College Access and Domestic Violence*

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November 2026

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Abstract

How does college access affect domestic violence? We study this question in the context of a large-scale investment in higher education expansion in India. The program incentivized the establishment of new colleges in areas with relatively low college enrollment. Using multiple sources of data and a regression discontinuity design, we find that college expansion significantly decreased the incidence of domestic violence for all women. The decline was more pronounced for younger women than for older women, suggesting that the impact was driven by cohorts that were more likely to be exposed to the colleges and benefit from them. Additionally, we find that these results can be explained by improved educational outcomes for women, changes in social norms and husbands' attitudes, and occupational choices. Better access to college led women to reject any justification for domestic violence, increased women's participation in household decision-making, and increased ownership of assets, along with improvements in husbands' gender attitudes. We find heterogeneous effects for employment. Husbands were more likely to work than wives; however, both husbands and wives were more likely to work in high-skilled occupations and move away from low-skilled occupations.

Keywords: College access, Domestic violence, Gender norms, Labor market, Spillovers
JEL Codes: I15, I25, J12, J16, J22, O15

*We thank participants in the Applied Reading Group at Universidad Carlos III de Madrid and the University of Rochester for their valuable comments and suggestions. We are grateful to Nishith Prakash, Daniel Rees, Jessica Leight, Judit Vall, Lídia Farré, Juan José Dolado, Priti Kalsi, Laura K. Gee, Warn N. Lekfuangfu, Jesús Fernández-Huertas, Nikita Patial, Md Amzad Hossain, David Slusky and Eduardo Nakasone for their valuable comments and suggestions. Ha Luong gratefully acknowledges financial support from grant 2024/00800/001 funded by the Ramón Areces Foundation. All errors are our own.

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1 Introduction

The uneven spatial distribution of higher education institutions within a country determines who gets to go to college, potentially creating geographic inequality in human capital accumulation (Fu *et al.*, 2022; Wozniak, 2018). To address this, many developing countries have made large-scale investments in higher education infrastructure, establishing new colleges in regions that had previously lacked access (Jia *et al.*, 2025).[1] This has led to a significant growth in the number of colleges within commuting distance, which has particularly been salient for women, especially in countries where social norms and safety concerns have prohibited them from traveling far to attend college (Becker *et al.*, 2010; Jayachandran, 2015).

A large literature has documented positive effects of college on human capital, income, and wages (Card, 1993; Russell *et al.*, 2024), health and mortality (Meara *et al.*, 2008; Currie and Moretti, 2003), as well as the wages of non-college graduates (Moretti, 2004). Improved access to colleges has also been shown to reduce crime (Lance, 2011), increase aspirations among school-age children (Jagnani and Khanna, 2020), and improve women's education, labor, and marriage market outcomes (Elsayed and Shirshikova, 2023; Sekhri *et al.*, 2024; Heath and Jayachandran, 2016). However, in general, the social and economic effects of expanding college access remain poorly understood. And we are only beginning to understand how college access affects social and gender norms and intra-household dynamics.

This paper studies the effects of expanded access to colleges on domestic violence. According to the World Health Organization, nearly one in three women worldwide have experienced domestic violence in their lifetime. India is no exception; the incidence of domestic violence is widespread, with substantial spatial variation within the country and prevalence as high as 48 percent in some states. Domestic violence directly affects women's physical and mental health outcomes that can alter their labor market prospects and welfare distribution within families (Leight and Wilson, 2021; Tauchen *et al.*, 1991). This imposes high social and economic costs on households and society (WHO, 2024). Expanding college access could potentially affect domestic violence through several channels such as education, labor market opportunities, social norms, and intra-household dynamics.

We estimate the effects of access to colleges on domestic violence (DV) and examine the channels underlying these effects using a unique large-scale college construction program implemented in India. In 2008, the Government of India introduced the program to improve the Gross Enrollment Ratio (GER) by providing construction grants to establish new colleges in districts with GER below the national average of 12.4. The government used this sharp eligibility cutoff to allocate funding, and

[1] According to UNESCO, the number of higher education institutions grew by approximately 52% between 2006 and 2018. Most of this growth was concentrated in the Global South; for more details, visit here.

374 districts were eligible under the policy (University Grants Commission, 2009a,b).[2] The program's eligibility rule allows us to estimate the causal effects of expanded access to colleges using a Regression Discontinuity Design (RDD). The credibility of our estimation strategy relies on districts being unable to manipulate their GER around the eligibility cutoff. We find no evidence of such manipulation. The distribution of the running variable is smooth around the cutoff, predetermined district characteristics are balanced across the threshold, and we find no evidence of other discontinuities at the eligibility cutoff, which support the validity of our research design.

Using an RDD, we find that access to colleges significantly reduced domestic violence. We first examine the impact on violence reported in the last 12 months and find a 5.2 percentage point decline in any violence, which is equivalent to a 19 percent decline relative to the mean. When we separate the results by violence type, we find a 4.7 percentage point decline in physical violence experienced, equivalent to a 19 percent decline relative to the mean, and a 3.5 percentage point decline in emotional violence, equivalent to a 32 percent decline relative to the mean. Next, we examine the effect of college access on the sample of women who reported experiencing domestic violence ever in their lifetime. We find that the effect size attenuates but remains statistically significant. Specifically, we find a 4.2 percentage point decline in any violence ever reported, which is equivalent to a 13 percent decline relative to the mean. We find a similar pattern for ever-reported physical violence and emotional violence. In both cases, the effect size attenuates compared to women reporting violence experienced in the last 12 months but remains statistically significant. We further explore the heterogeneity in effects on domestic violence by age cohort and find that the effect is concentrated among younger women, who were more likely to be exposed to the program than older women. For older women, the estimated effects are negative but imprecisely estimated for any type of violence and physical violence, while the reduction in emotional violence is statistically significant.

Next, we use administrative data from police records collected and maintained by the National Crime Records Bureau (NCRB) to estimate the effects of college access on extreme cases of violence reported to the police. For this analysis, to match the outcomes related to domestic abuse, we picked police cases registered under four categories: (1) insults to women's modesty, (2) the Domestic Violence Act, (3) the Dowry Prohibition Act, and (4) cases registered for cruelty by husbands and their relatives. Using district-level data, we find that the program decreased the number of cases registered under the Domestic Violence Act, the Dowry Prohibition Act, and cases registered for cruelty by husbands and their relatives, and had no effect on insults to women's modesty.[3]

[2] Districts with a GER below 12.4 were eligible to receive funding. The GER was calculated using the 2001 Census for the population aged 18–23 (University Grants Commission, 2009a,b).

[3] NFHS is the only data set in India that provides detailed information about domestic violence at the individual level. NCRB collects and maintains records of police cases filed under various codes and acts, aggregated at the district level. Measuring domestic violence is difficult due to widespread under-reporting driven by varying levels of social stigma, especially in India, where minor incidents often go unreported (Koenig *et al.*, 2006; Amaral *et al.*, 2025). We therefore use both the NFHS, where female enumerators privately ask women about their experiences, as well as the NCRB to understand the

To explain our findings, we provide evidence on the mechanisms that could be driving our results. Specifically, we ask whether the effects on the decline in domestic violence could be explained by improved education of couples, empowerment of women and their bargaining power, and labor supply decisions. Conceptually, couples' decisions about labor supply and allocation of resources within the household affect domestic violence and overall welfare (Becker, 1993; Bloch and Rao, 2002). Domestic violence clearly alters the welfare distribution within families (Tauchen and Witte, 1995); however, interventions that empower women economically have produced mixed results. Programs that improve women's economic status may strengthen their outside options, increase control over assets, and reduce exposure to violence within the family. For example, improved inheritance rights (Amaral, 2017), better information within the family (Jensen and Oster, 2009), cash transfers to women (Hidrobo and Fernald, 2013), education (Akyol and Kırdar, 2022), and improved economic opportunities (Chin, 2012) have been shown to reduce domestic violence.

Changes in economic status and control over assets can also increase violence through "male backlash", when men perceive a threat to their traditional authority in rigid patriarchal societies (Erten and Keskin, 2018; Anderberg *et al.*, 2016). Emerging literature has documented evidence of "male backlash" across several country contexts, where increases in women's income control and education have been found to increase the incidence of domestic violence (Bulte and Lensink, 2019; Erten and Keskin, 2018). Therefore, the effect of increased access to higher education on domestic violence is theoretically ambiguous and depends on whether it shifts traditional gender roles and social norms, changes occupation and income control within the household (Angelucci and Heath, 2020; Bhalotra *et al.*, 2021), and reduces time spent within the home environment (Chin, 2012).

We provide estimates and explanations that point to an increase in women's educational attainment, with changes in norms and husbands' behavior and occupational choices as possible mechanisms. We find a 0.57-year increase in women's educational attainment, which is equivalent to an 8.3 percent increase relative to the mean. This is accompanied by increases in primary school completion, high school completion, and higher education enrollment. For men, the estimates on years of education are positive but not statistically significant, with the exception of high school completion. When we restrict the sample to married couples, we find an increase in education for both the husband and the wife. Among married couples, years of education for wives increased by 0.44 years, or 7.2 percent, from the mean, and for husbands increased by 0.56 years, or 7.3 percent. The increase in educational attainment is accompanied by shifts in existing social norms. Women were less likely to justify violence against themselves, suggesting a change in attitudes toward what is considered acceptable treatment within the household. They also report greater participation in household decision-making, indicating a change in intra-household bargaining power, and greater freedom of mobility, including the ability

effect on extreme cases of violence to provide a more accurate picture of domestic violence in India.

to go outside the household and access village and market spaces. We also find improvements in partners' attitudes and behaviors toward women.

Although education and social norms changed, these changes did not necessarily translate into higher employment for everyone along the extensive margin. We find significant heterogeneity in employment for men and women. Overall, women were less likely to work, while the college expansion did not affect men's employment status. However, among married couples, the probability of having only the husband/partner working was higher, while the probability that both spouses worked declined. When we examine the occupational choices of working couples, we find that husbands moved away from agricultural casual wage work and low- to medium-skilled non-agricultural occupations toward medium- to high-skilled non-agricultural occupations. We also find that wives were more likely to choose medium-skilled occupations and move away from low-skilled occupations. This is consistent with structural transformation and sectoral reallocation due to improved human capital (Porzio *et al.*, 2022).

This paper contributes to three strands of literature. First, we add to the growing literature on human capital and domestic violence. Previous work on human capital and domestic violence has found mixed results (Elsayed and Shirshikova, 2023; Erten and Keskin, 2018). Erten and Keskin (2018) argue that in Turkey, "male backlash" is a prominent channel that increases domestic violence because improved human capital changed who controls the income. However, in general, it is not clear how large the gender income gap must be to elicit male backlash (Bertrand *et al.*, 2015; Bergvall, 2024). We are the first to evaluate the effect of college access on domestic violence in a setting with strict gender norms. We find a significant decline in the incidence of domestic violence, which was accompanied by an increase in education of both men and women, which further empowered women and changed social norms and occupational choices without male backlash.

Second, we contribute to a large literature on women's empowerment and social norms (e.g., see Andalón *et al.* (2014); Bui (2025); Cannonier and Mocan (2018); Duflo (2012); Arteaga (2018); Elsayed and Shirshikova (2023); Doepke and Tertilt (2019); Kountouris (2020); Mocan and Cannonier (2012); Urbina (2022); Zhang and Assaad (2024)). Access to colleges increases educational attainment for both women and men, altering their relative social and economic positions and potentially shaping attitudes toward violence. Moreover, higher levels of education improve the quality of partner matches, thereby affecting within-household dynamics (Kirkebøen *et al.*, 2021). We contribute to this literature by providing causal evidence on the impacts of higher education on women's empowerment and norms. We provide novel evidence on the effect of higher education on social and gender norms that is not well studied in the literature. We find that college access improved not only women's attitudes toward violence and freedom of movement, such as going to the market alone, but also partners' attitudes toward women's freedom, as directly measured in the survey.

Our paper is closely related to Sekhri *et al.* (2024), which studies the same college construction policy and shows that expanded college access improved women's education and employment while reducing the likelihood of child marriage. They use a trend-break approach across cohorts, relying on older cohorts as a comparison group to estimate the effects of the policy on younger cohorts. We complement their work and instead use RDD, which helps us understand the impacts across all cohorts, including both younger and older groups, without relying on older cohorts to identify effects for younger ones (Khanna, 2023).[4] We also differ from Sekhri *et al.* (2024) in our main outcome of interest. While they focus on women's education, empowerment, and child marriage, we study whether expanded college access translates into reductions in domestic violence, an important outcome for women's well-being with substantial social and economic costs (WHO, 2024). We further examine education and empowerment, along with changes in partners' attitudes and behavior and occupational choices, as potential mechanisms through which expanded college access affects domestic violence.

Third, we also contribute to the literature on intra-household decision-making and labor supply (Chiappori, 1988; Chiappori *et al.*, 2009, 2024). Recent literature has examined the effects of increased economic opportunity on labor supply (e.g., Duflo, 2001; Doepke and Tertilt, 2019; Jayachandran, 2020; Porzio *et al.*, 2022). The labor supply within couples reduces the time spent in risky home environments (Chin, 2012), it also changes the traditional gender roles that could potentially increase the risk of domestic violence in settings such as India, where married women are expected to bear household responsibilities (Anukriti *et al.*, Forthcoming; Rubiano Matulevich and Viollaz, 2019; Leibowitz, 1975). Therefore, the labor supply decision of a couple could produce mixed effects on domestic violence. We evaluate the effects of college access on employment and occupational choices and provide new evidence on the occupational sorting of husbands and wives. We find significant heterogeneity in men's and women's employment and occupational choices. Specifically, we find that women were less likely to work than men. However, when we restrict our sample to those who have always lived in the same districts, we find that women are more likely to work seasonally, whereas men are more likely to work year-round. We further evaluate the effects of college access on occupation types and find that husbands and wife work, they sort into higher-skilled occupations and move away from low-skilled occupations. Husbands are also more likely to move away from agriculture, suggesting a broader structural transformation from agricultural to non-agricultural work. These findings suggest that colleges alone do not predict better employment opportunities for wives on the extensive margin, but that households in which both the husband and wife work benefit from accumulated

[4] RDD is particularly appropriate in this setting because the policy clearly stipulates a sharp eligibility cutoff of 12.4 for implementation of the program. The design compares treatment and control districts within a close bandwidth around the cutoff rather than all treatment and control districts. RDD exploits weaker identification assumptions than the trend-break method because it does not rely on assumptions about counterfactual trends across cohorts, but instead requires potential outcomes to vary smoothly at the cutoff. In close bandwidths around the cutoff, RDD provides estimates as if treatment were randomly assigned (Thistlethwaite and Campbell, 1960; Lee and Lemieux, 2010; Cattaneo and Titiunik, 2022).

human capital.

The rest of the paper is organized as follows. We present the background on the program in Section 2. Section 3 presents the data descriptions in detail, and Section 4 presents the empirical frameworks used in the paper, along with robustness tests for the empirical framework. Section 4.1 presents the results on the first stage, i.e., the effect of the program on college construction. We present results on domestic violence in Section 5, and provide mechanisms that explain the negative effects on domestic violence in Section 6. Finally, we conclude in Section 7.

2 Background

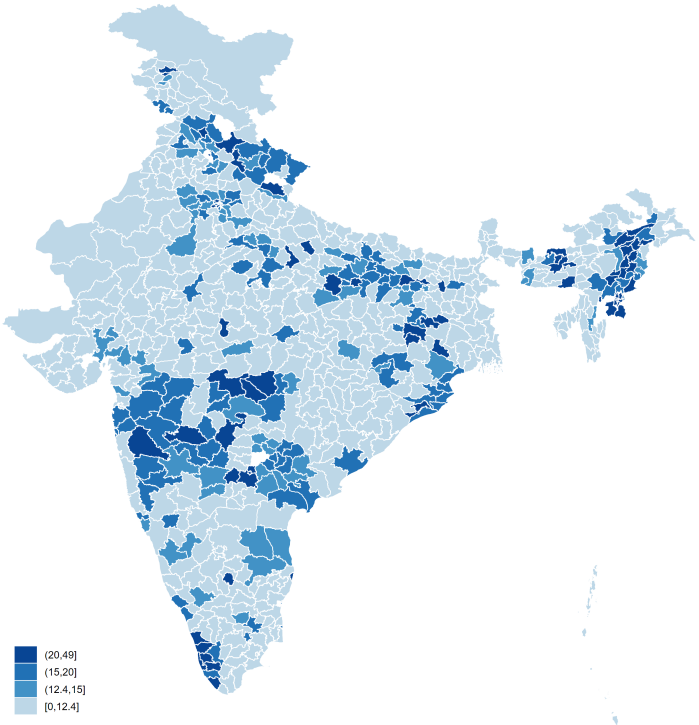
India's higher education sector has witnessed remarkable growth over the past few years, becoming one of the largest education systems globally, with 51,649 Higher Education Institutions (HEIs) and 37.4 million students enrolled as of 2018–19. According to the All India Survey of Higher Education (AISHE), the higher education system in India consisted of 993 universities, 39,931 colleges, and 10,725 stand-alone institutions in 2018–19 (Ministry of Education, 2021). Over time, the Gross Enrollment Ratio improved from 8.1% in 2001 to 26.3% in 2018–19 (Ravi *et al.*, 2019). However, it remains below the world average of 36.7% and much below the average in developed countries. Despite this expansion, access to higher education remained limited, particularly in districts with low enrollment rates and limited availability of higher education institutions. To address this gap, in 2008, the Government of India launched a large-scale policy to expand access to higher education, particularly in districts with low enrollment rates.

