-4 survey rounds and run the baseline regression specification. However, we are unable to control for district fixed effects in this regression since the NFHS-3 does not include district level identifiers. These survey rounds were conducted in 2005-06 and 2015-16, respectively, which is prior to the period when the policy came into place in Bihar and as such, none of the states were treated during this period. To analyze this, we introduce a fake treatment by considering 2015-16 to be the treated period and 2005-06 as the pre-treatment period. For the parallel trend assumption to hold, we should expect the value for the parameter of interest to not be statistically different from zero. Table 8 shows the results for all our main outcomes. The coefficients are insignificant for decisions about large household purchases and how the husband’s earnings are spent. Although the effects are statistically significant for the decisions about health care and family visits, the signs are in the opposite direction, i.e. negative, implying a decrease in women’s empowerment in

Bihar relative to Jharkhand in the period prior to the implementation of the ban. These trends are also evident from Figure 3 and support our argument that the gap between the treatment and control groups was actually widening over time, with Jharkhand doing considerably better than Bihar in most aspects.

## 7.6 Concerns related to other policy changes

There could be concerns related to other similar policy changes implemented around the same time may also improve women’s empowerment leading to our baseline estimates being biased. For instance, the Pradhan Mantri Awaas Yojana - Gramin (PMAY-G) is a rural housing scheme in India introduced to provide pucca houses with basic amenities to all houseless household. The PMAY-G has a specific focus on women by mandating house ownership in the woman’s name, and inclusion of marginalized groups of women, such as those from backward castes. To address the concern that contemporaneous programs like PMAY-G might confound our results, we restrict the analysis to the subpopulation most likely to benefit from PMAY-G, i.e. the rural and backward caste women. Table 11 presents the results.

If PMAY-G were driving the observed improvements in empowerment, we would expect to see a positive effect on women’s asset ownership, especially housing. However, our results show that the empowerment outcomes remain positive and significant in this restricted group. At the same time, the effect on women’s ownership of housing is negative and significant, which is inconsistent with what we would expect if PMAY-G were the primary driver. This pattern suggests that our results are unlikely to be confounded by PMAY-G, and strengthens the interpretation that a reduction in male alcohol consumption itself is responsible for the observed changes in women’s empowerment.

## 8 Sub-sample analysis

To the extent that average effects may mask interesting heterogeneous effects of the treatment, we cut our analytical sample in different ways and examine whether the treatment effects vary across these subsamples. Our subsamples are based on: *women’s education*, *wealth index*, *location of residence*, and *social group*.

Table 12 presents the results. Panel (a) includes the results by women’s age, education and wealth index; and panel (b) by location of residence, and social group, respectively. Across most subsamples, we find positive and statistically significant effects of the ban on women’s decision-making power in the domains of healthcare, household purchases, family visits, and control over how the husband’s earnings are spent. Specifically, we note that both younger and



older women experience significant improvements in decision-making power across all domains. Looking at heterogeneity by education years, we note that our baseline results are primarily driven by improvement in the decision-making power of the less-educated women. The effects are statistically significant for the less-educated women across all domains, although we also find significant effects for more educated women for three out of four decision domains. Moving on to the results by the wealth index, we note that our baseline effects are driven mostly by the women from poorer households. On similar lines, in Panel (b), we find that the our results are largely driven by the women from the rural households and the backward castes, with statistically significant improvements in their participation in household decision-making across all four domains. These results are reflective of the broad consistency of the empowerment effects across diverse demographic and socioeconomic groups in the state.

## 9 Conclusion and Discussion

In this paper, using a difference-in-differences strategy, we exploit Bihar’s alcohol ban as a policy instrument to study how reduced male alcohol consumption affects women’s empowerment. We find compelling evidence that a decline in men’s alcohol consumption due to the ban leads to women having greater participation in household decision-making process. Specifically, the ban significantly increased women’s decision-making by 20% in health related decisions (0.27 standard deviation (sd)), 17% in large household purchases (0.23 sd), roughly 22% in family visits (0.28 sd) and how the husband’s earnings are spent (0.30 sd). In order to place our results in context, we compare them to other recent work examining related outcomes and find our effects are in line with some of these findings. For example, in a recent paper, [Dixit and Mukherjee \(2025\)](#) report a 0.53 sd decline in intimate partner violence as a consequence of the Ban, and [Chaudhuri et al. \(2024\)](#) find that reported violent crimes declined by 0.22 sd. These provide further impetus to our finding of an environment more conducive for women empowerment.

We also find evidence of greater freedom of mobility for women and reduced barriers to seeking medical help. Our effects are robust to altering the definitions of the treatment and control groups, alternative measures of outcome variables, alternative estimation strategies, placebo tests and falsification analysis. We document a decline in men’s alcohol consumption by approximately 19.5%, along with reduced male control issues reported by women as plausible channels of our impacts. Finally, we find interesting heterogeneity in our impacts, with particularly significant effects for poorer women, for those belonging to the backward castes, and those living in rural areas, highlighting the potential of alcohol control in enhancing agency among socially disadvantaged women.

