Factories and Fertility: The Impact of Manufacturing Growth on Son Preference

Rikhia Bhukta*

Abstract

This paper investigates the unintended gendered effects of manufacturing growth in India, focusing on son preference. For identification, I leverage a place-based tax exemption policy under the Finance Act of 1994, which incentivized manufacturing sector investments in backward districts, and employ a regression discontinuity design using three nationally representative datasets. Results show increases in women's stated son preference, likelihood of having at least one son, and son-to-daughter ratios. Higher son preference is mediated through male-biased employment gains in the manufacturing sector, stagnant female employment, reinforced patriarchal gender norms, and dowry inflation. The findings underscore that not all drivers of structural transformation benefit women, as gender norms shape who gains from growth. By documenting these spillovers, this study broadens the understanding of manufacturing policies and their social costs.

Keywords: Manufacturing Growth, Son Preference, Gender Norms, Place-Based Policies, Regression Discontinuity

JEL Codes: J16, O14, J13, O25, R58

There is no conflict of interest or copyright issues in this study. I did not receive any financial support for this study.

*Department of Economic Sciences, Indian Institute of Technology, Kanpur. Email: rikhiab20@iitk.ac.in

1 Introduction

Structural change, defined as the reallocation of labor and resources from low-productivity sectors into the higher-productivity ones, has long been viewed as a central driver of economic development (Lewis et al., 1954; Kuznets, 1971). In particular, the growth of the manufacturing sector has been considered as the 'engine of growth' (Kaldor, 1967), as it facilitates productivity gains through economies of scale, technological spillovers, and integration into global markets (Rodrik et al., 2009; Szirmai, 2013; Marconi et al., 2016). While the positive benefits of manufacturing growth have been well-documented in the literature (Haraguchi et al., 2017; Fan et al., 2003), it is equally important to identify and document its unintended negative spillovers to enable a more balanced cost-benefit evaluation of manufacturing policies. Recent studies highlight that growth of the manufacturing sector, especially in the absence of export-oriented manufacturing, can often reinforce male-biased employment patterns (Klasen and Pieters, 2015; Klasen, 2019; Tejani and Milberg, 2016). These findings hint that the developmental consequences of manufacturing growth cannot be fully assessed without accounting for its unintended effects on gender norms and intra-household dynamics for women, which is still unexplored in the literature. This paper focuses on a particular aspect of this gendered effect of manufacturing growth: son preference and gendered fertility decisions.

I focus on India as the primary context for this study for two key reasons. First, even though India has historically lagged in manufacturing growth compared to other emerging economies, recent policies indicate a renewed manufacturing push (Kumar, 2023). For instance, the Government of India's National Manufacturing Policy seeks to raise the share of manufacturing to 25% of GDP by 2025, accompanied by initiatives like Make in India. Consequently, it becomes crucial to measure both the direct benefits and the potential unintended spillovers of rapid manufacturing growth, and to compare the expected economic gains to possible social costs.

Second, India's persistently skewed female-to-male sex ratio at birth reflects a deep-rooted preference for sons, embedded in cultural norms and practices (Jayachandran, 2023)[1]. In between 1970 and 2020, approximately 142 million girl children went "missing" across the world because of son preference and sex-selective abortion, among which India accounts for 40.3 million girls (Our World in Data, 2024; United Nations Population Fund, 2024). This pattern of son preference is particularly evident in a 2022 Pew opinion poll, where 63% of Indians reported that sons should bear the primary responsibility for their parents' funeral rites, while only 1% felt daughters should assume this role[2] (Evans et al., 2022). Against this backdrop, it is important to investigate if structural changes reinforce such norms, which can be insightful for designing policies to mitigate son preference.

To causally identify the impact of manufacturing growth on son preference, I leverage a place-based policy outlined in the Finance Act of 1994, which provided tax exemptions for new manufacturing industries created in industrially 'backward' districts. The 'backward' districts were identified using the 'gradation score', a composite score calculated using eight infrastructural, financial and industrial indicators of the district[3]. Districts with gradation scores less than 500 were tagged as 'backward' districts, which allows me to employ a regression discontinuity framework.

I use three nationally representative survey datasets to empirically study the impact of this policy on son preference and its potential mechanisms: National Family Health Survey (1998-99), Employment-Unemployment Survey (1999-2000), and Indian Human Development Survey (IHDS). The RD estimates reveal that after the policy implementation, women in treated districts are 10.7 percentage points (pp) more likely to explicitly state their preference for a male child and 5.7 pp more likely to have at least one son. Moreover, the number of sons is 8.9% higher and the son-to-daughter ratio is 6.3% higher in treated/backward districts, compared to the control districts. Using the fertility history, I further find that women without any sons are likely to have more number of births compared to women who already have at least one son.