The policy introduced a program that incentivized colleges and universities by providing grants to construct new institutions. The program followed a two-stage eligibility framework. First, districts were selected based on whether their Gross Enrollment Ratio (GER) fell below the national average. To implement the policy, the Government of India used the 2001 census to calculate the GER in each district for the population aged 18–23 years. Districts with a GER of 12.4 or below were considered eligible for treatment. Figure 1 shows the district-wise distribution of GER in 2001.

Second, within these eligible districts, only colleges established on or after January 1, 2008, were eligible for funding. Priority was given to hilly and border regions, areas with significant minority or tribal populations, and rural locations that lacked a college within a 10-kilometer radius but had reasonable transport connectivity (Sekhri *et al.*, 2024). Figure 2 presents the changes in the number of colleges over time. Panel (a) of Figure 2 shows the number of colleges in 2001, and Panel (b) shows the number of colleges in 2016.

The policy induced significant growth in the number of colleges. We use data from the All India Survey on Higher Education (AISHE), which provides annual information on higher education institutions, enrollment, faculty, and infrastructure across India. According to AISHE, the total number

Figure 1: Distribution of Gross Enrollment Ratio in 2001 by Districts

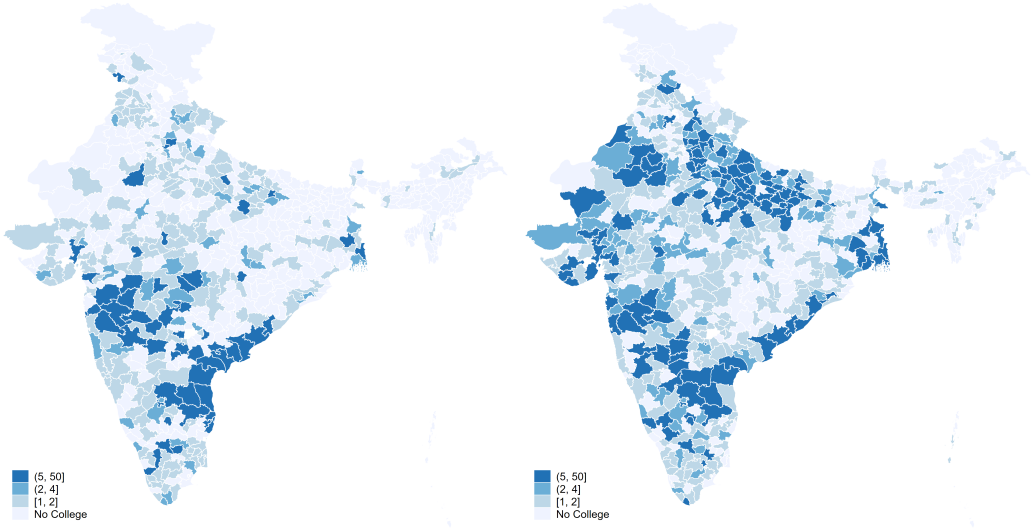


of universities grew from 260 in 2001–02 to 993 in 2018–19, and the number of colleges increased from 11,146 to 39,931 over the same period (Ministry of Education, 2021; Ravi *et al.*, 2019). The growth in the number of new colleges was higher in rural areas than in urban areas (see Appendix Figure A.1). The expansion of higher education institutions was accompanied by a large increase in enrollment, which increased from 8.8 million in 2001–02 to 37.4 million in 2018–19 (Ravi *et al.*, 2019). This increased access to college fueled the demand for higher education, and now 30–45% of young adults attend college (Das *et al.*, 2022). We use AISHE data from 2009–2019 to examine the first-stage effect of the policy, as these years correspond to the period after the implementation of the college expansion program.

The funding for new colleges was a joint effort between central and state governments, with the state governments contributing land, two-thirds of non-recurring costs, and fully covering recurring operational expenses. Affiliating universities played a crucial administrative role in overseeing infrastructure allocation and facilitating partnerships with private colleges. In 2013, the program was absorbed into the Rashtriya Uchchatar Shiksha Abhiyan (RUSA), a centrally sponsored umbrella scheme aimed at improving the quality and equity of higher education across India. Such a large expansion can have significant spillover effects—not only in improving educational outcomes, but also in shaping broader socio-economic and gender norms (Akresh *et al.*, 2023; Elsayed and Shirshikova,

2023; Sekhri *et al.*, 2024).

Figure 2: Evolution of New College Establishments per Year between 2001 and 2016



(a) No. of Colleges in 2001 (b) No. of Colleges in 2016

3 Data

We use the 2015-16 round of the National Family Health Survey (NFHS-4, 2015–16) to examine the impact of college expansion on domestic violence, social norms, education, and husbands' behavior. NFHS-4 is a nationally representative survey and the only source of data in India covering attitudes toward domestic violence, social norms, education, and employment across all Indian states and districts at the time of the survey. NFHS-4 surveyed over 600,000 households, interviewing approximately 699,000 women aged 15–49 and 112,000 men aged 15–54. We use both administered surveys in our analysis. For our analysis, we restrict the sample to women born between 1970 and 1998, i.e., they were at least 18 years old at the time of the survey. Since our main interest is domestic violence, we focus on married women who were at least 18 years old at the time of the survey. A total of 58,822 married women were surveyed for the domestic violence module in NFHS-4.[5]

The NFHS-4 collects detailed information on domestic violence indicators. These variables are categorized into physical violence and emotional violence. We construct a dummy for any violence if women experienced either physical or emotional violence. We also construct three indices following

[5]The most recent round of the survey was conducted in 2019–21. However, we do not use this round because data collection for approximately 54% of the overall NFHS-5 sample overlapped with the onset of the COVID-19 pandemic. Specifically, in the Domestic Violence Module, 34,568 of the 72,320 women (47.8%) were interviewed in 2019, before the pandemic. Since the first COVID-19 case in India was confirmed in January 2020, more than half of the sample was interviewed after the onset of the COVID-19 pandemic, including during the nationwide lockdown, which might potentially affect the outcomes of interest.

Anderson (2008); Erten and Keskin (2018): an any-violence index, a physical-violence index, and an emotional-violence index, computed by averaging the z-scores of the corresponding domestic violence indicators reported in the survey. For example, the physical violence index is constructed using indicator variables on whether women experienced being slapped, having their arm twisted or hair pulled, being pushed, shaken, or having an object thrown at them, being hit with a fist or in another way that caused pain, being kicked, dragged, or beaten, being choked or burned, or being threatened or attacked with a knife, gun, or another weapon, reported being physically forced to have unwanted sexual intercourse, forced to perform other unwanted sexual acts, or coerced through threats into engaging in unwanted sexual acts during the same period. The emotional violence index includes whether the respondent reported being insulted, humiliated, or threatened with harm by her husband. We combine all indicator variables on emotional and physical violence to construct the index for any violence.

A summary of variables is provided in Appendix Table A.1. According to the survey, about 32 percent of women in India experienced some form of domestic violence. Lower-caste women and rural women experienced more violence than women in higher-caste groups and urban areas. The share of women experiencing domestic violence is similar across treatment and control districts. Overall, the data reveal that the share of women who report experiencing physical violence is about 29 percent, and the share who report experiencing emotional violence is about 13 percent. We observe no differences in the prevalence of physical and emotional violence between treatment and control districts.

Besides the outcomes of interest, the survey covers detailed education, household characteristics, direct measures of occupation, and women's autonomy, as well as male and husband attitudes, which we use to tease out potential mechanisms. For women's autonomy, the survey asks whether a woman can go out without telling her husband, and whether she is allowed to go to the market, a health facility, and places outside her village alone. It also documents household decision-making, including who usually decides on the woman's health care, major household purchases, and visiting her family or relatives. On attitudes, both women and men are asked whether wife-beating is justified under a range of specific circumstances, such as if she neglects the children, argues with her husband, or refuses sex, giving us a measure of attitudinal norms around domestic violence independent of the respondent's own experience. NFHS fields a separate male module, including husbands, and a female module. We use both modules for our analysis. A total of 110,301 males were covered in NFHS-4 after we excluded men who are not usual residents of the household, i.e., visitors.

We also use administrative data from the National Crime Records Bureau (NCRB) to complement our main analysis. The NCRB provides district-level information on registered crimes against women, allowing us to examine whether the college expansion program affected reported cases of crimes related to domestic violence. Unlike the NFHS, which captures women's self-reported experiences of

domestic violence through confidential survey questions, NCRB data capture cases that are officially registered with the police. We use NCRB data to examine whether the expansion program affected four categories of registered crimes against women: insult to women's modesty, cruelty by husband or his relatives, cases registered under the Dowry Prohibition Act, and cases registered under the Protection of Women from Domestic Violence Act. These measures provide complementary evidence on the effects of the college expansion program on violence against women.

Finally, we use data from the All India Survey of Higher Education (AISHE) to estimate the first-stage effects of the college expansion program. AISHE is an annual survey conducted by the Ministry of Education, Government of India, that collects comprehensive information on higher education institutions across the country. The survey covers universities, colleges, and other higher education institutions and provides information on institutional characteristics, including the establishment year and the number of institutions operating in each district. We use AISHE data from 2009 to 2019, which corresponds to the period following the implementation of the college expansion program, to examine whether the program increased college availability in treated districts. Using this data, we estimate the impact of the program on the number of newly constructed colleges and the cumulative number of colleges in districts affected by the expansion program.

4 Empirical Strategy

Our main goal is to estimate the causal effects of access to college on domestic violence and other outcomes. To estimate the effects of college access, we use variation induced by the allocation rule that awarded grants for new college construction in districts with a lower gross enrollment ratio than the national average (University Grants Commission, 2009a,b). More specifically, the policy stipulated that only districts with a GER strictly below the national average were eligible for funding. Using this eligibility criterion, we implement a regression discontinuity (RD) design, where the running variable is the district-level GER measured in 2001, and the cutoff is the national average GER. Districts just below the cutoff (treated) and those just above it (control) are expected to be similar in all respects except for the treatment status, allowing us to estimate the causal effect of increased college access. We estimate the following regression equation:

$$Y_{id} = \alpha + \delta_t + \tau \cdot \text{Treated}_d + f(R_d - c) + \gamma X_{id} + \psi_s + \varepsilon_{id} \tag{1}$$

where Y_{id} denotes the outcome of interest for individual i in district d, such as experience of domestic violence, or other individual-level outcomes. Treated_d is a dummy variable that takes on the value 1 if district d had a gross enrollment ratio (GER) below the national average at the time of policy implementation and received a grant for new college construction under the program, and 0 otherwise.

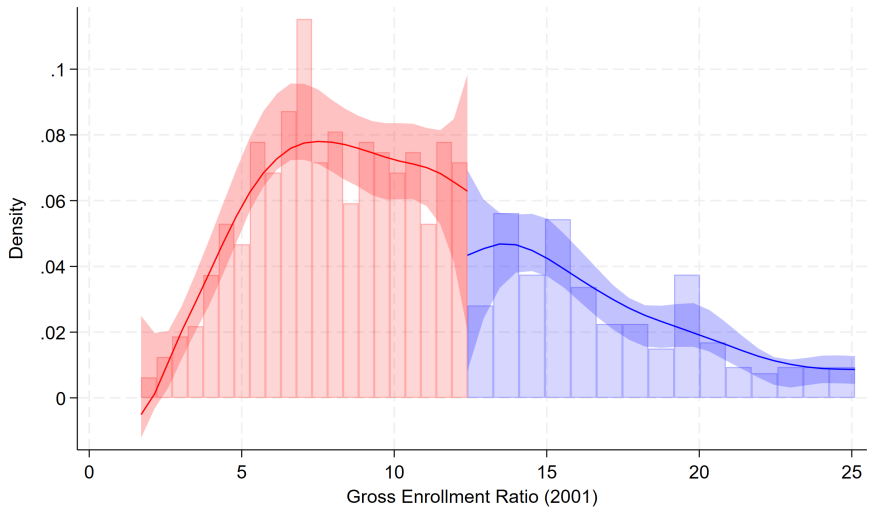
R_d is the running variable—the district-level GER measured in 2001 before the policy—and c denotes the national average GER, which serves as the cutoff for treatment eligibility. The function $f(R_d - c)$ captures a flexible functional form (e.g., linear or polynomial) of the running variable centered at the cutoff and accounts for smooth trends in the outcome variable around the threshold. δ_t represents birth year fixed effects, ψ_s is state fixed effects, X_{id} is a vector of control variables, and ε_{id} denotes the error term. The main coefficient of interest is τ, which identifies the causal effect of access to college on the outcome variables for individuals in districts near the cutoff.

Testing the Validity of the Research Design The credibility of our estimation strategy hinges on the assumptions (1) that districts were not able to manipulate the Gross Enrollment Ratio (GER) to affect their eligibility for the college expansion program, and (2) there were no other discontinuities potentially correlated with program implementation. For the validity of assumption (1), we argue that this concern of manipulation of the running variable around the threshold is minimal because the GER was calculated using data from the 2001 Census, well before the introduction of the policy in 2008. This timing makes it unlikely that districts could have strategically altered their GER to select into the program. However, we also formally test whether districts manipulated the eligibility criteria to select into the program using the McCrary (2008) density test. The logic of this test is that if districts had the ability to manipulate their GER values, we would expect to see a discontinuity in the distribution of districts just above the eligibility threshold. To test this, we use `rddensity`, developed by Cattaneo *et al.* (2018, 2020), which implements the test using an optimal bandwidth computed using a data-driven approach. We report an estimation of the density function using the optimal bandwidth in Figure 3. We find no evidence of manipulation around the threshold with a p-value of 0.419.

We also present robustness checks for the manipulation test using alternative kernels and bandwidths in Appendix Table A.2. Panel A of Appendix Table A.2 reports the manipulation test using alternative kernel choices. The estimated test statistics remain similar across different kernels, and we do not find evidence of a discontinuity in the density of the running variable around the cutoff. The p-values range from 0.419 to 0.474, suggesting that we cannot reject the null hypothesis of no manipulation. In Panel B, we examine whether the results are sensitive to alternative bandwidth selection procedures. Across different bandwidth choices, the estimated test statistics remain statistically insignificant, providing further evidence that the density of the running variable is smooth around the cutoff. Finally, Panel C reports results using a higher-order polynomial specification. We continue to find no evidence of manipulation, with a p-value of 0.582.

Next, we test assumption (2) using a series of falsification tests. Specifically, we examine whether predetermined district characteristics exhibit discontinuities around the eligibility cutoff. If districts just above and below the cutoff differ systematically in their pre-treatment characteristics, the RD estimates may capture differences unrelated to the college expansion program. For this analysis, we

Figure 3: McCrary density test



Note: The figure shows the McCrary (2008) test for the running variable. The test is reported using the optimal bandwidth and estimation procedure proposed by Cattaneo *et al.* (2020, 2018). The corresponding point estimates and robustness checks using alternative bandwidths and kernels are reported in Appendix Table A.2.

use district-level data from the 2001 Census and other pre-treatment data sources.

Appendix Table A.3 reports the test for a range of demographic, economic, infrastructure, and geographic characteristics. These variables include population characteristics, public expenditure, education infrastructure, road infrastructure, electricity access, literacy rates, nighttime light intensity, and forest cover. In sum, we find no evidence of discontinuities in any of these predetermined characteristics around the cutoff. After testing the assumptions (1) and (2), we move to estimating the first-stage effect of the policy in the subsequent section.

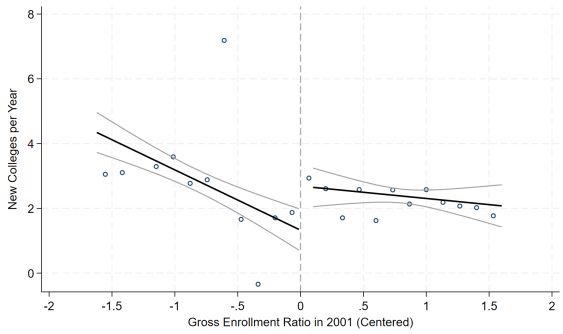
4.1 First-Stage Effects of the Program

We start by estimating the "first-stage" effect of the college expansion program. First, we examine whether the program increased the number of colleges constructed in treated districts. For this analysis, we use data from the All India Survey of Higher Education (AISHE), which is an annual survey conducted by the Ministry of Education, Government of India, that collects information on higher education institutions across the country. The survey covers universities, colleges, and other higher education institutions and provides information on their locations, types, and years of establishment. Our data cover the period 2009–2019, which corresponds to the years following the program's implementation, to construct measures of newly established colleges and cumulative colleges at the district-year level.

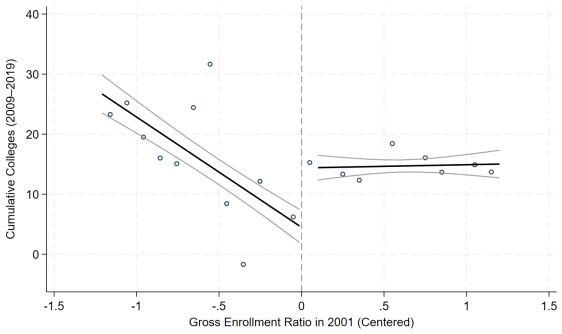
The college expansion program followed a sharp national cutoff based on the Gross Enrollment

Ratio calculated from the 2001 Census to determine treatment districts. Using this allocation rule and a regression discontinuity design, we estimate the program's impact on the number of newly constructed colleges and the cumulative number of colleges using equation 1.