Debates around alcohol prohibition primarily focus on implementation issues and revenue losses, mostly neglecting its gendered impacts. By looking at intra-household decision-making, marital bargaining, and women’s freedom of movement, our study contributes a new dimension to this debate. Our paper demonstrates that improvements in gender equity ought to be an integral part of evaluating the effectiveness of such behavioral regulations. Our study also aims to bridge the boundaries between development economics, gender studies, and public policy by offering a holistic analysis of how a macro-level policy can impact micro-level relationships within a household. While alcohol prohibition is not an easily replicable public policy, and could face considerable public backlash, the paper shows that reduced availability of alcohol works to enhance women’s well-being in largely patriarchal, resource-constrained societies. This could be done through various means such as reducing outlet density, shortening sales hours and greater community mobilization.

Women’s empowerment requires coordinated policy interventions across economic, social, and political domains. Although not a sufficient condition, women’s empowerment is still a necessary condition for the development process. Economically empowered women play a more active role in household decision-making, with greater bargaining power and increased spending on education and development ([Jayachandran and Voena, 2025](#)). Our study demonstrates that reduced alcohol availability in the state of Bihar created enabling conditions that generated measurable improvements in women’s lives. Further work is required by the government to increase women’s labour force participation and social security nets to build on these gains, while ensuring community participation and long-term institutional capacity building to sustain and expand women’s agency.

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Table 1: Summary statistics

	Bihar		Jharkhand	
	Pre-Ban	Post-Ban	Pre-Ban	Post-Ban
<i>Outcomes</i>				
DCW_health	0.663 (0.473)	0.803 (0.398)	0.834 (0.372)	0.844 (0.363)
DCW_HHpurch	0.665 (0.472)	0.788 (0.409)	0.832 (0.374)	0.845 (0.362)
DCW_famvisit	0.628 (0.483)	0.784 (0.412)	0.820 (0.384)	0.841 (0.366)
DCW_h_earn s	0.661 (0.473)	0.815 (0.389)	0.821 (0.383)	0.836 (0.370)
<i>Controls</i>				
Woman's Age	32.627 (8.092)	32.942 (8.229)	31.975 (7.939)	32.995 (8.076)
Husband's Age	37.272 (8.483)	37.538 (8.662)	36.793 (8.406)	37.661 (8.503)
whether Rural HH	0.829 (0.376)	0.866 (0.341)	0.746 (0.435)	0.802 (0.399)
Woman's Years of Education	3.812 (4.865)	4.201 (5.026)	4.827 (5.065)	5.396 (5.141)
Husband's Years of Education	6.361 (5.256)	6.436 (5.257)	6.726 (5.049)	7.074 (5.054)
Household Size	5.771 (2.111)	5.630 (2.073)	5.393 (1.885)	5.022 (1.787)
wealth Index	1.986 (1.177)	2.057 (1.188)	2.132 (1.345)	1.971 (1.226)
<i>Religion</i>				
whether Hindu	0.868 (0.339)	0.867 (0.340)	0.721 (0.448)	0.745 (0.436)
whether Muslim	0.131 (0.338)	0.132 (0.338)	0.118 (0.322)	0.095 (0.293)
whether Sikh	0.000 (0.019)	0.000 (0.021)	0.002 (0.049)	0.002 (0.048)
Belongs to Backward Social Group	0.834 (0.373)	0.844 (0.363)	0.897 (0.304)	0.917 (0.276)