[1]For details on son preference in India, refer to Section 2.1.
[2]The remaining 35% responded shared responsibility
[3]Gradation score was used as a proxy for the level of industrial development in the particular district.

To understand the mechanisms driving this increase in son preference, I start by exploring the changes in employment patterns in the treated districts with manufacturing growth. Findings indicate a significant improvement in male employment, particularly in the manufacturing sector and in regular employment, after the policy implementation. Specifically, men are 0.4 pp more likely to be in the labor force, 11.8 pp more likely to be employed in the manufacturing sector, and 3.5 pp more likely to be in regular employment. In contrast, changes in female employment are statistically insignificant. These findings are consistent with a large literature, which demonstrates male-biased labor demand associated with manufacturing sector expansion (Klasen and Pieters, 2015; Tejani and Milberg, 2016). This higher economic opportunity for men raises the economic incentives of having a son and further reinforces the gender norms by validating men's role as breadwinners, which is the second channel of impact. I provide empirical evidence towards worsening gender norms, measured by women's mobility and decision-making power. The third channel operates through the marriage market, where higher male earning potential is capitalized on to inflate the dowry. This is empirically shown using indirect dowry measures, such as a 0.5 pp increase in the likelihood of providing wedding gifts by the bride's family, a 33.4% rise in the amount of cash transfers during the wedding, and a 15.5% increase in wedding-related expenses borne by the bride's family. The results are robust to all the standard RD robustness checks, including higher-order polynomial test, placebo cutoff test, bandwidth sensitivity test, donut hole test, and kernel sensitivity test.

This study contributes to the literature in the following ways. First, I contribute to the growing literature that documents the determinants of son preference and policies that mitigate or exacerbate son preference. Bhalotra et al. (2019) study the impact of the land reform policy of West Bengal, and find that even though the policy increased farm incomes at an aggregate level, it further strengthened son preference as an unintended spillover. Bhalotra et al. (2020a) look into the equalization of inheritance rights for women (2005), which was intended to empower women, but ended up reinforcing son preference as the families responded to the policy by eliminating daughters. Lack of old-age pension schemes, dowry inflation, fertility limits, lack of mothers' education, macroeconomic shocks like trade liberalization are some additional factors that increase son preference (Guo et al., 2025; Bhalotra et al., 2020b; Anukriti and Chakravarty, 2019; Pande and Malhotra, 2006; Chakraborty, 2015). We add to this literature by documenting the unintended causal impact of manufacturing sector expansion on son preference.

Second, this paper highlights that not all 'drivers of growth' can uplift women, as patriarchal gender norms determine the extent to which women can participate in and benefit from economic transformation. The rewards of growth are often unequally distributed, with men capturing a disproportionate share of new economic opportunities. This finding strengthens similar arguments found in prior literature (Tejani and Milberg, 2016; Chakraborty, 2015).

Third, I contribute to the literature on place-based policies, which are increasingly being used to reduce spatial disparities (Neumark and Simpson, 2015). Such policies often involve a mix of instruments, including tax breaks and subsidies, targeted grants, the creation of special economic zones or industrial clusters, and investments in infrastructure. Freedman (2013); Busso et al. (2013); Kline and Moretti (2014); Ham et al. (2011); Wang (2013); Shenoy (2018); Chaurey (2017) are a few studies that evaluate different types of place-based policies across the globe. This paper is most closely related to Hasan et al. (2021); Abeberese et al. (2024), who study the impact of the same place-based tax exemption policy on manufacturing growth and migration, respectively.

I organize the rest of the paper in the following ways. In Section 2, I discuss the context of son preference in India, and the policy context. In Section 3, I outline the conceptual framework. Section 4 provides details on the datasets used, Section 5 explains the empirical strategy, Section 6 includes discussions on main results, mechanisms and robustness checks, and finally, Section 7 concludes.

2 Background

2.1 Son Preference in India

Son preference is a deep-rooted social norm in many developing countries like India, which plays a significant role in shaping households' fertility decisions (Gupta, 2002; Watts, 2024). It arises from an amalgam of economic, social, and cultural factors that assign a higher value to sons relative to daughters. Sons are traditionally viewed as economic assets, expected to contribute to household income, inherit family property, provide old-age support to their parents, and perform funeral rites, whereas daughters are often perceived as financial burdens due to widespread dowry practices (Das Gupta, 2010; Bhalotra et al., 2020b; Jayachandran, 2023). Son preference is often exercised through son-biased fertility-stopping behavior and sex-selective abortion (Anukriti et al., 2021; Filmer et al., 2009; Bhalotra and Van Soest, 2008; Clark, 2000).