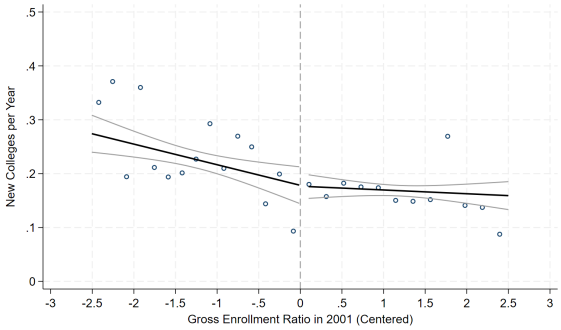
Figure 4: Effects of the College Expansion on the Number of Colleges



(a) Number of new colleges



(b) Cumulative number of colleges



(c) Number of new colleges (pre-2008)

Note: The figures show RD plots illustrating the effect of the program on college construction, using the Gross Enrollment Ratio as the cutoff. The GER is centered at 12.4. Panel (a) shows total number of new colleges between 2009 and 2019. The point estimate is $\tau_{RDD} = 1.210$, with a robust p-value of 0.003 and a 95% confidence interval of $[0.588, 2.363]$. Panel (b) shows cumulative number of colleges between 2009-2019. The point estimate is $\tau_{RDD} = 10.658$, with a robust p-value of 0.000 and a 95% confidence interval of $[8.243, 14.734]$. Panel (c) reports the total number of new colleges in the period before 2008. The figures are generated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022).

We present estimates of the impact of the program on college construction in Figure 4, which reports the results from a Regression Discontinuity Design (RDD) based on optimal bandwidth following an approach proposed by Cattaneo *et al.* (2020). Figures in Panel (a) report estimates for new colleges between 2009 and 2019, cumulative colleges between 2009 and 2019 in Panel (b), and placebo estimates in Panel (c) using pre-program years. Associated results for these figures are reported in Table 1. We find that the program increased the number of colleges constructed per year. More specifically, we find that the college expansion program facilitated the construction of 1.2 additional colleges per

year in treatment districts. This translates to approximately 12 additional colleges per district over the 2009–2019 period. To verify this result, we also estimate the effect on cumulative colleges between 2009 and 2019 and find that the expansion program increased the total number of colleges by approximately 11 colleges per district. We run placebo tests using pre-program data on newly constructed colleges as well as using a random cutoff. We report the results using pre-program data in column 5 of Table 1 (also see Panel (c) of Figure 4) and find no significant effect. In Panel B of Table 1, we report results using a placebo (random) cutoff and find no effect on the number of colleges constructed.

Table 1: Effects of the College Expansion on the Number of Colleges

	New colleges		**Cumulative colleges**		**Placebo**
	2009–2019	2009–2015	2009–2019	2009–2015	pre-2008
	(1)	(2)	(3)	(4)	(5)
Panel A: True cutoff					
RD Estimate	1.210	0.703	10.658	6.534	-0.021
	(0.453)	(0.392)	(1.656)	(1.148)	(0.025)
	[0.001]	[0.009]	[0.000]	[0.000]	[0.458]
Mean Dep Var	2.369	2.445	14.540	9.761	0.173
Bandwidth	1.629	2.085	1.276	1.353	2.559
Effective observations	1210	1001	968	630	34452
Panel B: Placebo (random) cutoff					
RD Estimate	0.097	0.220	0.113	-0.707	0.007
	(0.303)	(0.348)	(1.368)	(1.247)	(0.022)
	[0.641]	[0.520]	[0.960]	[0.470]	[0.789]
Mean Dep Var	2.369	2.445	14.540	9.761	0.173
Bandwidth	2.091	2.334	1.986	1.818	2.667
Effective observations	1991	1554	1914	1127	49104

Notes: Data are from the All India Survey of Higher Education (AISHE). Reported results in Panel A are estimated using the true policy cutoff (12.4), and results in Panel B are estimated using a random cutoff. Each column reports results from a separate regression. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Controls include state FE, Year FE, ruggedness, Elevation, and nightlight. Standard errors are reported in parentheses, and corresponding robust p-values are in brackets underneath.

We also present robustness tests using alternative bandwidths, kernels, and polynomial specifications in Appendix Table A.4. The estimated effect of the program on new college construction remains positive and statistically significant across all specifications. The estimated effect size ranges from 1.1 to 2.1 additional colleges per year, depending on the choice of kernel, polynomial order, and bandwidth. These estimates are similar in magnitude to our baseline estimate of 1.2 additional colleges

per year, suggesting that the first-stage relationship is not sensitive to a particular specification choice.

Panel B reports the corresponding robustness results using cumulative colleges as the outcome. We find a positive and statistically significant effect across all specifications, with estimates ranging from approximately 8 to 33 additional colleges per district. The larger variation in cumulative college estimates reflects differences in bandwidth selection and the accumulation of college construction over time. However, all specifications continue to show a substantial increase in college availability in treated districts. Throughout the paper, we focus on the specification that uses the optimal bandwidth and a linear polynomial as our main specification (Cattaneo *et al.*, 2020; Gelman and Imbens, 2019).

5 Effects on Domestic Violence

We now turn to estimate the impacts of the college expansion program on domestic violence among married women using the National Family Health Survey (NFHS-4) of India. The NFHS collects nationally representative data on women aged 15–49, including a detailed domestic violence module.[6] This module is administered confidentially by trained female enumerators to ensure privacy and improve the accuracy of responses. It covers both emotional violence (e.g., humiliation, insults, and threats of harm) and physical violence (e.g., slapping, burning, choking, and punching).

The NFHS measures domestic violence in two ways: (1) whether a woman has ever experienced domestic violence at any point in her life, and (2) whether a woman has experienced domestic violence in the last 12 months. These outcome measures allow us to capture both long-term prevalence and more recent experiences of domestic violence. We construct three outcomes: any violence, physical violence, and emotional violence. In addition to dummy measures indicating whether a woman experienced each type of violence, we also construct standardized indices that combine information across multiple violence indicators. The main regression results are presented in Table 2, estimated using equation 1. Each regression includes state fixed effects, which absorb unobserved state-level factors, and birth year fixed effects, which account for systematic differences across women born in different years.

Columns (1) and (2) of Table 2 report the estimated effects on any domestic violence using the dummy measure and index measure, respectively. Columns (3) and (4) report estimated effects on physical violence, and Columns (5) and (6) report estimated effects on emotional violence. Panel A reports results using the "ever-reported" measure, while Panel B reports results using the measure of domestic violence experienced in the last 12 months.

In Panel A of Table 2 and corresponding Appendix Figure A.2, we report results using the "ever-reported" measure of domestic violence. We find that women in treated districts were 4.2 percentage points (p.p.) less likely to have ever experienced any domestic violence. The estimated effect is

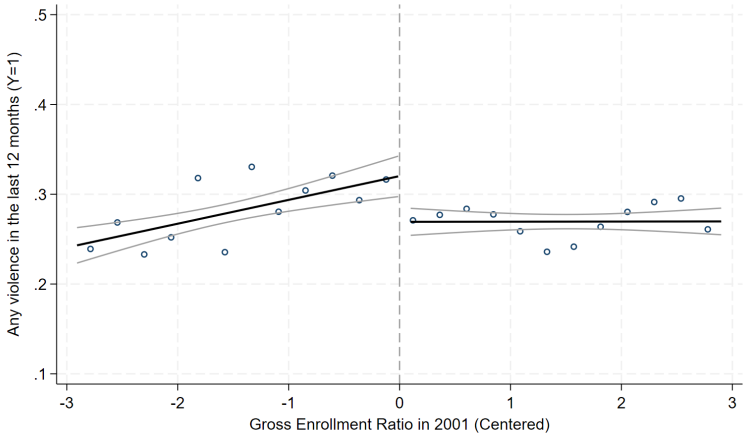
[6] We restrict our analysis to women born between 1970 and 1998.

Table 2: Effects of the College Expansion on Domestic Violence

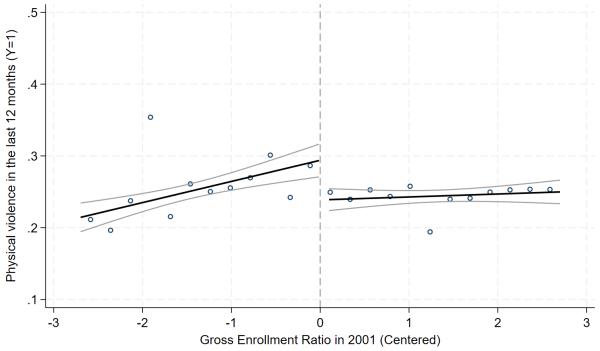
	Any Violence		Physical Violence		Emotional Violence	
	Dummy	Index	Dummy	Index	Dummy	Index
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Reported Ever						
RD Estimate	-0.042	-0.082	-0.037	-0.074	-0.025	-0.091
	(0.019)	(0.040)	(0.018)	(0.039)	(0.015)	(0.045)
	[0.012]	[0.027]	[0.017]	[0.049]	[0.051]	[0.019]
Mean Dep Var	0.317	0.005	0.295	0.004	0.126	0.009
Bandwidth	3.043	3.459	3.142	3.602	2.614	2.850
Effective observations	19693	23088	20718	24779	16520	18697
Panel B: Reported in the last 12 months						
RD Estimate	-0.052	-0.097	-0.047	-0.079	-0.035	-0.128
	(0.019)	(0.038)	(0.019)	(0.039)	(0.015)	(0.052)
	[0.003]	[0.005]	[0.007]	[0.041]	[0.019]	[0.012]
Mean Dep Var	0.272	0.006	0.246	0.006	0.108	0.009
Bandwidth	2.931	4.053	2.730	4.044	2.469	2.414
Effective observations	18215	25950	16276	24050	15241	15000

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Any violence (dummy)* is a dummy equal to 1 if a woman has ever experienced either physical or emotional violence by her husband or partner. *Physical violence (dummy)* is a dummy equal to 1 if a woman has ever been pushed, shaken, slapped, punched, kicked, dragged, strangled, burned, threatened with a weapon, or had her arm twisted or hair pulled by her husband or partner. *Emotional violence (dummy)* is a dummy equal to 1 if a woman has ever been humiliated, threatened with harm, insulted, or made to feel bad by her husband or partner. The corresponding indices are constructed from the underlying binary indicators for each type of violence using inverse covariance weighting following Anderson (2008) and are standardized using the mean and standard deviation of the control group. Thus, the *Any violence (index)* combines all physical and emotional violence indicators, while the *Physical violence (index)* and *Emotional violence (index)* use only the corresponding subsets of indicators. The sample consists of married women aged 18–46. All specifications control for religion and include birth-year and state fixed effects. Each specification uses a linear polynomial and a triangular kernel. *RD Estimate* is estimated using the optimal bandwidth and inference procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses, and robust p-values are reported in brackets.

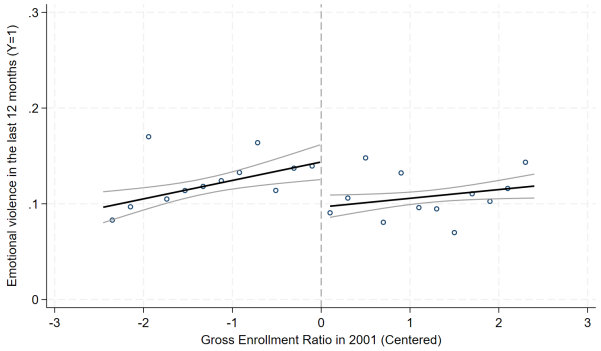
Figure 5: Effects of the College Expansion on Domestic Violence Reported in Last 12 Months



(a) Any Violence



(b) Physical Violence



(c) Emotional Violence

Note: The figures plot domestic violence reported in the last 12 months against the Gross Enrollment Ratio. Panel (a) presents any domestic violence reported in the last 12 months. Panel (b) presents physical violence reported in the last 12 months, while Panel (c) presents emotional violence reported in the last 12 months. The vertical dashed line in each graph represents the cutoff point, and the figures are produced using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). The corresponding estimation results are reported in Panel B of Table 2.

similar when we use the index measure, with a reduction of 0.082 standard deviations (s.d.) in the any domestic violence index. When we examine different types of violence, we find that the likelihood of experiencing physical violence declined by 3.7 percentage points (0.074 s.d.), while emotional violence declined by 2.5 percentage points (0.091 s.d.). These results suggest that college access decreased women's exposure to domestic violence. However, the "ever-reported" measure captures violence experienced over a woman's lifetime and may include incidents that occurred before the implementation of the college expansion program. Therefore, this measure may include experiences unrelated to the program.

In Figure 5 and Panel B of Table 2, we estimate the impact of the college expansion program using the measure of whether a woman experienced domestic violence in the last 12 months. We consider this our main result because this measure more closely captures recent experiences of domestic violence among women exposed to the college expansion program. Although domestic violence experienced in the last 12 months may suffer from under-reporting, we believe it provides a more accurate and timely assessment of the effect of the program compared to the "ever-reported" measure.

Using this definition of domestic violence, we find that the college expansion program decreased the likelihood of experiencing any domestic violence by 5.2 percentage points. The estimated effect is similar when we use the index measure, with a decline of 0.097 standard deviations in the domestic violence index. Furthermore, when we examine different types of violence, we find that women in treated districts were 4.7 percentage points (0.079 s.d.) less likely to experience physical violence and 3.5 percentage points (0.13 s.d.) less likely to experience emotional violence.

5.1 Heterogeneity Analysis

Next, we explore heterogeneity in the effects of the college expansion program on domestic violence by age cohort. We divide the sample into younger and older cohorts. In our sample, the younger cohort consists of women who were less than 30 years old in the 2015–16 survey, and the older cohort consists of women who were 30 years or older. We report results for both measures of domestic violence: whether a woman ever reported experiencing domestic violence and whether she experienced domestic violence in the last 12 months. However, we focus on the measure of domestic violence experienced in the last 12 months because it more closely captures recent experiences among women exposed to the college expansion program. Results using the last 12-month measure are presented in Table 3, and results for the ever-reported measure are presented in Appendix Table A.5.

In Panel A of Table 3, we report results for the younger cohort. We find that younger women who were likely to benefit from the college expansion program were 9.7 percentage points less likely to experience domestic violence. The effect size is almost twice as large as the effect estimated using the full sample of women in Table 2. When we examine different types of violence, we find that the

Table 3: Effects of the College Expansion on Domestic Violence Reported in Last 12 Months, by cohort

	Any Violence		**Physical Violence**		**Emotional Violence**	
	Dummy	Index	Dummy	Index	Dummy	Index
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Younger Cohort						
RD Estimate	-0.097	-0.188	-0.079	-0.178	-0.045	-0.174
	(0.031)	(0.073)	(0.030)	(0.066)	(0.024)	(0.083)
	[0.001]	[0.007]	[0.005]	[0.004]	[0.041]	[0.044]
Mean Dep Var	0.271	0.004	0.246	0.006	0.105	0.002
Bandwidth	2.784	2.784	2.661	3.557	2.311	2.184
Effective observations	6611	6835	6333	8837	5914	5486
Panel B: Older Cohort						
RD Estimate	-0.017	-0.052	-0.016	-0.007	-0.031	-0.103
	(0.022)	(0.051)	(0.021)	(0.053)	(0.018)	(0.055)
	[0.370]	[0.300]	[0.259]	[0.953]	[0.046]	[0.025]
Mean Dep Var	0.272	0.007	0.246	0.007	0.109	0.013
Bandwidth	3.460	3.889	3.598	3.432	2.928	3.458
Effective observations	12939	15105	13289	12374	11398	13490

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Any violence (dummy)* is a dummy equal to 1 if a woman has ever experienced either physical or emotional violence by her husband or partner. *Physical violence (dummy)* is a dummy equal to 1 if a woman has ever been pushed, shaken, slapped, punched, kicked, dragged, strangled, burned, threatened with a weapon, or had her arm twisted or hair pulled by her husband or partner. *Emotional violence (dummy)* is a dummy equal to 1 if a woman has ever been humiliated, threatened with harm, insulted, or made to feel bad by her husband or partner. The corresponding indices are constructed from the underlying binary indicators for each type of violence using inverse covariance weighting following Anderson (2008) and are standardized using the mean and standard deviation of the control group. Thus, the *Any violence (index)* combines all physical and emotional violence indicators, while the *Physical violence (index)* and *Emotional violence (index)* use only the corresponding subsets of indicators. The sample consists of married women between the ages of 18 and 46. We also include religion as a control and birth year and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Each regression includes state fixed effects and birth year fixed effects. Standard errors are reported in parentheses and robust p-values are in brackets.

likelihood of experiencing physical violence declined by 7.9 percentage points, while the likelihood of experiencing emotional violence declined by 4.5 percentage points. The results are similar when we use the index measures, with reductions of 0.188 standard deviations for any violence, 0.178 for physical violence, and 0.174 for emotional violence.

In Panel B of Table 3, we present estimated results for the older cohort. We do not find evidence of a significant reduction in any violence or physical violence among older women in treated districts. Although the signs of the coefficients are negative, the estimates are not precise. For emotional violence, we find a negative and statistically significant effect, though the magnitude is smaller than that estimated for the younger cohort. Overall, the effects of the college expansion program on domestic violence are concentrated among the younger cohort, suggesting that women who were more likely to be exposed to the program benefited more from increased access to college.

We also estimate the effect of the college expansion program on domestic violence using the ever-reported measure by age cohort in Appendix Table A.5. We find that the incidence of any domestic violence decreased by 8.9 percentage points for the younger cohort, and the estimate is precisely estimated. The incidence of physical violence and emotional violence declined by 7.3 percentage points and 3.3 percentage points, respectively. Similar to the results in Table 3, we do not find evidence of reductions in any violence or physical violence among the older cohort. These results are consistent with the idea that the effects of the college expansion program are concentrated among women who were exposed to expanded college access.