Figure 1: Map showing states of Bihar and Jharkhand



Figure 2: Alcohol Consumption Trends: Bihar vs Jharkhand

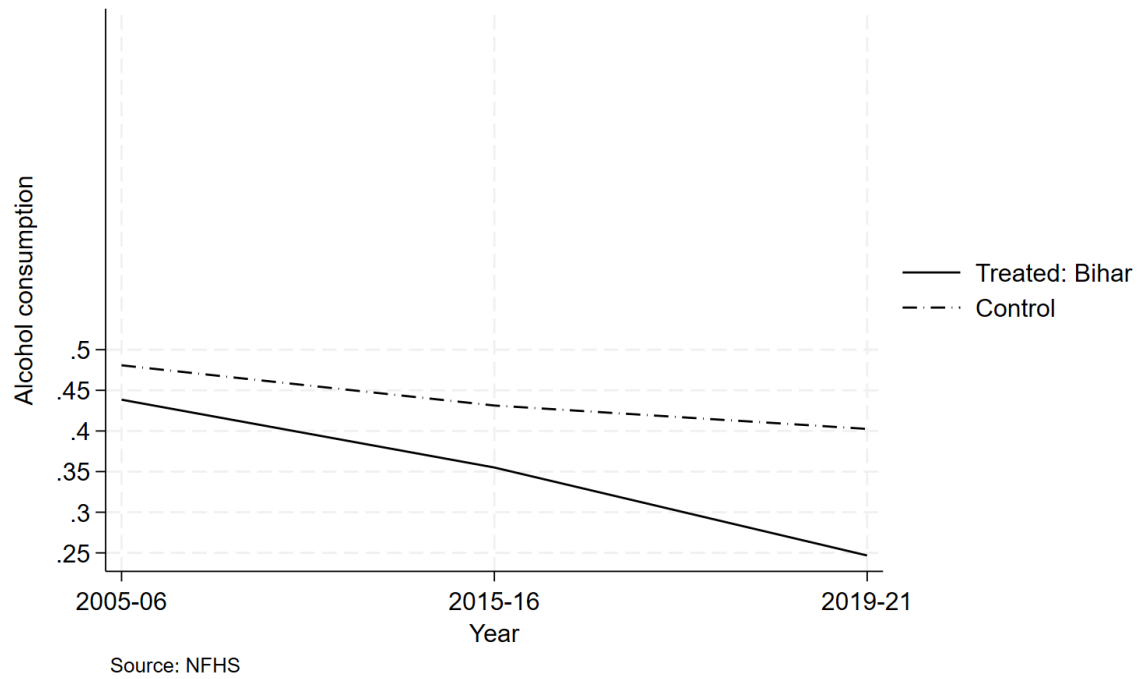


Figure 3: Parallel Trends: Women's Decision Making Power

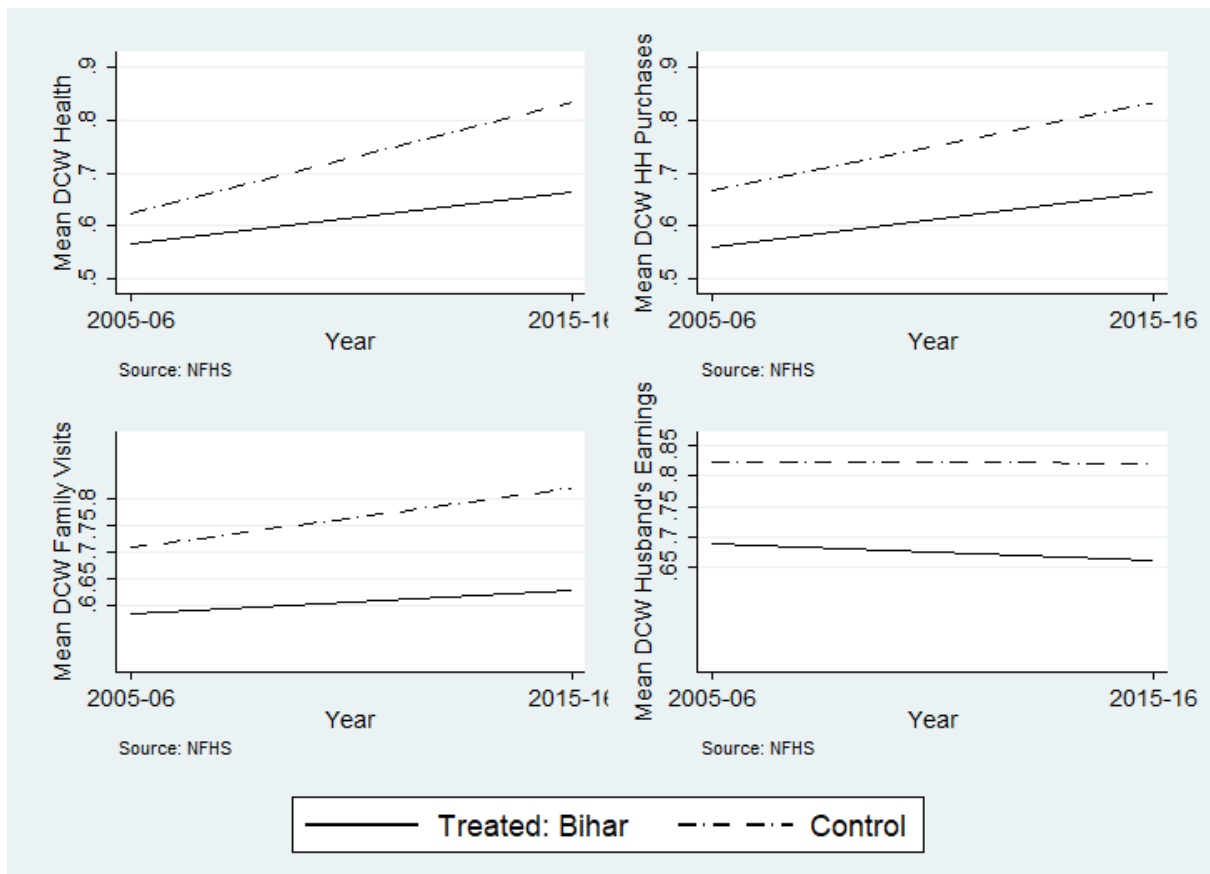


Table 2: Difference-in-difference estimates: Impact of Bihar’s alcohol ban on women’s decision-making power

Outcome Variable	Decision-making power of women (DCW) regarding			
	Own Health expenses	Large HH purchases	Family visits	Husband’s Earnings
	(1)	(2)	(3)	(4)
Treat x Post	0.132*** (0.028)	0.112*** (0.033)	0.136*** (0.038)	0.142*** (0.031)
Observations	8,857	8,857	8,857	8,632
Other Controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes

*Notes:* All columns represent estimates from DID regressions where *Treat* is an indicator for districts belonging to Bihar and *Post* is an indicator for the post-ban period (NFHS 5). The outcome variable in Columns (1) through (4) is a binary indicator of a woman having sole/joint say in decisions regarding her own health expenses, large household purchases, visits to family, and how the husband’s earnings are spent. Additional controls include household size, wealth index, couple’s age and years of education, location in rural/urban, religion, social group, and district fixed effects. Standard errors (in parentheses) are clustered at the district level. \*\*\*, \*\*, and \* represent significance at 1%, 5% and 10%, respectively.

Table 3: Extension- Impact of Bihar’s alcohol ban on women’s freedom of movement and barriers to seeking medical help

Outcome Variables	<i>Panel (a): Freedom of movement</i>			<i>Panel (b): Barriers to seeking medical help</i>		
	Market	Health Facility	Outside Village	Needs Permission	Needs money for treatment	Doesn’t wish to go alone
	(1)	(2)	(3)	(4)	(5)	(6)
Treat x Post	0.028 (0.017)	0.039** (0.017)	0.079*** (0.017)	-0.115*** (0.039)	-0.061 (0.043)	-0.030 (0.038)
Observations	8,857	8,857	8,857	8,857	8,857	8,857
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes

*Notes:* All columns represent estimates from DID regressions where *Treat* is an indicator for districts belonging to Bihar and *Post* is an indicator for the post-ban period (NFHS 5). Panel (a) reports estimates of the policy on a woman’s freedom of movement. The outcome variable in Columns (1)- (3) is a binary indicator taking the value 1 if a woman is allowed to go alone or with someone to the market, a health facility, or outside the village, respectively. Panel (b) reports estimates of the policy on a woman’s barriers to seeking medical help for herself. The outcome variable in Columns (4)- (6) is a binary indicator taking the value 1 if she faces some difficulty in getting permission, getting money for treatment, or since she doesn’t wish to go alone, respectively. Additional controls include household size, wealth index, couple’s age and years of education, location in rural/urban, religion, social group, and district fixed effects. Standard errors (in parentheses) are clustered at the district level. \*\*\*, \*\*, and \* represent significance at 1%, 5% and 10%, respectively.

Table 4: Extension- Alternative outcome measures

Outcome Variable	Decision-making power of women (DCW)		
	At least 1 decision (1)	All decisions (2)	Total number of decisions (3)
Treat x Post	0.092*** (0.026)	0.164*** (0.039)	0.523*** (0.121)
Observations	8,857	8,632	8,857
Other Controls	Yes	Yes	Yes
District FE	Yes	Yes	Yes

*Notes:* All columns represent estimates from DID regressions where *Treat* is an indicator for districts belonging to Bihar and *Post* is an indicator for the post-ban period (NFHS 5). The outcome variable in Columns (1) and (2) is a binary indicator of a woman having sole/joint say in at least one of the four decisions (own health expenses, large household purchases, visits to family, and how the husband's earnings are spent) and on all four decisions respectively. Column (3) reports the estimates of the policy on the total number of decisions in which the woman has some say. Additional controls include household size, wealth index, couple's age and years of education, location in rural/urban, religion, social group, and district fixed effects. Standard errors (in parentheses) are clustered at the district level. \*\*\*, \*\*, and \* represent significance at 1%, 5% and 10%, respectively.

Table 5: Mechanism: Impact of Bihar's alcohol ban on husband's alcohol consumption and controlling behaviour

Outcome Variable	Husband's Alcohol Consumption	Husband's Controlling Behaviour
	(1)	(2)
Treat x Post	-0.069*** (0.026)	-0.362*** (0.125)
Observations	7,349	7,349
Other Controls	Yes	Yes
District FE	Yes	Yes

*Notes:* The table reports estimates from DID regressions where *Treat* is an indicator for districts belonging to Bihar and *Post* is an indicator for the post-ban period (NFHS 5). The outcome variable in Column (1) is a binary indicator of whether the husband drinks alcohol or not, as reported by his wife. In Column (2), the outcome variable is the number of instances where the wife says yes to her husband's controlling behavior, namely, feels jealous if she talks to other men, accuses her of unfaithfulness, insists on knowing her whereabouts, limits contact with friends and family, or distrusts her with money. Additional controls include household size, wealth index, couple's age and years of education, location in rural/urban, religion, social group, and district fixed effects. Standard errors (in parentheses) are clustered at the district level. \*\*\*, \*\*, and \* represent significance at 1%, 5% and 10%, respectively.