Comparing estimates for the younger cohort across both measures — ever-reported and reported in the last 12 months — we find that the effect size is larger with the last-12-month measure of domestic violence than with the ever-reported measure. The results are consistent across different kernels, bandwidths, and polynomials (see Appendix Tables A.6, A.7 and A.8). Further, we also broke down the analysis by rural–urban in Tables A.11 and A.12 as well as for those who lived in the same districts for more than 10 and 20 years in Tables A.9 and A.10. We find a significant decline in domestic violence for both rural and urban districts, and the effects are much larger for women who have lived in the same districts for a longer period of time.

5.2 Evidence from Filed Police Reports

We also use administrative crime data from the National Crime Records Bureau (NCRB) to examine whether the effects of the college expansion program are reflected in officially recorded crimes against women. The NCRB is the primary agency responsible for compiling and publishing crime statistics in India. It collects annual crime data from police departments across all states and union territories based on First Information Reports (FIRs) registered at police stations. These reports are recorded when a cognizable offense is reported to the police, allowing the police to register the case and initiate

an investigation without prior court approval. The NCRB classifies reported offenses according to the Indian Penal Code (IPC) and publishes district-level counts of registered crimes each year. Because the data are based on cases reported to the police, they primarily capture incidents that come to the attention of law enforcement and are likely to understate the true incidence of violence, particularly for offenses such as domestic violence that are often underreported. We focus on four categories of crimes against women: insult to women's modesty, cruelty by husband or his relatives, cases registered under the Dowry Prohibition Act, and cases registered under the Protection of Women from Domestic Violence Act.[7] We select these outcomes because they are the categories most closely related to domestic violence, harassment, and abuse within marriage, allowing us to examine whether the reductions in domestic violence documented using household survey data are also reflected in administrative crime records. We use district-level data from 2013 to 2018 to estimate the impact of the college expansion program on these registered crimes.

Table 4: Effects of the College Expansion on Police Report Filed for Crimes Against Women Under Different Acts and Categories

	Insult to Women's Modesty	**Cruelty by Husband or His Relatives**	**Dowry Prohibition Act**	**Domestic Violence Act**
	(1)	(2)	(3)	(4)
RD Estimate	3.974	-10.709	-22.447	-3.268
	(4.946)	(18.677)	(4.320)	(1.042)
	[0.225]	[0.029]	[0.000]	[0.000]
Mean Dep Var	14.759	164.849	15.548	0.743
Bandwidth	2.758	1.943	1.557	3.797
Effective observations	1268	923	607	1500

Notes: Data are from the National Crime Records Bureau (NCRB) from 2013 to 2018. Each column reports results from a separate regression. *Insult to Women's Modesty* refers to registered cases involving non-physical harassment of women. *Cruelty by husband or his relatives* refers to registered cases of domestic violence, including emotional, mental, and physical abuse inflicted on a married woman by her husband or his relatives. *Dowry Prohibition Act* refers to registered cases under the Dowry Prohibition Act, 1961, involving the giving, taking, demanding, or advertising of dowry, irrespective of whether physical violence occurred. *Domestic Violence Act* refers to registered cases involving violations of protection orders or applications for civil remedies (such as residence orders, monetary relief, or protection orders) under the Protection of Women from Domestic Violence Act, 2005. The unit of observation is the district. All specifications include year and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses, and corresponding robust p-values are in brackets underneath.

[7] The NCRB began reporting cases registered under the Protection of Women from Domestic Violence Act, 2005, as a separate crime category in its *Crime in India* publication starting in 2014, following the adoption of a revised reporting format by the Ministry of Home Affairs. Consequently, our analysis using this outcome is restricted to the period from 2014 onward.

We report the estimates in Table 4. Column (1) reports the effect of the college expansion program on registered cases of insult to women's modesty, Column (2) reports the effect on registered cases of cruelty by husband or his relatives, Column (3) reports the effect on cases registered under the Dowry Prohibition Act, and Column (4) reports the effect on cases registered under the Protection of Women from Domestic Violence Act.

We do not find evidence that the college expansion program affected the number of registered cases of insult to women's modesty. The estimated effect is positive but imprecisely estimated. In contrast, we find a significant reduction in registered cases of cruelty by the husband or his relatives. Districts exposed to the college expansion program experienced approximately 10.7 fewer registered cases than control districts, corresponding to a 6.5 percent decline relative to the sample mean. We also find a large decline of about 22.4 registered cases under the Dowry Prohibition Act and 3.3 fewer cases registered under the Protection of Women from Domestic Violence Act. It is important to note that the NCRB follows the Principal Offense Rule, which categorizes a case involving multiple charges under the most severe criminal section, potentially masking cases registered under the Protection of Women from Domestic Violence Act 2005. Overall, the administrative data are consistent with our household-level evidence, suggesting that the college expansion program decreased violence against women, particularly crimes related to domestic violence and dowry.

One important limitation of the NCRB data is that it captures only crimes reported to the police. Domestic violence and related offenses are widely recognized to be under-reported because of social stigma, limited knowledge of the system, and concerns about family reputation. Underreporting does not necessarily bias our estimates as long as the propensity to report crimes changes smoothly around the eligibility cutoff. However, if the college expansion program also affected reporting behavior—for example, by increasing women's awareness of their legal rights or their willingness to report abuse—then the estimated effects based on administrative records could differ from the true effects on the incidence of violence. In this case, the observed decline in registered cases is particularly informative because improved awareness would be expected to increase reporting, all else equal. Finding a reduction in registered cases despite this possibility suggests that the underlying incidence of domestic violence likely declined.

5.3 Robustness Checks

We examine the robustness of our main results in the Appendix Tables A.6, A.7, A.8, A.9, A.10, A.13, and A.14. We test whether our results are robust to district-level aggregation, length of marital stay in districts, alternative kernels, bandwidth choices, and polynomial orders. In our main results, all estimates are reported using a triangular kernel and a degree-1 polynomial, following the recommendation of Gelman and Imbens (2019).

Appendix Tables A.6 to A.8 report robustness checks for the domestic violence outcomes, using both indicator variables and standardized indices. Across all alternative kernels, polynomials, and bandwidths, the estimated effects remain negative and similar in magnitude. In Table A.6, we report results for any kind of violence and find that the results are robust to alternative bandwidths and kernels. When using the indicator variable, estimated effects of any violence range from 4.2 to 5.1 percentage points. When using the index, the estimated decline in any type of domestic violence ranges from 0.081 to 0.11 standard deviations.

Table A.7 presents the estimated effects on any type of domestic violence by age cohorts. Similar to our main findings, the effects are stronger for the younger cohort across all alternative bandwidths, kernels, and polynomials, and smaller for the older cohort. This holds whether we use an indicator variable or an index of domestic violence. Finally, we present the robustness of our main results for physical violence and emotional violence in Table A.8. The results reported are consistent with our main findings, suggesting that the main results are not driven by the choice of polynomial, bandwidths, or kernels.

Next, we also test the robustness of our results based on the tenure of living in the same district after marriage. Marriage migration is very common in India. More than 87 percent of women in India migrate due to marriage; however, roughly 73 percent of women remain within their birth district (Beauchamp *et al.*, 2021; Fulford, 2015). Nonetheless, we present the results in Tables A.9 and A.10, finding that the estimates are consistent with our main findings. In Panel A of Table A.9, we find that the college expansion decreased the likelihood of ever experiencing any violence by 5.5 percentage points and the likelihood of ever experiencing physical violence by 5.3 percentage points. The estimate for emotional violence is smaller and not statistically significant when measured using the binary outcome, although the emotional violence index is marginally significant. The effects are more pronounced when we use a measure of violence experienced in the previous 12 months (Panel B). The expansion decreased the likelihood of experiencing any violence by 5.5 percentage points, physical violence by 5.3 percentage points, and emotional violence by 4.0 percentage points. The corresponding standardized indices are also negative, with the largest decline in emotional violence by 0.15 standard deviations. We further restrict our sample to those women who have lived in the same residence for at least 20 years. The results, reported in Table A.10, are consistent with the main findings. The estimated effects are slightly larger and remain negative across measures of any, physical, and emotional violence, both for violence reported ever and for violence reported in the previous 12 months.

To examine whether our results are sensitive to aggregation, we collapse the data to the district level, though we acknowledge this means losing rich individual-level information. The estimates are presented in Appendix Table A.13. We find that our results with aggregated data are consistent

with our main findings. For the younger cohort, college expansion decreased the number of women reporting any violence by about 5 cases per district, with corresponding declines of about 4 cases for physical violence and 2 to 3 cases for emotional violence. The estimated effects are similar whether violence is measured over the lifetime or in the last 12 months. We find no effects for the older cohort, except for emotional violence, which is consistent with our main results.

Finally, Appendix Table A.14 reports robustness checks using administrative data from the National Crime Records Bureau. We estimate the effects using alternative kernel functions, bandwidth choices, and polynomial orders. The estimated effects remain qualitatively similar across specifications. For registered cases of cruelty by husbands or their relatives, the estimated effects range from a reduction of 49 cases to an increase of 44 cases, although most estimates remain negative. The estimated reduction in cases filed under the Dowry Prohibition Act ranges from 16 to 26 cases, while the estimated reduction in cases registered under the Protection of Women from Domestic Violence Act ranges from 1.3 to 3.8 cases.[8]

6 Mechanisms

In our main results section, we showed that access to colleges decreased the incidence of domestic violence. Our heterogeneity analysis by age cohort shows that these effects are concentrated among younger women, who were more likely to benefit from the college expansion. We do not find significant effects for older women, except for emotional violence.

In this section, we explore the underlying mechanisms that could potentially explain our main results on domestic violence. We find that our results can be explained by increased education levels and improved human capital for both men and women, which further empowered women and changed social norms, including husbands' gender attitudes. These changes did not directly translate into employment gains for everyone. However, we find significant heterogeneity in employment outcomes for women and men. More interestingly, we observe that improved human capital led to changes in the occupations of husband and wife, with both moving from low-skilled to high-skilled occupations, consistent with a structural transformation away from low-productivity toward high-productivity occupations. And finally, we suggest that improvement in the quality of marital matches, through better sorting on education and preferences, led to a lower incidence of domestic violence.

6.1 Education

We estimate the impacts of college expansion on educational attainment for both men and women, and we present the results in Table 5. We use six measures of educational outcomes to capture both

[8]The estimates in Panel A of Appendix Table A.14 are somewhat noisy and sensitive to alternative kernels, bandwidth choices, and polynomial orders.

intensive and extensive margin effects. First, we examine the intensive margin by measuring years of schooling and report results in column (1) of Table 5. Our results suggest that in treatment districts, the college expansion program increased women's educational attainment by 0.565 years relative to the control group. We do not find any effects for men.

Further, we estimate extensive-margin effects by examining whether the program increased completion rates across different educational levels: primary, middle, high, senior secondary school, and higher education. Results for these categories are reported in Columns (2) to (6), respectively. The results in Panel A of Table 5 suggest that the college expansion increased the likelihood of completing primary education by 1 percentage point, middle school by 1.1 percentage points, and high school by 4.2 percentage points in treatment districts. We find that enrollment in senior secondary education decreased by 1.5 percentage points, while enrollment in higher education increased by 1 percentage point. We also present robustness tests using alternative bandwidths, kernels, and polynomial specifications in Appendix Table A.16. The results are consistent across all specifications. Next, we examine the effect of the college expansion on men's education.

Notably, the effect on high school is four times as large as the effect size estimated for higher education enrollment. This pattern suggests strong spillover effects of college access beyond its direct effect on higher education (Jagnani and Khanna, 2020). These spillover effects likely operate through two channels. First, the presence of nearby colleges increases the expected returns to completing lower levels of education, creating incentives for families to invest more in primary and secondary schooling. Second, improved local labor market opportunities for educated workers may increase the option value of education more broadly. The effect on primary to high school can therefore be interpreted as a "motivation effect," since enrollment in higher education requires prior completion of these educational levels.

In Panel B of Table 5, we present estimates of the effect of the college expansion on men's education. We find no significant effects on years of schooling, enrollment, or completion across educational levels in treatment districts. This may be because men generally faced fewer constraints in mobility and access to colleges before the expansion. Men were more likely to travel outside their home districts to attend college and were less constrained by mobility restrictions and social norms. Consequently, the expansion of local colleges may not have substantially decreased the costs of accessing higher education for men. In contrast, women were more likely to face binding constraints related to distance, safety, and social norms, making them the potential marginal beneficiaries of college expansion.

We also examine heterogeneity by marital status, with the results reported in Appendix Table A.15. We find that the college expansion increased married women's educational attainment by 0.44 years. Examining educational levels, we find a 1.8 percentage-point increase in primary school com-

Table 5: Effects of the College Expansion on Women's Educational Attainment

	Years of edu.	**Primary school**	**Middle school**	**High school**	**Senior Sec. school**	**Higher edu.**
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Women						
RD Estimate	0.565	0.010	0.011	0.042	-0.015	0.010
	(0.097)	(0.004)	(0.005)	(0.008)	(0.006)	(0.004)
	[0.000]	[0.015]	[0.016]	[0.000]	[0.000]	[0.000]
Mean Dep Var	6.838	0.127	0.156	0.181	0.128	0.127
Bandwidth	1.514	2.946	2.609	1.292	2.001	3.854
Effective observations	97233	193854	163763	83427	128635	251900
Panel B: Men						
RD Estimate	0.190	0.003	-0.003	0.034	0.000	-0.003
	(0.141)	(0.009)	(0.013)	(0.015)	(0.011)	(0.009)
	[0.130]	[0.800]	[0.532]	[0.009]	[0.807]	[0.750]
Mean Dep Var	8.373	0.126	0.179	0.244	0.159	0.156
Bandwidth	2.813	3.070	2.326	2.277	3.253	4.212
Effective observations	35421	37419	28686	27471	40706	52666

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Years of education* is the total number of years of schooling completed by a woman. *Primary school*, *Middle school*, *Secondary school*, *High school*, and *Senior secondary school* are indicators equal to 1 if a woman's educational attainment corresponds to the respective category, and 0 otherwise. *Higher education* is an indicator equal to 1 if a woman's educational attainment is higher education (including attending or completing college), and 0 otherwise. The sample consists of women between the ages of 18 and 46. We include religion as a control and birth year and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and corresponding robust p-values are in brackets underneath.

pletion, although not precise, and a 2.9 percentage-point increase in higher education enrollment.

The results for partners' education are reported in Panel B of Appendix Table A.15. We find that the college expansion program significantly increased women's partners' educational attainment by 0.56 years. The increase in total years of schooling appears to be driven primarily by higher rates of high school completion. We find no significant effect on partners' higher education enrollment or completion.

6.2 Social Norms and Empowerment

Next, we estimate the impacts of college access on social norms and women's empowerment. Access to colleges affects social norms and women's empowerment by increasing education and improving access to information, thereby shifting attitudes and intra-household bargaining power (Aizer, 2010; Akresh *et al.*, 2023; Bertrand *et al.*, 2015). We present results on a range of empowerment measures, including women's attitudes towards domestic violence, ownership of assets, and participation in household decision-making. These outcomes capture both normative changes and changes in empowerment. We also examine measures of women's autonomy, such as whether a woman requires permission to go out to the market, visit a health facility, or travel outside the village. These indicators directly capture constraints on mobility and agency, which are empowerment indicators. Finally, we present results on husbands' behaviors, which serve as an additional proxy for changes in both social norms and the household's information environment. Changes in husband behavior reflect shifts in gender attitudes or reductions in controlling behavior, driven by increased access to higher education.

6.2.1 Women Empowerment and Autonomy. In Table 6, we present the results for women's empowerment and autonomy across four dimensions: (i) rejection of domestic violence, (ii) asset ownership, (iii) household decision-making, and (iv) freedom of movement. The outcome variables are indices that aggregate multiple related survey questions and are standardized using the control group's mean and standard deviation.

In Column 1 of Table 6, we find that the college expansion program increased women's rejection of domestic violence by 0.087 standard deviations, indicating that women were less likely to justify violence. This index captures whether a woman believes a husband is justified in beating his wife if she goes out without telling him, neglects the children, argues with him, refuses to have sex, or does not cook properly. Examining these outcomes separately, we find a 2.9 percentage point increase in the likelihood that women reject violence when a wife goes out without telling her husband, a 2.5 percentage point increase when she neglects the children, and a 3.1 percentage point increase when she does not cook properly. We find marginally significant effects for refusing to have sex (see Appendix Table A.17).

Table 6: Effects of the College Expansion on Women's Empowerment and Autonomy

	Rejects Violence Index	**Ownership Index**	**Household Decision Index**	**Women's freedom of mobility Index**
	(1)	(2)	(3)	(4)
RD Estimate	0.087	0.111	0.123	0.100
	(0.033)	(0.035)	(0.039)	(0.039)
	[0.001]	[0.002]	[0.000]	[0.002]
Mean Dep Var	-0.048	-0.052	-0.038	-0.014
Bandwidth	2.677	2.405	2.822	1.893
Effective observations	29034	26798	24196	19853

Notes: Data are from NFHS-4. Each column reports results from a separate regression. Outcome variables are indices aggregated across many variables. *Reject Violence Index* captures attitudes toward domestic violence and is constructed from several binary variables, each coded as 1 if a woman disagrees that a husband is justified in hitting or beating his wife under specific circumstances: going out without informing him, neglecting the children, arguing with him, refusing sexual relations, or burning the food. *Ownership Index* reflects financial autonomy and is based on binary variables coded as 1 if a woman owns a house, land, a bank account, or a phone. *Household Decision Index* measures bargaining power within the household and is constructed from binary variables coded as 1 if the woman alone, or jointly with her partner, makes decisions regarding her own health care, major household purchases, visits to family or relatives, or how the husband's earnings are used. *Women's freedom of mobility index* captures women's mobility and autonomy, based on whether they are allowed to go to (i) the market, (ii) health facilities, and (iii) outside their villages. The indices are constructed using inverse covariance weighting following Anderson (2008), and are standardized with the mean and standard deviation of the control group. We include birth year and state fixed effects and also religion as a control. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and robust p-values are in brackets.