Table 6: Robustness- Probit estimates of the impact of Bihar’s alcohol ban on women’s decision-making power

Outcome Variable	Decision-making power of women (DCW) regarding			
	Own Health expenses	Large HH purchases	Family visits	Husband’s Earnings
	(1)	(2)	(3)	(4)
Treat x Post	0.390*** (0.104)	0.319** (0.124)	0.375*** (0.138)	0.428*** (0.113)
<i>Average Marginal Effect</i>	0.110*** (0.029)	0.091** (0.035)	0.110*** (0.040)	0.122*** (0.032)
Observations	8,856	8,856	8,856	8,631
Other Controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes

*Notes:* All columns represent Probit estimates from DID regressions where *Treat* is an indicator for districts belonging to Bihar and *Post* is an indicator for the post-ban period (NFHS 5). The outcome variable in Columns (1) through (4) is a binary indicator of a woman having sole/joint say in decisions regarding her own health expenses, large household purchases, visits to family, and how the husband’s earnings are spent. We also report the average marginal effects of the policy on our four outcomes. Additional controls include household size, wealth index, couple’s age and years of education, location in rural/urban, religion, social group, and district fixed effects. Standard errors (in parentheses) are clustered at the district level. \*\*\*, \*\*, and \* represent significance at 1%, 5% and 10%, respectively.

Table 7: Robustness- PSM-DID Estimates of the impact of Bihar’s alcohol ban on women’s decision-making power

Outcome Variable	Decision-making power of women (DCW) regarding			
	Own Health expenses	Large HH purchases	Family visits	Husband’s Earnings
	(1)	(2)	(3)	(4)
Treat x Post	0.127*** (0.029)	0.107*** (0.033)	0.126*** (0.035)	0.135*** (0.031)
Observations	8,442	8,442	8,442	8,237
R-squared	0.065	0.068	0.081	0.075
Other Controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes

*Notes:* All columns represent PSM-DID estimates of the regressions where *Treat* is an indicator for districts belonging to Bihar and *Post* is an indicator for the post-ban period (NFHS 5). The outcome variable in Columns (1) through (4) is a binary indicator of a woman having sole/joint say in decisions regarding her own health expenses, large household purchases, visits to family, and how the husband’s earnings are spent. Additional controls include household size, wealth index, couple’s age and years of education, location in rural/urban, religion, social group, and district fixed effects. Standard errors (in parentheses) are clustered at the district level. \*\*\*, \*\*, and \* represent significance at 1%, 5% and 10%, respectively.