Next, we present results on the impact of college expansion on women's ownership index in Column (2). Our results suggest that college expansion increased women's ownership of assets and bank accounts by 0.11 standard deviations. This index captures women's ownership of a house, land, a mobile phone, and a bank account. When we look at each outcome separately in Appendix Table A.17, we find an 8.1 percentage point increase in the likelihood of owning a house, an 8.1 percentage point increase in land ownership, and a 3.2 percentage point increase in mobile phone ownership. We find no statistically significant effect on women's ownership of bank accounts.

The third empowerment measure we consider is household decision-making. An increase in educational attainment and college access improved women's household decision-making by 0.12 standard deviations. When separating the effect by each outcomes, we find a 3.2 percentage points increase in women's participation in decisions about their own healthcare, a 5.8 percentage points increase in decisions regarding major household purchases, a 2.7 percentage points increase in decisions regarding visits to family or relatives, and a 5.3 percentage points increase in decisions regarding the use of their husband's earnings (see Appendix Table A.17).

And finally, we examine the effect on women's freedom to go out and their mobility without their husbands' supervision as an empowerment measure. When examining the effect on the standardized index, we find that the college expansion program increased women's freedom of movement by 0.10 standard deviations. At the disaggregated level, women in treated districts are 2.1 percentage points more likely to report being able to go to the market, 2.5 percentage points more likely to report being able to visit a healthcare center, and 1.3 percentage points more likely to report being able to go outside the village. The fact that women now report greater freedom to go out to market, visit healthcare, or go outside the village indicates that the expansion of colleges may have led to a shift in social norms, since women's mobility has historically been restricted by safety concerns, rigid gender norms, and expectations of male accompaniment, especially in rural India (Jayachandran, 2015).

6.2.2 Husbands' Behavior. We examine the effects of college access on husbands' behavior and attitudes that could affect conflict between husbands and wives. To assess this, we construct a standardized index of husbands' behavior and measure its impact on disaggregated outcomes used to construct the index. We report the results on changes in husbands' behavior in Table 7 and Appendix Figure A.3.

Column 1 of Table 7 presents results on the aggregate index, which is based on individual outcomes capturing how husbands treat their partners, including whether they: (i) are not jealous if their partner talks with other men, (ii) do not accuse their partner of unfaithfulness, (iii) allow their partner to meet female friends, (iv) do not restrict their partner's contact with family, (v) do not insist on always knowing their partner's whereabouts, and (vi) trust their partner with money. The results suggest that, in treated districts, husbands are more likely to trust their partners, grant them

greater freedom, and refrain from restrictive or controlling behaviors, suggesting changes in underlying restrictive social norms. Women who enjoy greater autonomy and whose husbands exhibit less controlling behavior are less exposed to situations of conflict and coercion, resulting in a reduction in domestic violence.

The improvement in husbands' behavior and attitude is consistent with an increase in partners' educational achievement (see Appendix Table A.15). The improvement in partners' education, as well as married women's education, suggests better educational matching between spouses due to college access. This increase in partners' education may, in turn, influence men's attitudes toward women. As men attain more education, their views on gender roles, women's autonomy, and the acceptability of violence within the household may shift. Access to colleges can also expose men to new ideas and peer networks that promote healthier and more egalitarian views of gender relations. These changes in beliefs and behavior within partnerships can contribute to a reduction in the incidence of domestic violence.

Table 7: Effects of the College Expansion on Husband Behavior

	Husband behavior index	**Not jealous partner**	**No infidelity accusations**	**Allow female friends**	**Permit family contact**	**No constant monitoring**	**Trust with money**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
RD Estimate	0.115	0.041	0.028	0.001	0.019	0.082	0.012
	(0.052)	(0.022)	(0.014)	(0.017)	(0.015)	(0.021)	(0.021)
	[0.031]	[0.062]	[0.015]	[0.882]	[0.122]	[0.000]	[0.744]
Mean Dep Var	-0.043	0.747	0.919	0.805	0.855	0.800	0.766
Bandwidth	1.924	2.142	2.156	2.632	2.647	1.641	2.037
Effective observations	12285	14052	14089	16493	16565	10314	12856

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Not jealous partner* equals to 1 if the husband/partner is not jealous when the woman talks with other men. *No infidelity accusations* equals 1 if the husband/partner does not accuse the woman of unfaithfulness. *Allow female friends* equals 1 if the husband/partner permits the woman to meet female friends. *Permit family contact* equals 1 if the husband/partner does not try to limit the woman's contact with family. *No constant monitoring* equals 1 if the husband/partner does not constantly monitor her movements. *Trust with money* equals 1 if the husband/partner trusts the woman with money. *Husband behavior index* is a z-score constructed by combining all binary indicators using inverse covariance weighting following Anderson (2008). The index is standardized with the mean and standard deviation of the control group. All regressions control for religion, birth year, and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and robust p-values are in brackets.

6.3 Employment and Occupational Choices

We now examine how access to colleges affected the employment and occupational outcomes of husbands and wives. Recent literature has emphasized changes in spouses' relative economic opportunities and earnings as important mechanisms underlying domestic violence. For example, Anukriti *et al.* (Forthcoming) shows that increases in women's access to healthcare and control over fertility and family planning decisions in India can generate greater spousal conflict when they conflict with husbands' son preferences. Similarly, Erten and Keskin (2018) studies the impact of school expansion on domestic violence in Turkey and finds that, although school expansion increased women's educational attainment and employment, greater control over income by women generated a "male backlash," leading to an increase in domestic violence. More recently, Bergvall (2024) shows that differences in potential earnings between husbands and wives influence domestic violence, highlighting the role of relative economic opportunities within the household.

We explore this mechanism by examining how access to colleges affected the employment and occupational choices of both husbands and wives. Although the NFHS does not collect information on individual earnings, it reports employment status and occupation for individuals, allowing us to examine changes in labor-market participation and occupational patterns within households. While these measures do not directly capture relative earnings, they provide evidence on whether college expansion altered men's and women's economic opportunities differently. First, we look at changes in couples' employment and occupations. To carry out this analysis, we first construct a sample of married couples and examine employment patterns at the extensive margin in Panel A of Table 8. We then examine the types of occupations in which husbands and wives are employed, conditional on both spouses being employed (Panels B and C of Table 8).

We classify the detailed occupations of both husbands and wives into six broad categories based on the skill and education required for each occupation. Non-agricultural occupations are ranked from very high-skilled jobs, such as managers, scientists, doctors, and engineers, to very low-skilled manual occupations, including blacksmiths, shoemakers, leather goods makers, and similar manual trades. We classify agricultural occupations into two categories: (i) cultivators and unpaid family workers, and (ii) casual agricultural wage laborers.

Estimates in Panel A show that the college expansion did not affect husbands' employment status. In our data, more than 95 percent of husbands are employed, leaving little variation in their employment status. We find that wives were less likely to work. Further, when we decompose employment patterns within couples, we find that couples in which only husbands work became more common, while there was no effect on couples in which only wives work. At the same time, the share of couples in which both partners work declined. These results suggest that although women gained more education and access to colleges, employment decisions within couples depend on bargaining between

partners and the adjustment of social norms regarding who works within a couple (Chiappori, 1992; Chiappori *et al.*, 2024).

Panels B and C examine whether the program also changed the types of occupations in which husbands and wives are employed. For husbands, we find an increase of 3.3 percentage points in medium- to high-skilled occupations and corresponding declines of 3.0 percentage points in low- to medium-skilled occupations and 4.1 percentage points in casual agricultural wage labor. There is no evidence of significant changes in the shares employed in very high-skilled occupations, very low-skilled manual occupations, or agricultural family work. These results suggest that the expansion improved the occupational distribution of employed husbands by shifting them away from lower-skilled and casual agricultural work toward relatively more skilled occupations.

For wives, we find a similar pattern. Women are 5.1 percentage points less likely to be employed in low- to medium-skilled occupations and 2.0 percentage points more likely to work in medium- to high-skilled occupations, although the latter estimate is only marginally significant. We do not find statistically significant changes in agricultural family work or casual agricultural wage labor. In sum, these findings indicate that the college expansion improved the quality of occupations held by both husbands and wives, shifting employment toward relatively more skilled jobs. Moreover, we do not find evidence that women's improved labor market outcomes came at the expense of their husbands' employment prospects.

Next, we examine the employment status of all men and women. The survey records whether individuals worked throughout the year, worked seasonally, and whether they were employed in agricultural or non-agricultural activities. Using this information, we construct an employment indicator equal to one if an individual worked in any of these activities. We restrict our sample in two ways for this analysis. First, we examine the effect using all residents, excluding visitors (see Panel A, Appendix Table A.18). We then further restrict the sample to individuals who have always lived in the same district to minimize selection through marriage migration (Sekhri *et al.*, 2024). This restriction also provides insight into heterogeneity in employment opportunities between individuals with stronger local networks, who have lived in the same district, and those without.

Panel A of Appendix Table A.18 reports the estimates for all women and men in the district. For women, we find a decline in overall employment of 3.8 percentage points, driven primarily by lower participation in non-agricultural employment and seasonal work, with no significant effect on agricultural employment. For men, we find no effect on overall employment or sectoral employment, although they are more likely to work throughout the year. When we restrict the sample to individuals who have always lived in the same district, we find a different pattern in men's and women's employment. We report these estimates in Panel B of Appendix Table A.18. We find that college access increased women's employment by 8.3 percentage points. However, this increase is driven primarily

Table 8: Effects of the College Expansion on Couples' Employment and Occupational Rank

Panel A: Employment Status of Both Husband and Wife

	Husband Working (1)	Wife Working (2)	Only Husband Working (3)	Only Wife Working (4)	Both Working (5)
RD Estimate	0.008	-0.050	0.050	-0.002	-0.049
	(0.007)	(0.018)	(0.019)	(0.003)	(0.017)
	[0.457]	[0.004]	[0.007]	[0.638]	[0.002]
Mean Dep Var	0.957	0.299	0.650	0.009	0.310
Bandwidth	3.068	2.402	2.378	2.686	2.411
Effective observations	29761	22964	22851	25206	22964

Panel B: Husband's Occupation Types

	By Skill Level				Agriculture	
	Very High (1)	Medium to High (2)	Low to Medium (3)	Very Low and Manual (4)	Family Worker (5)	Casual Wage Labor (6)
RD Estimate	0.011	0.033	-0.030	0.015	0.011	-0.041
	(0.011)	(0.011)	(0.012)	(0.022)	(0.013)	(0.014)
	[0.346]	[0.001]	[0.003]	[0.378]	[0.358]	[0.006]
Mean Dep Var	0.087	0.112	0.124	0.340	0.152	0.186
Bandwidth	2.750	2.706	2.301	1.719	2.404	2.368
Effective observations	26545	26545	23118	16510	23478	23365

Panel C: Wife's Occupation Types

	By Skill Level				Agriculture	
	Very High (1)	Medium to High (2)	Low to Medium (3)	Very Low and Manual (4)	Family Worker (5)	Casual Wage Labor (6)
RD Estimate	0.004	0.020	-0.051	0.013	0.015	0.010
	(0.015)	(0.011)	(0.021)	(0.026)	(0.022)	(0.022)
	[0.834]	[0.069]	[0.003]	[0.209]	[0.391]	[0.477]
Mean Dep Var	0.098	0.051	0.121	0.240	0.177	0.314
Bandwidth	3.084	2.613	1.991	2.229	2.314	2.815
Effective observations	11761	9596	7200	8428	8775	11052

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Husband Working* and *Wife Working* are indicators equal to 1 if the husband or wife is currently employed, respectively, and 0 otherwise. *Only Husband*, *Only Wife*, and *Both Working* indicate households in which only the husband is employed, only the wife is employed, or both spouses are employed, respectively. *Very High Skill*, *Medium to High Skill*, *Low to Medium Skill*, and *Very Low and Manual Skill* are indicators equal to 1 if a person works in occupations requiring the corresponding skill level, and 0 otherwise. *Family Worker (Agriculture)* is an indicator equal to 1 if a person works as a cultivator or farmer, and 0 otherwise. *Casual Wage Labor* is an indicator equal to 1 if a person works as an agricultural, forestry, or hunting laborer, and 0 otherwise. The sample consists of married couples in NFHS-4. We include religion as a control and birth year and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and corresponding robust p-values are in brackets underneath.

by employment in agriculture. In addition, women became less likely to work year-round and more likely to engage in seasonal work, consistent with the descriptive evidence in Pande *et al.* (2017).

For men, we find no effect of college expansion on overall employment. However, men became more likely to work year-round and less likely to engage in seasonal work. Additionally, men were more likely to work in the non-agricultural sector and less likely to work in agriculture. These findings suggest important within-couple dynamics in employment allocation: men, who are more likely to be mobile, transition toward higher-wage, non-agricultural employment and year-round work, while women increasingly engage in seasonal activities such as agriculture. In sum, we find interesting heterogeneity in employment and occupations among men and women, suggesting that empowerment and social norm changes do not directly translate into employment gains for everyone.

The shift toward high-skilled occupations within couples suggests that couples are less likely to spend time in a household environment where the risk of conflict is higher, and therefore reduce domestic violence.

6.4 Marriage Market and Other Channels

Finally, we explore whether college access improves marital sorting through assortative matching. Better-matched couples tend to share more similar preferences and expectations, which leads to greater marital compatibility (Banerjee *et al.*, 2013) and reduces domestic violence. For example, husband and wife may discuss when to and how many children to have, and whether to use a contraceptive, among others.

We test these and report the results in Table 9. In columns (1) and (2), we first report estimates of the differences in age and education between couples and find no statistically significant effects, suggesting that this marriage-market channel does not fully explain our results. We also test whether husbands' preferences for sons and daughters could explain our results. We construct a variable that captures the difference between the husband's ideal number of sons and daughters, and estimate the effect of colleges when the husband wants more sons. We find no differences in the husband's preferences for the ideal number of sons and daughters. Therefore, we conclude that husband preferences for sons or daughters do not explain our results. Next, we test whether either the wife or the husband and wife decide about whether to use a contraceptive and report the estimates in column (4). We find a positive and significant effect on joint decision-making regarding contraceptive use, suggesting that some degree of agreement from husbands on the decision to use a contraceptive could lead to lower domestic violence. And lastly, we test whether the husband's drinking behavior could explain our results. In our data, about 32 percent of husbands report some level of drinking, including social drinking. We find that the husband's drinking behavior changed, although the estimate is imprecise (p-value = 0.102). Therefore, we conclude that moderation in the husband's drinking behavior could

Table 9: Effects of the College Expansion on Spousal Age and Education Gap, Fertility Preferences, and Husbands' Drinking Habits

	Marriage Market		Fertility Preferences		
	Age Gap (H–W)	**Educ. Gap (H–W)**	**Ideal No. of Children**	**Contraception Use Pref.**	**Husband's Drinking Habits**
	(1)	(2)	(3)	(4)	(5)
RD Estimate	0.169	0.100	0.012	0.011	-0.033
	(0.172)	(0.158)	(0.026)	(0.006)	(0.019)
	[0.331]	[0.248]	[0.664]	[0.021]	[0.102]
Mean Dep Var	4.878	1.563	0.206	0.915	0.316
Bandwidth	3.084	2.648	2.618	2.591	3.013
Effective observations	26166	22679	19152	65485	19693

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Age Gap (H–W)* is the age difference between the husband and the wife. *Educ. Gap (H–W)* is the difference in years of schooling between the husband and the wife. *Ideal No. of Children* is the difference between the ideal number of sons and daughters reported by the husband. *Contraception Use Pref.* is an indicator equal to 1 if the decision to use contraception is made mainly by the wife or jointly by the couple, and 0 otherwise. *Husband Drinks* is an indicator equal to 1 if the husband consumes alcohol, and 0 otherwise. All regressions include controls for religion, birth year, and state fixed effects. Each column represents a separate regression and estimation is performed following Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and robust p-values are in brackets.

partially explain our results.

7 Conclusion

This paper studies the impacts of a large-scale investment in a college expansion program on domestic violence, women's empowerment, and the occupational choices of husbands and wives in India. Using a regression discontinuity design, we find that college expansion decreased domestic violence. The largest effect was among younger women who were more likely to be exposed to the program. Further, we find that the decline in domestic violence was consistent across reporting types (ever reported vs. last 12 months); however, it was more pronounced for those who reported violence in the last 12 months.

We test key channels underlying the negative effects of domestic violence. First, we find that it increased the education of both the husband and the wife, and that women were more likely to participate in household decision-making, own assets, and have the freedom to go out. Moreover, women were also more likely to reject justifications for domestic violence, suggesting that expanded educational opportunities contributed to changes in gender attitudes and social norms. This was complemented by improvements in husbands' behavior and gender attitudes. For example, husbands were less likely to accuse their wives of wrongdoing and less likely to constantly monitor their movements. Second, we find that improved access to education changes the types of occupations both husbands

and wives engage in. Husbands were more likely to leave agriculture and low-skilled occupations and work in high-skilled occupations. Wives were also less likely to work in low-skilled occupations and more likely to work in high-skilled occupations. Engagement in higher-skilled occupations not only generates more income but can also change the amount of time husbands and wives spend in environments where the risk of conflict might be higher. In sum, these mechanisms highlight how investments in higher education can alter women's bargaining power within households, change social norms and occupations, and reduce their exposure to domestic violence.

Our findings carry important policy implications. Domestic violence remains a widespread global challenge, and the World Health Organization (WHO) estimates that approximately one in three women worldwide (31.6 percent) have experienced domestic violence in their lifetime (WHO, 2024). The economic costs associated with violence against women are substantial, including healthcare, trauma, legal costs, and loss of productivity, which could be as high as 1–6 percent of a country's GDP (WHO, 2024). Our results suggest that investments in higher education infrastructure and access can generate benefits that extend well beyond labor-market outcomes. These investments can strengthen women's agency, reshape household dynamics, and contribute to reductions in gender-based violence.

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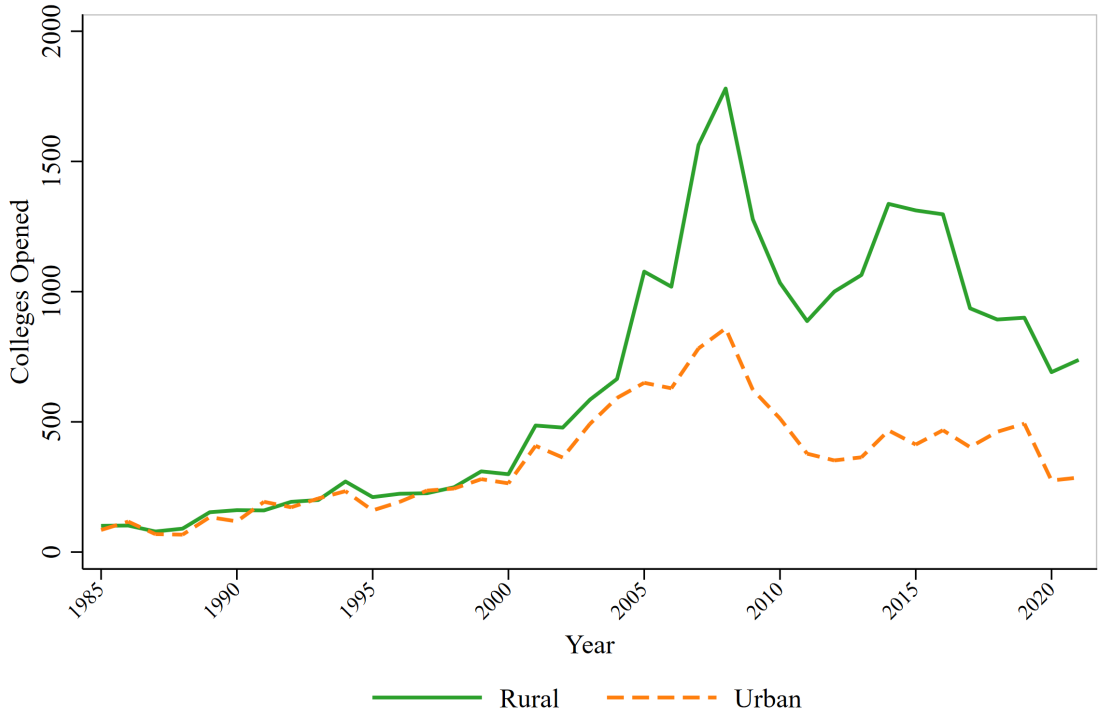
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APPENDIX FIGURES AND TABLES

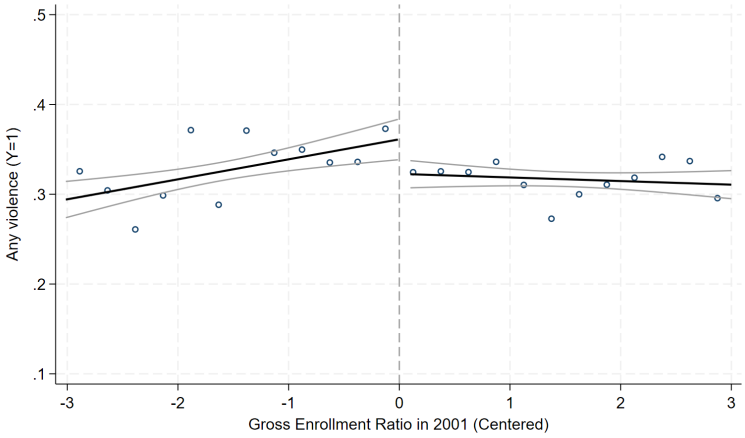
Appendix Figures

Figure A.1: Trend in colleges opening by rural and urban

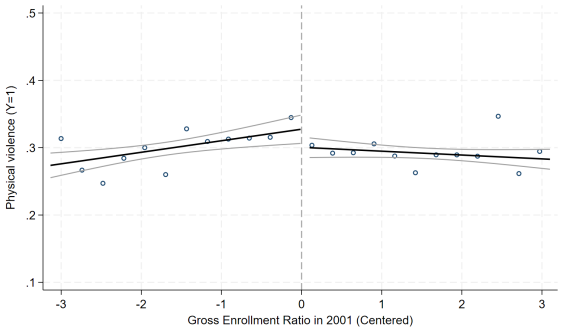


Note: The figure plots the number of new colleges constructed in rural and urban areas. The data are from AISHE and cover all colleges between 1985 and 2021.

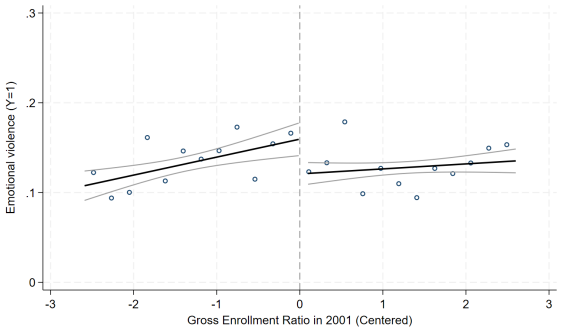
Figure A.2: Effects of the College Expansion on Ever Reported Domestic Violence



(a) Any Violence



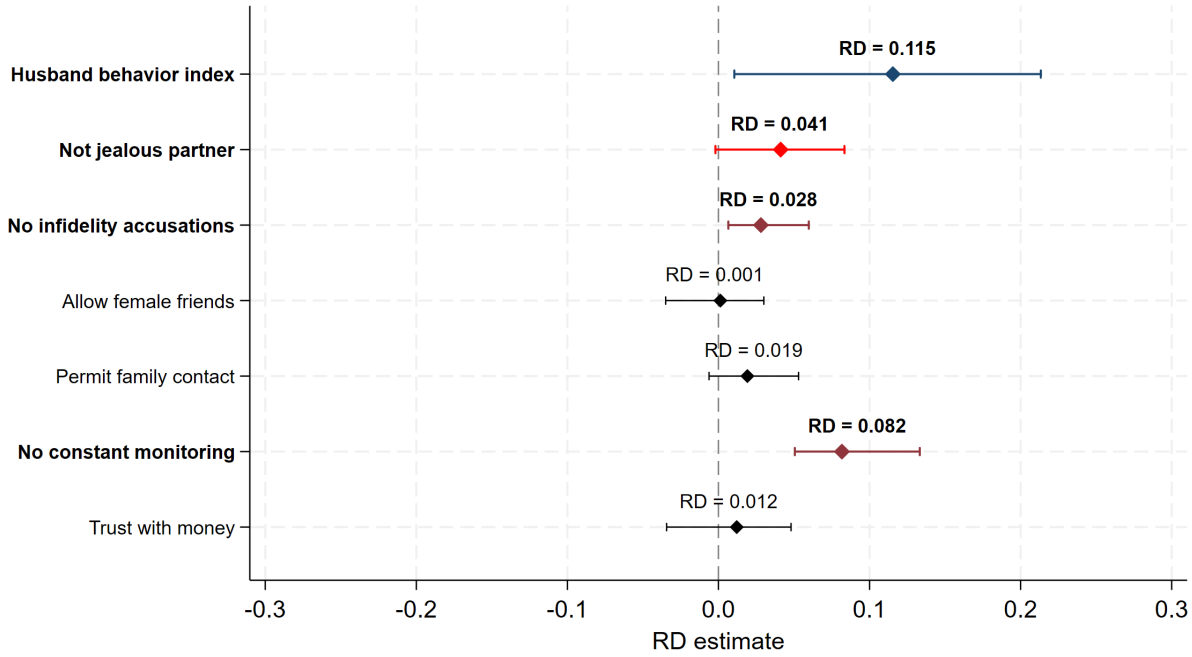
(b) Physical Violence



(c) Emotional Violence

Note: The figures plot ever-reported domestic violence against the Gross Enrollment Ratio. Panel (a) presents any ever-reported domestic violence. Panel (b) presents ever-reported physical violence, while Panel (c) presents ever-reported emotional violence. The vertical dashed line in each graph represent the cutoff point and the figures are produced using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). The corresponding estimation results are reported in Panel A of Table 2.

Figure A.3: Effects of the College Expansion on Husband Behavior



Note: The figures plot the husband's behavior index and the binary indicators used to construct the index against the Gross Enrollment Ratio. The vertical dashed line represents the cutoff point. The figures are produced using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). The corresponding estimation results are reported in Table 7.

Appendix Tables

Table A.1: Summary Statistics of Domestic Violence and Other Characteristics by Treatment Status for Women

	Total		Treatment		Control	
	Mean	SD	Mean	SD	Mean	SD
Domestic Violence (Ever reported)						
Any violence (Yes=1, No=0)	0.32	0.47	0.32	0.47	0.31	0.46
Physical violence (Yes=1, No=0)	0.29	0.46	0.30	0.46	0.29	0.45
Emotional violence (Yes=1, No=0)	0.13	0.33	0.13	0.34	0.12	0.33
Any violence index	0.00	1.01	0.01	1.01	0.00	1.00
Physical violence index	0.00	1.01	0.01	1.02	0.00	1.00
Emotional violence index	0.01	1.00	0.01	1.01	0.00	1.00
Domestic Violence (Reported in the last 12 months)						
Any violence (Yes=1, No=0)	0.27	0.44	0.28	0.45	0.26	0.44
Physical violence (Yes=1, No=0)	0.25	0.43	0.25	0.43	0.24	0.43
Emotional violence (Yes=1, No=0)	0.11	0.31	0.11	0.31	0.10	0.30
Any violence index	0.01	1.00	0.01	1.00	0.00	1.00
Physical violence index	0.01	1.01	0.01	1.02	0.00	1.00
Emotional violence index	0.01	1.01	0.01	1.01	0.00	1.00
Education						
Years of education	6.84	5.28	6.20	5.21	7.89	5.23
Primary school	0.13	0.33	0.14	0.34	0.11	0.31
Middle school	0.16	0.36	0.16	0.37	0.15	0.35
Secondary/High school	0.18	0.38	0.16	0.37	0.21	0.41
Senior secondary school	0.13	0.33	0.11	0.32	0.15	0.36
Higher education	0.13	0.33	0.10	0.30	0.17	0.38
Social Groups, Religion, Age						
Scheduled Caste/Tribe	0.38	0.49	0.40	0.49	0.34	0.47
OBC	0.41	0.49	0.42	0.49	0.40	0.49
General Caste	0.21	0.41	0.18	0.39	0.26	0.44
Hindu	0.74	0.44	0.74	0.44	0.75	0.43
Muslim	0.14	0.34	0.14	0.35	0.13	0.33
Others	0.12	0.33	0.12	0.33	0.13	0.33
Age	29.58	8.28	29.54	8.27	29.63	8.28
Age at Marriage	28.86	29.57	29.71	30.38	25.70	26.09
Empowerment Indices						
Non-Justified Violence Index	-0.05	1.04	-0.08	1.05	0.00	1.00
Ownership Index	-0.05	1.01	-0.08	1.01	0.00	1.00
Decision Index	-0.04	1.02	-0.06	1.04	0.00	1.00
Women Freedom Index	-0.01	1.03	-0.02	1.05	0.00	1.00

Notes: Authors' own calculations from NFHS-4 (2015-16).

Table A.2: Robustness of Manipulation Tests using Different Kernels and Bandwidth

	T-statistic	P-value	Effective N
Panel A: Kernel Choice			
Triangular (baseline)	-0.808	0.419	286
Uniform	-0.733	0.463	273
Epanechnikov	-0.717	0.474	283
Panel B: Bandwidth Selection			
Difference MSE (hl≠hr)	-0.784	0.433	279
Sum MSE	-0.821	0.412	303
MSE by side	-0.405	0.685	340
Panel C: Polynomial Order			
Higher-order (p=3, q=4)	-0.550	0.582	389

Notes: Robustness tests are performed to assess the validity of the RD design. We test for manipulation of the running variable and its sensitivity to bandwidth, kernels, and polynomials using `rddensity` following Cattaneo *et al.* (2020).

Table A.3: Covariate Discontinuity Test Around the Threshold

Variable	MSE-Optimal Bandwidth	RD Estimates	Robust Inference		Eff. No. of Obs.
			p-value	Conf. Int.	
Population (log)	3.153	-0.080	0.841	[-0.839, 0.683]	207
Scheduled Caste Population	3.117	-0.426	0.339	[-1.48, 0.51]	203
Scheduled Tribe Population	3.878	-0.967	0.282	[-3.21, 0.93]	221
Total Expenditure	3.605	-0.458	0.409	[-1.54, 0.63]	242
Number of Colleges	3.703	-3.18	0.440	[-13.1, 5.7]	248
Pucca Road Length	2.738	226	0.249	[-194, 750]	172
Road Lighting Electrical Conn.	3.789	-5879	0.570	[-28566, 15725]	250
Households	3.279	-0.185	0.588	[-0.980, 0.555]	215
Area (km^2)	2.942	22.3	0.572	[-64.5, 116.7]	194
Literacy Rate	3.006	-0.004	0.859	[-0.085, 0.071]	196
Female Share	3.725	0.002	0.735	[-0.009, 0.013]	248
Female Literacy Rate	2.878	-0.007	0.842	[-0.105, 0.085]	186
Male Literacy Rate	3.423	0.000	0.929	[-0.065, 0.060]	225
Electricity (all purposes)	3.746	-0.011	0.729	[-0.124, 0.087]	248
No. of Primary Schools	3.122	61.8	0.872	[-507, 598]	204
No. of Middle Schools	3.080	-25.8	0.560	[-219, 119]	199
No. of Secondary Schools	3.454	-22.6	0.496	[-110, 54]	228
No. of Senior Secondary Schools	3.702	-4.76	0.815	[-21.8, 17.1]	248
No. of Hospitals	2.705	9.61	0.428	[-10.5, 24.8]	172
Tap Water	3.535	-184	0.570	[-750, 413]	236
Average Night Lights (1994-2007)	3.176	-2025	0.889	[-16014, 13888]	226
Total Night Lights (1994-2007)	3.176	-52649	0.889	[-416377, 361084]	226
Average Forest Cover (2001-2007)	3.094	-3.56	0.254	[-12.7, 3.3]	217

Notes: Demographic data are from the 2001 Population Census. Nighttime light intensity for 1994–2007 comes from the DMSP-OLS annual composite imagery. Forest cover data (2001–2007) is derived from the MODIS Vegetation Continuous Fields (VCF) product (Asher *et al.*, 2021). Each row represents a separate regression, and estimation is performed following Calonico *et al.* (2014, 2022). *Total Expenditure* includes expenditures on general administration, public safety, public health and convenience, public works, public institutions, and other categories. *Road Lighting* refers to the number of electrical connection points for street lights. *Female (Male) Literacy Rate* is the share of the literate female (male) population relative to the total female (male) population. *Electricity (All Purposes)* is a binary indicator equal to 1 if the district has electricity available for all purposes. *Total Night Light* is the annual average of the sum of luminosity values (0–63) across all pixels (1994–2007) within the district. *Average Night Lights* is the annual average night light intensity per pixel (1994–2007) within the district. *Average Forest Cover* is the average tree cover (2001–2007) at 250m resolution.

Table A.4: Robustness of Effect of the College Expansion on Number of Colleges using Different Kernels, Bandwidths, and Polynomial Orders

	Numbers of Colleges						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: New Colleges Per Year							
RD Estimate	1.210	0.825	1.017	2.018	0.971	1.656	1.262
	(0.453)	(0.444)	(0.429)	(0.531)	(0.420)	(0.476)	(0.430)
	[0.001]	[0.010]	[0.003]	[0.000]	[0.002]	[0.000]	[0.001]
Mean Dep Var	2.369	2.369	2.369	2.369	2.369	2.369	2.369
Bandwidth	1.629	1.437	1.696	1.048	2.022	1.301	3.859
Effective observations	1210	1056	1243	792	1540	990	3025
Panel B: Cumulative Colleges							
RD Estimate	10.658	8.750	11.417	29.414	11.472	32.485	11.279
	(1.656)	(1.878)	(1.682)	(2.095)	(1.635)	(2.153)	(1.729)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Mean Dep Var	14.540	14.540	14.540	14.540	14.540	14.540	14.540
Bandwidth	1.276	1.298	1.191	0.821	1.210	0.778	2.782
Effective observations	968	968	869	484	957	451	2057
Kernel selection	Tri	Uni	Epa	Tri	Tri	Tri	Tri
Bandwidth selection	$\hat{h}_{MSE}$	$\hat{h}_{MSE}$	$\hat{h}_{MSE}$	$\hat{h}_{CER}$	$\hat{h}_{MSESUM}$	$\hat{h}_{CERSUM}$	$\hat{h}_{MSE}$
Polynomial Order	1	1	1	1	1	1	2

Notes: Data are from the All India Survey on Higher Education (AISHE), 2009-2019. Each column reports results from a separate regression. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Controls include state FE, Year FE, Ruggedness, Elevation, and Nightlight. Standard errors are reported in parentheses, and corresponding robust p-values are in brackets underneath.