Figure 4: Falsification Analysis: Randomized Treatment Assignment

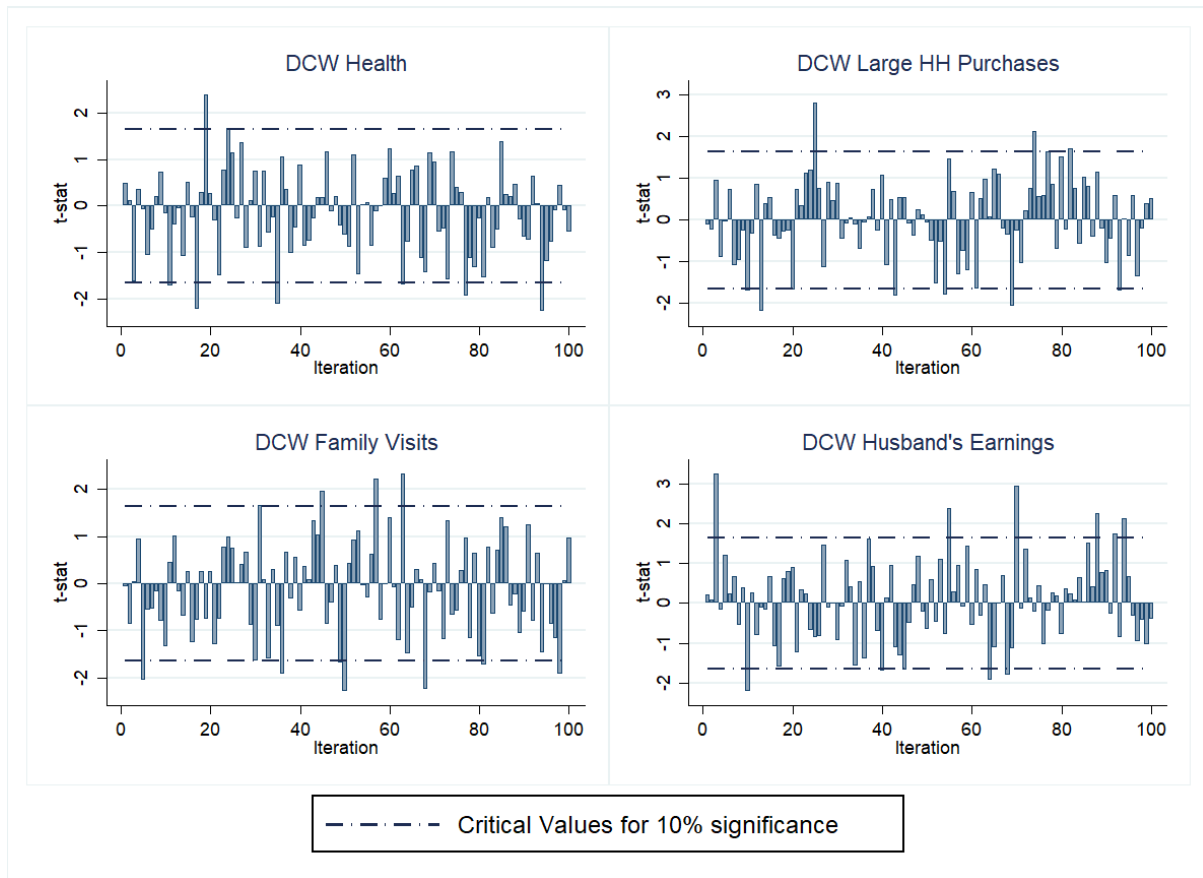


Figure 5: Falsification Analysis: Randomized Outcomes

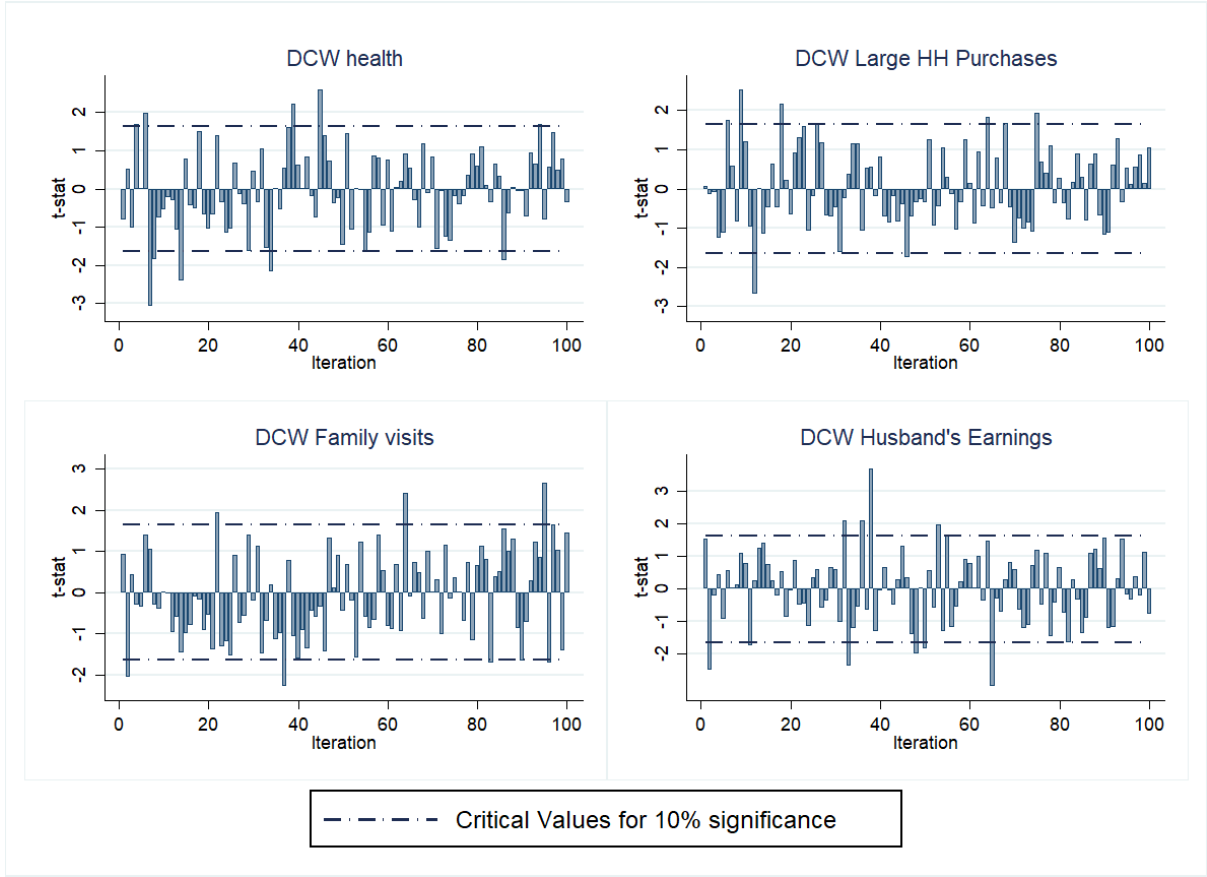
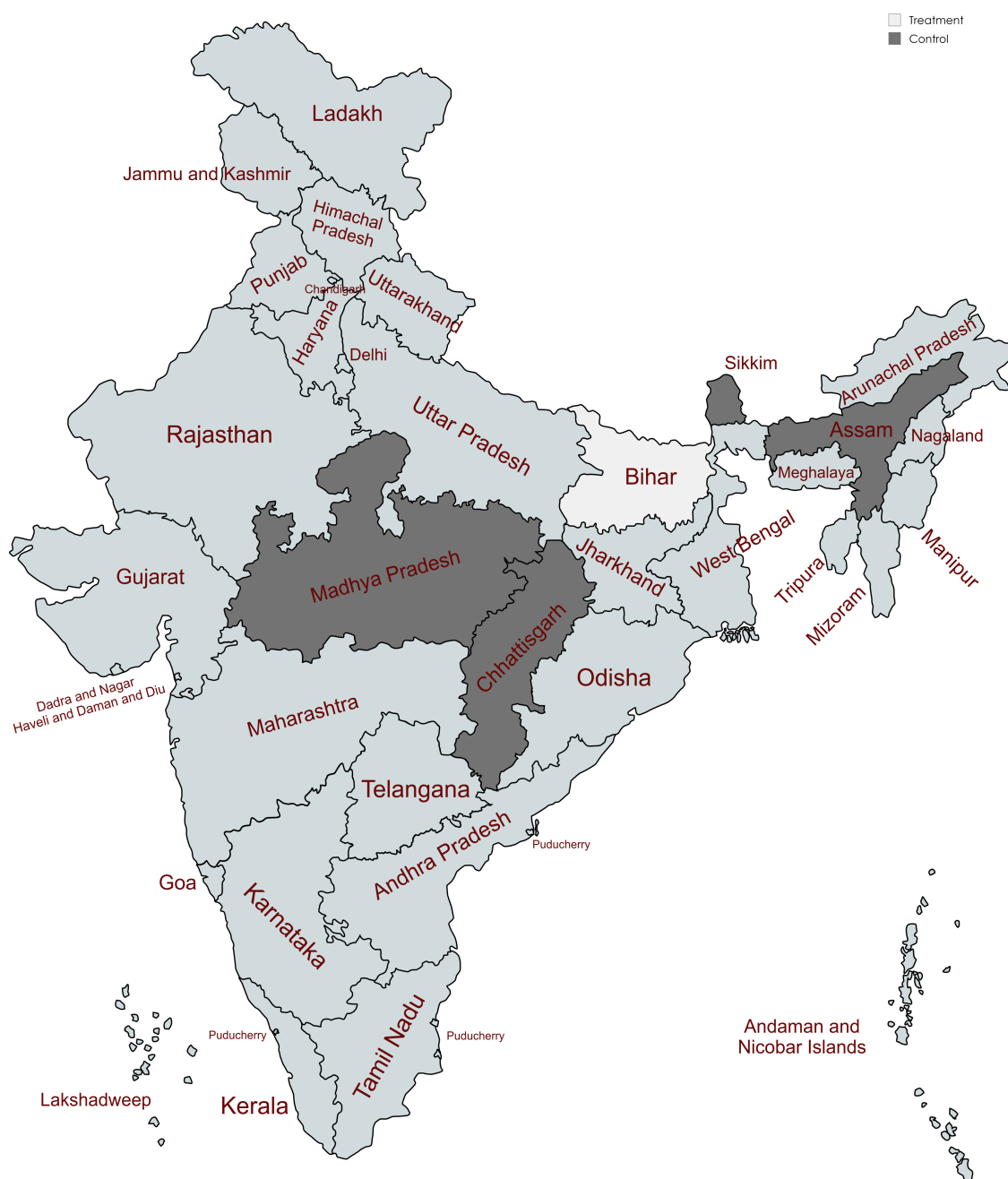