Table A.5: Effects of the College Expansion on Domestic Violence Ever Reported, by cohort

	Any Violence		Physical Violence		Emotional Violence	
	Dummy	Index	Dummy	Index	Dummy	Index
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Younger Cohort						
RD Estimate	-0.089	-0.185	-0.073	-0.172	-0.033	-0.121
	(0.032)	(0.069)	(0.030)	(0.062)	(0.025)	(0.078)
	[0.003]	[0.004]	[0.014]	[0.003]	[0.144]	[0.112]
Mean Dep Var	0.303	-0.023	0.281	-0.023	0.119	-0.015
Bandwidth	2.677	3.112	2.630	3.619	2.347	2.255
Effective observations	6695	8204	6582	9882	6048	5753
Panel B: Older Cohort						
RD Estimate	-0.008	-0.020	-0.007	-0.009	-0.021	-0.049
	(0.022)	(0.046)	(0.021)	(0.046)	(0.017)	(0.048)
	[0.564]	[0.767]	[0.541]	[0.955]	[0.137]	[0.289]
Mean Dep Var	0.326	0.023	0.304	0.022	0.131	0.025
Bandwidth	3.642	4.041	3.614	3.957	3.502	4.384
Effective observations	14897	15875	14897	15510	14346	17207

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Any violence (dummy)* is a dummy equal to 1 if a woman has ever experienced either physical or emotional violence by her husband or partner. *Physical violence (dummy)* is a dummy equal to 1 if a woman has ever been pushed, shaken, slapped, punched, kicked, dragged, strangled, burned, threatened with a weapon, or had her arm twisted or hair pulled by her husband or partner. *Emotional violence (dummy)* is a dummy equal to 1 if a woman has ever been humiliated, threatened with harm, insulted, or made to feel bad by her husband or partner. The corresponding indices are constructed from the underlying binary indicators for each type of violence using inverse covariance weighting following Anderson (2008) and are standardized using the mean and standard deviation of the control group. Thus, the *Any violence (index)* combines all physical and emotional violence indicators, while the *Physical violence (index)* and *Emotional violence (index)* use only the corresponding subsets of indicators. The sample consists of married women between the ages of 18 and 46. We also include religion as a control and birth year and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and robust p-values are in brackets.

Table A.6: Robustness of Effects of the College Expansion on Any Domestic Violence Using Different Kernel, Bandwidths, and Polynomial Orders

	(1)	(2)	(3)	(4)	(5)
Panel A: Any Violence (Dummy)					
RD Estimate	-0.045	-0.049	-0.051	-0.042	-0.044
	(0.023)	(0.020)	(0.019)	(0.022)	(0.024)
	[0.062]	[0.010]	[0.004]	[0.054]	[0.130]
Mean Dep Var	0.272	0.272	0.272	0.272	0.272
Bandwidth	1.637	2.441	2.721	1.577	3.595
Effective observations	9641	14517	16315	9447	22417
Panel B: Any Violence (Index)					
RD Estimate	-0.096	-0.110	-0.099	-0.081	-0.096
	(0.051)	(0.041)	(0.038)	(0.046)	(0.060)
	[0.026]	[0.003]	[0.005]	[0.071]	[0.138]
Mean Dep Var	0.006	0.006	0.006	0.006	0.006
Bandwidth	1.869	3.220	3.977	2.298	3.525
Effective observations	11284	21094	25358	14423	23418
Bandwidth selection	$\hat{h}_{MSE}$	$\hat{h}_{MSE}$	$\hat{h}_{MSESUM}$	$\hat{h}_{CERSUM}$	$\hat{h}_{MSE}$
Local Polynomial Degree	1	1	1	1	2
Kernel	Uniform	Epanechnikov	Triangular	Triangular	Triangular

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Any violence* is a dummy equal to 1 if a woman has ever experienced either physical or emotional violence by her husband or partner in the past 12 months. *Physical violence* is a dummy equal to 1 if a woman has ever been pushed, shaken, slapped, punched, kicked, dragged, strangled, burned, threatened with a weapon, or had her arm twisted or hair pulled by her husband or partner in the past 12 months. *Emotional violence* is a dummy equal to 1 if a woman has ever been humiliated, threatened with harm, insulted, or made to feel bad by her husband or partner in the past 12 months. The sample consists of married women between the ages of 18 and 46. We also include religion as a control and birth year and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and robust p-values are in brackets.

Table A.7: Robustness of Effects of the College Expansion on Any Domestic Violence by Cohorts Using Different Kernel, Bandwidths, and Polynomial Orders

	(1)	(2)	(3)	(4)	(5)
Panel A: Younger Cohort (Dummy)					
RD Estimate	-0.093	-0.098	-0.097	-0.078	-0.087
	(0.035)	(0.031)	(0.030)	(0.035)	(0.039)
	[0.010]	[0.001]	[0.001]	[0.021]	[0.054]
Mean Dep Var	0.271	0.271	0.271	0.271	0.271
Bandwidth	1.879	2.591	2.807	1.701	3.524
Effective observations	4422	6227	7075	4136	9085
Panel B: Younger Cohort (Index)					
RD Estimate	-0.138	-0.187	-0.192	-0.154	-0.184
	(0.082)	(0.074)	(0.071)	(0.083)	(0.095)
	[0.054]	[0.007]	[0.004]	[0.057]	[0.060]
Mean Dep Var	0.004	0.004	0.004	0.004	0.004
Bandwidth	1.704	2.613	3.014	1.823	3.506
Effective observations	4291	6500	7750	4583	9389
Panel C: Older Cohort (Dummy)					
RD Estimate	-0.026	-0.018	-0.017	-0.017	-0.013
	(0.029)	(0.024)	(0.023)	(0.027)	(0.029)
	[0.354]	[0.368]	[0.416]	[0.488]	[0.824]
Mean Dep Var	0.272	0.272	0.272	0.272	0.272
Bandwidth	1.707	2.931	3.140	1.867	4.132
Effective observations	5982	10821	11528	6318	15122
Panel D: Older Cohort (Index)					
RD Estimate	-0.081	-0.054	-0.050	-0.024	-0.049
	(0.056)	(0.050)	(0.053)	(0.063)	(0.071)
	[0.173]	[0.266]	[0.335]	[0.696]	[0.538]
Mean Dep Var	0.007	0.007	0.007	0.007	0.007
Bandwidth	2.541	3.662	3.384	2.007	4.078
Effective observations	9579	14569	13407	7522	15601
Bandwidth selection	$\hat{h}_{MSE}$	$\hat{h}_{MSE}$	$\hat{h}_{MSESUM}$	$\hat{h}_{CERSUM}$	$\hat{h}_{MSE}$
Local Polynomial Degree	1	1	1	1	2
Kernel	Uniform	Epanechnikov	Triangular	Triangular	Triangular

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Any violence* is a dummy equal to 1 if a woman has ever experienced either physical or emotional violence by her husband or partner in the past 12 months. *Physical violence* is a dummy equal to 1 if a woman has ever been pushed, shaken, slapped, punched, kicked, dragged, strangled, burned, threatened with a weapon, or had her arm twisted or hair pulled by her husband or partner in the past 12 months. *Emotional violence* is a dummy equal to 1 if a woman has ever been humiliated, threatened with harm, insulted, or made to feel bad by her husband or partner in the past 12 months. The sample consists of married women between the ages of 18 and 46. We also include religion as a control and birth year and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and robust p-values are in brackets.

Table A.8: Robustness of Effects of the College Expansion on Physical and Emotional Violence Using Different Kernel, Bandwidths, and Polynomial Orders

	(1)	(2)	(3)	(4)	(5)
Panel A: Physical Violence (Dummy)					
RD Estimate	-0.043	-0.045	-0.046	-0.043	-0.043
	(0.024)	(0.020)	(0.019)	(0.021)	(0.023)
	[0.114]	[0.018]	[0.009]	[0.042]	[0.102]
Mean Dep Var	0.246	0.246	0.246	0.246	0.246
Bandwidth	1.413	2.344	2.538	1.470	3.498
Effective observations	8460	14257	15220	8656	21719
Panel B: Physical Violence (Index)					
RD Estimate	-0.099	-0.082	-0.079	-0.053	-0.075
	(0.039)	(0.039)	(0.040)	(0.048)	(0.055)
	[0.010]	[0.029]	[0.042]	[0.261]	[0.232]
Mean Dep Var	0.006	0.006	0.006	0.006	0.006
Bandwidth	3.015	3.756	3.607	2.093	4.118
Effective observations	17831	22880	22560	11966	24603
Panel C: Emotional Violence (Dummy)					
RD Estimate	-0.026	-0.032	-0.037	-0.030	-0.040
	(0.017)	(0.016)	(0.015)	(0.017)	(0.017)
	[0.170]	[0.054]	[0.004]	[0.066]	[0.025]
Mean Dep Var	0.108	0.108	0.108	0.108	0.108
Bandwidth	1.570	2.207	2.616	1.512	3.789
Effective observations	9751	14108	16165	9572	24694
Panel D: Emotional Violence (Index)					
RD Estimate	-0.098	-0.122	-0.142	-0.095	-0.159
	(0.059)	(0.055)	(0.048)	(0.057)	(0.058)
	[0.200]	[0.036]	[0.001]	[0.079]	[0.008]
Mean Dep Var	0.009	0.009	0.009	0.009	0.009
Bandwidth	1.603	2.135	2.708	1.566	3.925
Effective observations	9975	13454	16931	9694	25030
Bandwidth selection	$\hat{h}_{MSE}$	$\hat{h}_{MSE}$	$\hat{h}_{MSESUM}$	$\hat{h}_{CERSUM}$	$\hat{h}_{MSE}$
Local Polynomial Degree	1	1	1	1	2
Kernel	Uniform	Epanechnikov	Triangular	Triangular	Triangular

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Physical Violence Index* is constructed from several binary variables, each coded as 1 if a woman experienced any of the following acts by her husband or partner during the past 12 months: being pushed, shaken, slapped, punched, kicked, dragged, strangled, burned, threatened with a weapon, or having her arm twisted or hair pulled. *Emotional Violence Index* is constructed from several binary variables, each coded as 1 if a woman experienced any of the following acts by her husband or partner during the past 12 months: being humiliated, threatened with harm, insulted, or made to feel bad. The indices are constructed using inverse covariance weighting following Anderson (2008) and are standardized using the mean and standard deviation of the control group. The sample consists of married women between the ages of 18 and 46. We also include religion as a control and birth year and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and robust p-values are in brackets.

Table A.9: Effects of the College Expansion on Domestic Violence, Women in Same Residence for 10+ Years

	Any Violence		Physical Violence		Emotional Violence	
	Dummy	Index	Dummy	Index	Dummy	Index
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Reported Ever						
RD Estimate	-0.055	-0.077	-0.053	-0.067	-0.029	-0.100
	(0.027)	(0.049)	(0.026)	(0.051)	(0.021)	(0.063)
	[0.017]	[0.086]	[0.015]	[0.141]	[0.108]	[0.057]
Mean Dep Var	0.344	0.039	0.321	0.041	0.134	0.030
Bandwidth	2.728	3.898	2.832	3.585	2.616	2.861
Effective observations	9624	14039	10298	13033	9096	10298
Panel B: Reported in the last 12 months						
RD Estimate	-0.055	-0.105	-0.053	-0.066	-0.040	-0.149
	(0.027)	(0.054)	(0.026)	(0.061)	(0.021)	(0.072)
	[0.023]	[0.024]	[0.022]	[0.275]	[0.035]	[0.031]
Mean Dep Var	0.290	0.023	0.263	0.030	0.113	0.022
Bandwidth	2.687	3.677	2.645	3.066	2.543	2.513
Effective observations	8591	13254	8409	9642	8755	8698

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Any violence (dummy)* is a dummy equal to 1 if a woman has ever experienced either physical or emotional violence by her husband or partner. *Physical violence (dummy)* is a dummy equal to 1 if a woman has ever been pushed, shaken, slapped, punched, kicked, dragged, strangled, burned, threatened with a weapon, or had her arm twisted or hair pulled by her husband or partner. *Emotional violence (dummy)* is a dummy equal to 1 if a woman has ever been humiliated, threatened with harm, insulted, or made to feel bad by her husband or partner. The corresponding indices are constructed from the underlying binary indicators for each type of violence using inverse covariance weighting following Anderson (2008) and are standardized using the mean and standard deviation of the control group. Thus, the *Any violence (index)* combines all physical and emotional violence indicators, while the *Physical violence (index)* and *Emotional violence (index)* use only the corresponding subsets of indicators. The sample consists of married women between the ages of 18 and 46. We also include religion as a control and birth year and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses, and robust p-values are reported in brackets.

Table A.10: Effects of the College Expansion on Domestic Violence, Women in Same Residence for 20+ Years

	Any Violence		Physical Violence		Emotional Violence	
	Dummy	Index	Dummy	Index	Dummy	Index
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Reported Ever						
RD Estimate	-0.105	-0.126	-0.130	-0.117	-0.056	-0.134
	(0.044)	(0.085)	(0.046)	(0.085)	(0.033)	(0.087)
	[0.003]	[0.065]	[0.001]	[0.088]	[0.030]	[0.043]
Mean Dep Var	0.339	0.044	0.316	0.042	0.138	0.046
Bandwidth	2.760	4.075	2.376	4.093	2.882	3.812
Effective observations	3910	5807	3416	5825	4229	5578
Panel B: Reported in the last 12 months						
RD Estimate	-0.134	-0.237	-0.165	-0.164	-0.068	-0.214
	(0.047)	(0.109)	(0.049)	(0.105)	(0.034)	(0.114)
	[0.001]	[0.015]	[0.000]	[0.049]	[0.030]	[0.038]
Mean Dep Var	0.284	0.019	0.257	0.022	0.115	0.028
Bandwidth	2.254	2.986	1.975	3.467	2.426	2.606
Effective observations	2999	4287	2538	4579	3332	3549

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Any violence (dummy)* is a dummy equal to 1 if a woman has ever experienced either physical or emotional violence by her husband or partner. *Physical violence (dummy)* is a dummy equal to 1 if a woman has ever been pushed, shaken, slapped, punched, kicked, dragged, strangled, burned, threatened with a weapon, or had her arm twisted or hair pulled by her husband or partner. *Emotional violence (dummy)* is a dummy equal to 1 if a woman has ever been humiliated, threatened with harm, insulted, or made to feel bad by her husband or partner. The corresponding indices are constructed from the underlying binary indicators for each type of violence using inverse covariance weighting following Anderson (2008) and are standardized using the mean and standard deviation of the control group. Thus, the *Any violence (index)* combines all physical and emotional violence indicators, while the *Physical violence (index)* and *Emotional violence (index)* use only the corresponding subsets of indicators. The sample consists of married women between the ages of 18 and 46. We also include religion as a control and birth year and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses, and robust p-values are reported in brackets.

Table A.11: Effects of the College Expansion on Domestic Violence, Rural Sample

	Any Violence		Physical Violence		Emotional Violence	
	Dummy	Index	Dummy	Index	Dummy	Index
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Reported Ever						
RD Estimate	-0.050	-0.062	-0.049	-0.052	-0.017	-0.060
	(0.020)	(0.045)	(0.021)	(0.046)	(0.016)	(0.047)
	[0.006]	[0.218]	[0.010]	[0.371]	[0.143]	[0.128]
Mean Dep Var	0.317	0.005	0.295	0.004	0.126	0.009
Bandwidth	3.419	3.579	3.160	3.267	3.238	3.650
Effective observations	16051	16664	14728	15471	15148	17361
Panel B: Reported in the last 12 months						
RD Estimate	-0.057	-0.079	-0.052	-0.048	-0.027	-0.094
	(0.020)	(0.047)	(0.018)	(0.053)	(0.016)	(0.056)
	[0.001]	[0.089]	[0.001]	[0.511]	[0.056]	[0.064]
Mean Dep Var	0.272	0.006	0.246	0.006	0.108	0.009
Bandwidth	3.577	3.716	3.588	2.947	2.924	2.849
Effective observations	15609	17230	15575	12403	13468	12806

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Any violence (dummy)* is a dummy equal to 1 if a woman has ever experienced either physical or emotional violence by her husband or partner. *Physical violence (dummy)* is a dummy equal to 1 if a woman has ever been pushed, shaken, slapped, punched, kicked, dragged, strangled, burned, threatened with a weapon, or had her arm twisted or hair pulled by her husband or partner. *Emotional violence (dummy)* is a dummy equal to 1 if a woman has ever been humiliated, threatened with harm, insulted, or made to feel bad by her husband or partner. The corresponding indices are constructed from the underlying binary indicators for each type of violence using inverse covariance weighting following Anderson (2008) and are standardized using the mean and standard deviation of the control group. Thus, the *Any violence (index)* combines all physical and emotional violence indicators, while the *Physical violence (index)* and *Emotional violence (index)* use only the corresponding subsets of indicators. The sample consists of married women between the ages of 18 and 46. We also include religion as a control and birth year and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and corresponding robust p-values are in brackets underneath.