Table 8: Robustness- Placebo estimates using NFHS-3 and NFHS-4

Outcome Variable	Decision-making power of women (DCW) regarding			
	Own Health expenses	Large HH purchases	Family visits	Husband's Earnings
	(1)	(2)	(3)	(4)
Treat x Post	-0.111*** (0.033)	-0.043 (0.032)	-0.055* (0.032)	-0.020 (0.029)
Observations	5,897	5,897	5,897	5,732
Other Controls	Yes	Yes	Yes	Yes

*Notes:* All columns represent estimates from DID regressions using NFHS 3 (2005-2006) and NFHS 4 (2015-16) to illustrate placebo effects where *Treat* is an indicator for districts belonging to Bihar and *Post* is an indicator for NFHS 5. The outcome variable in Columns (1) through (4) is a binary indicator of a woman having sole/joint say in decisions regarding her own health expenses, large household purchases, visits to family, and how the husband's earnings are spent. Additional controls include household size, wealth index, couple's age and years of education, location in rural/urban, religion, and social group. We are unable to include district fixed effects since NFHS 3 does not have district identifiers. Standard errors (in parentheses) are clustered at the district level. \*\*\*, \*\*, and \* represent significance at 1%, 5% and 10%, respectively.

Figure 6: Map showing states of Bihar, Madhya Pradesh, Chattisgarh, Assam and Sikkim



Created with mapchart.net



Table 9: Robustness- Alternative control states: Madhya Pradesh, Chhattisgarh, Assam, and Sikkim

Outcome Variable	Decision-making power of women (DCW) regarding			
	Own Health expenses	Large HH purchases	Family visits	Husband's Earnings
	(1)	(2)	(3)	(4)
Treat x Post	0.080*** (0.023)	0.083*** (0.026)	0.102*** (0.027)	0.111*** (0.023)
Observations	21,214	21,214	21,214	20,741
Other Controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes

*Notes:* All columns represent estimates from DID regressions where *Treat* is an indicator for districts belonging to Bihar and *Post* is an indicator for the post-ban period (NFHS 5). Here we denote the closest non-bordering states of Madhya Pradesh, Chhattisgarh, Assam, and Sikkim as the control states. The outcome variable in Columns (1) through (4) is a binary indicator of a woman having sole/joint say in decisions regarding her own health expenses, large household purchases, visits to family, and how the husband's earnings are spent. Additional controls include household size, wealth index, couple's age and years of education, location in rural/urban, religion, social group, and district fixed effects. Standard errors (in parentheses) are clustered at the district level. \*\*\*, \*\*, and \* represent significance at 1%, 5% and 10%, respectively.

Table 10: Robustness- Alternative treatment and control states: Interior districts of Bihar and Jharkhand

Outcome Variable	Decision-making power of women (DCW) regarding			
	Own Health expenses	Large HH purchases	Family visits	Husband's Earnings
	(1)	(2)	(3)	(4)
Treat x Post	0.156*** (0.037)	0.128*** (0.045)	0.171*** (0.050)	0.174*** (0.040)
Observations	6,450	6,450	6,450	6,284
Other Controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes

*Notes:* All columns represent estimates from DID regressions where *Treat* is an indicator for "interior" districts belonging to Bihar and *Post* is an indicator for the post-ban period (NFHS 5). Here we denote the control group to include the "interior/non-bordering" districts of Jharkhand only. The outcome variable in Columns (1) through (4) is a binary indicator of a woman having sole/joint say in decisions regarding her own health expenses, large household purchases, visits to family, and how the husband's earnings are spent. Additional controls include household size, wealth index, couple's age and years of education, location in rural/urban, religion, social group, and district fixed effects. Standard errors (in parentheses) are clustered at the district level. \*\*\*, \*\*, and \* represent significance at 1%, 5% and 10%, respectively.

Table 11: Robustness- Correlations with Pradhan Mantri Awaas Yojana

Outcome Variable	Decision-making power of women (DCW) regarding				
	Own Health expenses	Large HH purchases	Family visits	Husband's Earnings	Women's House Ownership
	(1)	(2)	(3)	(4)	(5)
Treat x Post	0.153*** (0.032)	0.146*** (0.034)	0.146*** (0.034)	0.146*** (0.034)	-0.094** (0.037)
Observations	6,386	6,386	6,386	6,386	6,386
Other Controls	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes

*Notes:* All columns represent estimates from DID regressions where Treat is an indicator for districts belonging to Bihar and Post is an indicator for the post-ban period (NFHS 5). The sample is restricted to rural and backward caste women. The outcome variable in Columns (1) through (4) is a binary indicator of a woman having sole/joint say in decisions regarding her own health expenses, large household purchases, visits to family, and how the husband's earnings are spent. In Column (5), the outcome variable is a binary indicator of a woman's sole/joint house ownership. Additional controls include household size, wealth index, couple's age and years of education, location in rural/urban, religion, social group, and district fixed effects. Standard errors (in parentheses) are clustered at the district level. \*\*\*, \*\*, and \* represent significance at 1%, 5% and 10%, respectively.

Table 12: Subsample Analysis

		<i>Panel (a)</i>			
		Less Educated	More Educated	Rich	Poor
Effect of Treat x Post on:					
DCW Health		0.137*** (0.032)	0.117*** (0.037)	0.102** (0.045)	0.144*** (0.032)
	N	4,852	4,005	2,626	6,231
DCW HH purchases		0.150*** (0.037)	0.059 (0.042)	0.034 (0.049)	0.145*** (0.036)
	N	4,852	4,005	2,626	6,231
DCW Family Visits		0.170*** (0.044)	0.088** (0.043)	0.040 (0.049)	0.177*** (0.041)
	N	4,852	4,005	2,626	6,231
DCW Husband Earnings		0.142*** (0.035)	0.135*** (0.042)	0.087* (0.045)	0.159*** (0.034)
	N	4,740	3,892	2,561	6,071
		<i>Panel (b)</i>			
		Urban	Rural	Upper Caste	Backward Caste
Effect of Treat x Post on:					
DCW Health		0.128* (0.065)	0.136*** (0.029)	0.036 (0.060)	0.146*** (0.030)
	N	1,643	7,214	1,179	7,678
DCW HH purchases		0.072 (0.064)	0.124*** (0.033)	-0.032 (0.068)	0.128*** (0.034)
	N	1,643	7,214	1,179	7,678
DCW Family Visits		0.116* (0.062)	0.146*** (0.039)	0.059 (0.061)	0.147*** (0.039)
	N	1,643	7,214	1,179	7,678
DCW Husband Earnings		0.110* (0.060)	0.149*** (0.033)	0.093 (0.058)	0.151*** (0.033)
	N	1,611	7,021	1,151	7,481
Other Controls		Yes	Yes	Yes	Yes
District FE		Yes	Yes	Yes	Yes

*Notes:* All columns represent estimates from DID regressions where Treat is an indicator for districts belonging to Bihar and Post is an indicator for the post-ban period (NFHS 5). For expositional purposes, the outcome variables, which are binary indicators of a woman having sole/joint say in decisions regarding her own health expenses, large household purchases, visits to family, and how the husband's earnings are spent, have been reported along the rows. Panel (a) reports estimates of the policy in less vs more educated women and rich vs poor households. Panel (b) reports estimates for urban vs rural locations and upper vs backward castes. All other controls and district fixed effects are included. Standard errors (in parentheses) are clustered at the district level. \*\*\*, \*\*, and \* represent significance at 1%, 5% and 10%, respectively.