Table A.12: Effects of the College Expansion on Domestic Violence, Urban Sample

	Any Violence		Physical Violence		Emotional Violence	
	Dummy	Index	Dummy	Index	Dummy	Index
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Reported Ever						
RD Estimate	-0.024	-0.186	-0.014	-0.160	-0.062	-0.202
	(0.036)	(0.094)	(0.034)	(0.090)	(0.029)	(0.089)
	[0.465]	[0.035]	[0.646]	[0.055]	[0.021]	[0.016]
Mean Dep Var	0.317	0.005	0.295	0.004	0.126	0.009
Bandwidth	2.676	2.340	2.770	2.454	2.326	2.398
Effective observations	5003	4445	5119	4572	4445	4508
Panel B: Reported in the last 12 months						
RD Estimate	-0.041	-0.195	-0.030	-0.161	-0.074	-0.291
	(0.034)	(0.082)	(0.033)	(0.082)	(0.028)	(0.094)
	[0.181]	[0.009]	[0.276]	[0.030]	[0.004]	[0.001]
Mean Dep Var	0.272	0.006	0.246	0.006	0.108	0.009
Bandwidth	2.761	2.865	2.753	3.012	2.292	2.316
Effective observations	4839	5432	4829	5263	4006	4351

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Any violence (dummy)* is a dummy equal to 1 if a woman has ever experienced either physical or emotional violence by her husband or partner. *Physical violence (dummy)* is a dummy equal to 1 if a woman has ever been pushed, shaken, slapped, punched, kicked, dragged, strangled, burned, threatened with a weapon, or had her arm twisted or hair pulled by her husband or partner. *Emotional violence (dummy)* is a dummy equal to 1 if a woman has ever been humiliated, threatened with harm, insulted, or made to feel bad by her husband or partner. The corresponding indices are constructed from the underlying binary indicators for each type of violence using inverse covariance weighting following Anderson (2008) and are standardized using the mean and standard deviation of the control group. Thus, the *Any violence (index)* combines all physical and emotional violence indicators, while the *Physical violence (index)* and *Emotional violence (index)* use only the corresponding subsets of indicators. The sample consists of married women between the ages of 18 and 46. We also include religion as a control and birth year and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and corresponding robust p-values are in brackets underneath.

Table A.13: Effects of the College Expansion on Domestic Violence at District Level

	Reported Ever			Reported in the last 12 months		
	Any Violence	**Physical Violence**	**Emotional Violence**	**Any Violence**	**Physical Violence**	**Emotional Violence**
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Younger Cohort						
RD Estimate	-5.473	-4.661	-2.169	-5.038	-4.220	-2.506
	(1.957)	(1.883)	(0.760)	(1.596)	(1.543)	(0.678)
	[0.003]	[0.010]	[0.002]	[0.001]	[0.004]	[0.000]
Mean Dep Var	11.213	10.381	4.386	9.580	8.683	3.835
Bandwidth	2.578	2.568	2.227	2.627	2.563	2.235
Effective observations	177	177	158	180	177	159
Panel B: Older Cohort						
RD Estimate	-1.106	-1.264	-1.626	-1.987	-1.807	-1.986
	(1.937)	(1.951)	(0.941)	(1.464)	(1.487)	(0.998)
	[0.702]	[0.643]	[0.039]	[0.082]	[0.153]	[0.032]
Mean Dep Var	18.169	16.902	7.290	14.024	12.630	5.943
Bandwidth	2.934	2.914	3.492	3.476	3.160	2.932
Effective observations	213	213	252	251	228	213

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Any violence* is the district-level number of women who have ever experienced either physical or emotional violence by their husband or partner. *Physical violence* is the district-level number of women who have ever been pushed, shaken, slapped, punched, kicked, dragged, strangled, burned, threatened with a weapon, or had their arm twisted or hair pulled by their husband or partner. *Emotional violence* is the district-level number of women who have ever been humiliated, threatened with harm, insulted, or made to feel bad by their husband or partner. All specifications control for state fixed effects. Each specification uses a linear polynomial and a triangular kernel. *RD Estimate* is estimated using the optimal bandwidth and inference procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses, and robust p-values are reported in brackets.

Table A.14: Robustness of Effects of the College Expansion on Police Report Filed for Crimes Against Women Under Different Acts and Categories Using Different Kernel, Bandwidths, and Polynomial Orders

	Crimes Against Women (NCRB)				
	(1)	(2)	(3)	(4)	(5)
Panel A: Insult to Women's Modesty					
RD Estimate	-9.490	11.393	10.175	-3.919	-5.119
	(5.554)	(4.885)	(4.760)	(4.834)	(7.382)
	[0.188]	[0.009]	[0.013]	[0.501]	[0.255]
Mean Dep Var	14.759	14.759	14.759	14.759	14.759
Bandwidth	1.503	3.224	3.410	2.251	2.202
Effective observations	722	1535	1619	1073	1063
Panel B: Cruelty by Husband or His Relatives					
RD Estimate	-48.952	8.404	-7.872	44.419	8.244
	(21.055)	(19.552)	(19.169)	(18.426)	(34.258)
	[0.000]	[0.519]	[0.030]	[0.134]	[0.694]
Mean Dep Var	164.849	164.849	164.849	164.849	164.849
Bandwidth	1.295	2.088	1.845	1.218	2.796
Effective observations	609	979	857	609	1280
Panel B: Dowry Prohibition Act					
RD Estimate	-18.392	-22.832	-15.917	-22.799	-26.449
	(5.059)	(4.724)	(4.426)	(4.113)	(4.788)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Mean Dep Var	15.548	15.548	15.548	15.548	15.548
Bandwidth	1.661	1.542	2.102	1.400	2.635
Effective observations	647	607	853	563	1007
Panel C: Domestic Violence Act					
RD Estimate	-3.824	-3.655	-3.548	-1.327	-2.734
	(1.127)	(1.129)	(0.834)	(0.406)	(0.516)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Mean Dep Var	0.743	0.743	0.743	0.743	0.743
Bandwidth	2.431	3.150	2.470	1.645	3.795
Effective observations	942	1253	947	647	1500
Bandwidth selection	$\hat{h}_{MSE}$	$\hat{h}_{MSE}$	$\hat{h}_{MSESUM}$	$\hat{h}_{CERSUM}$	$\hat{h}_{MSE}$
Local Polynomial Degree	1	1	1	1	2
Kernel	Uniform	Epanechnikov	Triangular	Triangular	Triangular

Notes: Data are from the National Crime Records Bureau (NCRB) from 2013 to 2018. Each column reports results from a separate regression. *Cruelty by husband or his relatives* refers to registered cases of domestic violence, including emotional, mental, and physical abuse inflicted on a married woman by her husband or his relatives. *Dowry Prohibition Act* refers to registered cases under the Dowry Prohibition Act, 1961, involving the giving, taking, demanding, or advertising of dowry, irrespective of whether physical violence occurred. *Domestic Violence Act* refers to registered cases involving violations of protection orders or applications for civil remedies (such as residence orders, monetary relief, or protection orders) under the Protection of Women from Domestic Violence Act, 2005. The unit of observation is the district. All specifications include year and state fixed effects. Each column represents a separate regression, and estimation is performed following Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and corresponding robust p-values are in brackets underneath.

Table A.15: Effects of the College Expansion on Women's Educational Attainment by Marital Status

	Years of edu.	**Primary school**	**Middle school**	**High school**	**Senior Sec. school**	**Higher edu.**
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Wife's Education						
RD Estimate	0.440	0.018	0.000	0.010	-0.011	0.029
	(0.195)	(0.014)	(0.015)	(0.014)	(0.011)	(0.011)
	[0.039]	[0.102]	[0.758]	[0.445]	[0.202]	[0.003]
Mean Dep Var	6.103	0.142	0.169	0.178	0.094	0.094
Bandwidth	2.417	2.602	2.677	2.852	3.124	2.937
Effective observations	21044	22574	22981	25546	28101	26517
Panel B: Husbands/Partner's Education						
RD Estimate	0.563	0.003	0.002	0.038	0.016	0.000
	(0.183)	(0.010)	(0.013)	(0.019)	(0.014)	(0.014)
	[0.000]	[0.598]	[0.830]	[0.020]	[0.119]	[0.907]
Mean Dep Var	7.666	0.144	0.177	0.236	0.123	0.132
Bandwidth	2.669	4.086	3.426	2.169	2.398	2.436
Effective observations	22981	36362	31264	19290	20940	21143

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Years of education* is the total number of years of schooling completed by a woman. *Primary school*, *Middle school*, *Secondary school*, *High school*, and *Senior secondary school* are indicators equal to 1 if a woman's educational attainment corresponds to the respective category, and 0 otherwise. *Higher education* is an indicator equal to 1 if a woman's educational attainment is higher education (including attending or completing college), and 0 otherwise. The sample consists of women between the ages of 18 and 46. We include religion as a control and birth year and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and corresponding robust p-values are in brackets underneath.

Table A.16: Robustness of Effects of the College Expansion on Women's Educational Attainment using Different Kernels, Bandwidths, and Polynomial Orders

	Women's Educational Attainment				
	(1)	(2)	(3)	(4)	(5)
Panel A: Years of Education					
RD Estimate	1.072	0.934	0.345	1.174	0.404
	(0.109)	(0.107)	(0.081)	(0.102)	(0.110)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Mean Dep Var	6.838	6.838	6.838	6.838	6.838
Bandwidth	1.058	1.216	2.203	1.135	2.641
Effective observations	67483	83427	143855	73507	164509
Panel B: Primary Schools					
RD Estimate	0.014	0.013	0.011	0.005	0.010
	(0.005)	(0.005)	(0.005)	(0.006)	(0.008)
	[0.013]	[0.005]	[0.013]	[0.366]	[0.272]
Mean Dep Var	0.127	0.127	0.127	0.127	0.127
Bandwidth	1.751	2.310	2.723	1.402	2.685
Effective observations	111261	149720	172874	90383	168131
Panel C: Middle Schools					
RD Estimate	0.021	0.012	0.012	0.017	0.024
	(0.007)	(0.006)	(0.005)	(0.006)	(0.009)
	[0.004]	[0.051]	[0.003]	[0.003]	[0.003]
Mean Dep Var	0.156	0.156	0.156	0.156	0.156
Bandwidth	1.327	1.754	3.006	1.548	2.214
Effective observations	85171	111261	195765	97233	143855
Panel D: Secondary/High School					
RD Estimate	0.051	0.043	0.021	0.057	0.029
	(0.009)	(0.008)	(0.006)	(0.009)	(0.007)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Mean Dep Var	0.181	0.181	0.181	0.181	0.181
Bandwidth	0.948	1.162	2.110	1.087	3.583
Effective observations	55149	73507	137612	68090	235750
Panel E: Senior Secondary School					
RD Estimate	-0.002	-0.019	-0.014	-0.006	-0.023
	(0.008)	(0.006)	(0.006)	(0.008)	(0.008)
	[0.143]	[0.000]	[0.001]	[0.371]	[0.002]
Mean Dep Var	0.128	0.128	0.128	0.128	0.128
Bandwidth	1.014	1.677	2.065	1.063	2.583
Effective observations	65704	104908	131226	68090	161534
Panel F: Higher Education					
RD Estimate	0.010	0.011	0.015	0.016	0.010
	(0.005)	(0.005)	(0.004)	(0.006)	(0.008)
	[0.052]	[0.031]	[0.000]	[0.004]	[0.270]
Mean Dep Var	0.127	0.127	0.127	0.127	0.127
Bandwidth	1.804	2.216	2.854	1.470	2.435
Effective observations	115261	143855	186435	92960	153233
Bandwidth selection	$\hat{h}_{MSE}$	$\hat{h}_{MSE}$	$\hat{h}_{MSESUM}$	$\hat{h}_{CERSUM}$	$\hat{h}_{MSE}$
Local Polynomial Degree	1	1	1	1	2
Kernel	Uniform	Epanechnikov	Triangular	Triangular	Triangular

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Years of education* is the total number of years of schooling completed by a woman. *Primary school*, *Middle school*, *Secondary school*, *High school*, and *Senior secondary school* are indicators equal to 1 if a woman's educational attainment corresponds to the respective category, and 0 otherwise. *Higher education* is an indicator equal to 1 if a woman's educational attainment is higher education (including attending or completing college), and 0 otherwise. The sample consists of women between the ages of 18 and 46. Regressions include controls for religion, birth year, and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and corresponding robust p-values are in brackets underneath.

Table A.17: Effects of the College Expansion on Women's Attitude Toward Violence, Ownership Status, Decision Making, And Women's Mobility

Panel A: Rejects Violence					
	Goes Out Without Telling	**Neglects Children**	**Argues with Husband**	**Refuses Sex**	**Poor Cooking**
RD Estimate	0.029	0.025	0.015	0.019	0.031
	(0.014)	(0.015)	(0.017)	(0.011)	(0.013)
	[0.019]	[0.024]	[0.520]	[0.063]	[0.004]
Mean Dep Var	0.760	0.703	0.731	0.869	0.821
Bandwidth	2.399	2.564	1.848	2.830	2.352
Effective observations	26424	28008	19641	31834	26271
Panel B: Ownership					
	House	**Land**	**Phone**	**Bank account**	
RD Estimate	0.081	0.081	0.032	0.018	
	(0.018)	(0.016)	(0.015)	(0.017)	
	[0.000]	[0.000]	[0.030]	[0.324]	
Mean Dep Var	0.392	0.304	0.488	0.527	
Bandwidth	1.371	1.565	2.974	2.703	
Effective observations	14863	17093	33586	30241	
Panel C: Household Decision					
	Own Health Care	**Major Purchases**	**Visits to Family**	**Husband's Earnings**	
RD Estimate	0.032	0.058	0.027	0.053	
	(0.017)	(0.016)	(0.017)	(0.017)	
	[0.015]	[0.000]	[0.030]	[0.000]	
Mean Dep Var	0.755	0.738	0.750	0.712	
Bandwidth	2.839	3.119	2.904	2.989	
Effective observations	24310	26767	25100	25175	
Panel D: Women's Freedom of Mobility					
	Allowed to go to market	**Allowed to go to health facility**	**Allowed to go outside village**		
RD Estimate	0.021	0.025	0.013		
	(0.011)	(0.009)	(0.008)		
	[0.017]	[0.002]	[0.039]		
Mean Dep Var	0.909	0.935	0.911		
Bandwidth	1.833	1.931	3.494		
Effective observations	19853	21191	40197		

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Goes Out without Telling*, *Neglects Children*, *Argue with Husband*, *Refuses Sex*, and *Poor Cooking* are indicators equal to 1 if the respondent reports that a husband is not justified in beating his wife, respectively, for going out without telling him, neglecting the children, arguing with him, refusing to have sex with him, or not cooking properly, and 0 otherwise. *House*, *Land*, *Phone*, and *Bank Account* are indicators equal to 1 if the woman owns the corresponding asset (alone or jointly), and 0 otherwise. *Own Health Care*, *Major Purchases*, *Visits to Family*, and *Husband's Earnings* are indicators equal to 1 if the woman participates (alone or jointly) in decisions regarding her own health care, major household purchases, visits to her family or relatives, and the use of her husband's earnings, respectively, and 0 otherwise. *Allowed to Go to Market*, *Allowed to Go to a Health Facility*, and *Allowed to Go Outside the Village* are indicators equal to 1 if the woman is allowed to go to the corresponding location alone, and 0 otherwise. All regressions control for religion, birth year, and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and corresponding robust p-values are in brackets underneath.

Table A.18: Extensive Margin Effects of the College Expansion on Employment Outcomes for All Residents and Those Who Always Lived in Districts

	RD Estimate (1)	Std. Error (2)	Robust p-value (3)	Dep. Mean (4)	Bandwidth (5)	Eff. Obs. (6)
Panel A: All Residents (Excluding Visitors)						
Women						
Employment	-0.038	(0.014)	[0.002]	0.299	2.655	33,338
Worked all year	-0.020	(0.012)	[0.078]	0.164	2.477	31,337
Worked seasonally	-0.021	(0.009)	[0.009]	0.135	3.970	51,923
Agriculture workforce	-0.008	(0.013)	[0.740]	0.154	2.085	26,574
Non-agriculture workforce	-0.030	(0.012)	[0.016]	0.144	2.283	29,325
Men						
Employment	0.002	(0.012)	[0.655]	0.778	2.226	27,292
Worked all year	0.014	(0.013)	[0.047]	0.614	2.914	36,736
Worked seasonally	0.006	(0.013)	[0.389]	0.199	2.105	25,948
Agriculture workforce	0.001	(0.015)	[0.736]	0.296	2.341	28,621
Non-agriculture workforce	0.001	(0.015)	[0.796]	0.482	2.777	33,029
Panel B: Always lived in Same District						
Women						
Employment	0.083	(0.040)	[0.003]	0.272	1.754	4,723
Worked all year	-0.013	(0.022)	[0.530]	0.139	3.506	9,750
Worked seasonally	0.056	(0.032)	[0.018]	0.132	1.557	4,255
Agriculture workforce	0.090	(0.030)	[0.000]	0.128	1.657	4,436
Non-agriculture workforce	-0.031	(0.028)	[0.375]	0.144	2.493	6,658
Men						
Employment	0.006	(0.013)	[0.708]	0.770	3.102	26,218
Worked all year	0.041	(0.017)	[0.001]	0.583	2.806	23,745
Worked seasonally	-0.023	(0.016)	[0.040]	0.218	2.466	19,886
Agriculture workforce	-0.033	(0.019)	[0.062]	0.318	2.556	20,806
Non-agriculture workforce	0.037	(0.019)	[0.040]	0.453	2.700	22,337

Notes: Data are from NFHS-4. Each column reports results from a separate regression. *Employment* is an indicator equal to 1 if the individual is employed, and 0 otherwise. *Worked All Year* is an indicator equal to 1 if the individual is employed year-round, and 0 otherwise. *Worked Seasonally* is an indicator equal to 1 if the individual is employed seasonally or occasionally, and 0 otherwise. *Agriculture Workforce* is an indicator equal to 1 if the individual's occupation is in agriculture, and 0 otherwise. *Non-Agriculture Workforce* is an indicator equal to 1 if the individual's occupation is in a non-agricultural sector, including professional, technical, and managerial occupations; clerical occupations; sales; services, household and domestic work; and skilled or unskilled manual work, and 0 otherwise. Each column reports results from a separate regression. All regressions control for religion, birth year, and state fixed effects. Each specification uses a linear polynomial and triangular kernel, and *RD Estimate* in each column is estimated using the optimal bandwidth and estimation procedure proposed by Calonico *et al.* (2014, 2022). Standard errors are reported in parentheses and corresponding robust p-values are in brackets underneath.