Son preference has historically manifested in skewed sex ratios at birth and systematic discrimination in the allocation of household resources (Jayachandran, 2017). In India, the sex ratio at birth stands around 110 boys for every 100 girls (based on data from 2000-2020), which is abnormal compared to the normal ratio of 105 to 100 (Pew Research Center, 2022). Daughters are also more likely to experience parental neglect in nutrition, healthcare, and education, resulting in excess female mortality and persistent gender gaps in human capital formation (Sen, 2017; Pande and Astone, 2007; Jayachandran and Kuziemko, 2011). Desai (2024) finds that girls are approximately 42% less likely to receive primary education compared to boys in India. Apart from these direct impacts on girls, son preference is also proven to worsen mothers' mental health and well-being (Anukriti et al., 2025). Daughters growing up in such environments often internalize these norms, which perpetuates a cycle of mental health challenges (Dhar et al., 2019). Advancements in prenatal sex determination technologies in the early 1990s have worsened the problem, enabling parents to opt for sex-selective abortion (Bhalotra and Cochrane, 2010). But due to its widespread misuse, the Government of India has banned prenatal sex-determination through the Pre-Conception and Prenatal Diagnostic Techniques (PCPNDT) Act in 1994.

2.2 Policy Context: Finance Act of 1994

The geography of industrial development in India has historically been uneven, with industrial activity clustering around major urban centers and disproportionately favoring a few states, which often led to regional disparity in overall state domestic products (Ghosh et al., 1998). In the post-liberalization era, the government identified the importance of tax benefits for industrial growth, and accordingly, set up an ad-hoc study group under the Ministry of Finance to identify industrially backward districts. Based on the recommendations of this group, a composite ”gradation score” was calculated for each district. This score was a weighted average of eight indicators across three dimensions: financial, industrial, and infrastructural[4]. The financial indicators comprised per capita credit extended by scheduled commercial banks and per capita deposit received by those banks. The industrial indicators included the number of employed factory workers per 1000 population and per capita gross value added in the manufacturing sector. Finally, the infrastructural indicators consisted of the number of telephone connections per 1000 population, ratio of urban population to total population, power consumption per capita and road density (measured by kilometers of roads per 100 square km.). Data for all these indicators were taken from the 1991 census of India.

Districts with a gradation score of 500 or below were tagged as “backward.” However, three districts were granted backward status despite having scores above this threshold: Idukki and Wayanad in Kerala, and Jalpaiguri in West Bengal. In each case, government discretion was exercised on the grounds that these districts either had “no industries”, were located in “inaccessible hill areas”, or lacked a “railhead” as on 1st April, 1994 (Hasan et al., 2021). Out of 360 districts

[4]Details of the weights used and calculation of the gradation score can be found in Appendix III of the Income Tax Act; Notification of Ministry of Finance, Department of Revenue, GOI, S.O. 635 (E).

across 14 states[5], 123 districts received the 'backward' status, while the remaining 237 did not.

As outlined in Section 80-IA of the Income Tax Act, this place-based tax policy in the Finance Act of 1994 offered tax concessions for new industrial enterprises located in backward districts. Eligible firms in those districts were granted a complete exemption from income tax on 100 percent of profits for their first five assessment years, independent of their ownership form. Thereafter, the benefits varied by organizational structure: companies incorporated under the Companies Act (public or private) would be exempted from tax for 30 percent of profits for an additional five years, while unincorporated entities would be exempted for 25 percent of profits over the same period. To qualify for this tax benefit, the enterprises needed to commence operations (manufacturing/production/operating cold storage facilities) between October 1, 1994, and March 31, 2000[6].

The tax exemptions offered under this program represented a sizable incentive to set up new manufacturing units, especially in the context of the 1990s, when corporate tax rates were as high as 40-45% (Rao et al., 2005). Using a regression discontinuity design, Hasan et al. (2021) show that this tax benefit program led to higher rates of firm entry and employment in the backward districts, majorly in the light manufacturing sector. They identified relocation of economic activities from nearby districts as a key mechanism. Complementing this evidence, Abeberese et al. (2024) document that the program also increased job-related migration, much of which took the form of job transfers.

[5]The analysis excludes northeastern states and union territories.

[6]Certain activities, however, were explicitly excluded, including the production of tobacco products, alcoholic spirits, confectionery, and aerated beverages.

3 Conceptual Framework

From the existing literature, I identify the channels through which a structural transformation led by manufacturing growth can affect son preference behavior. In this section, I discuss these channels in detail.

As per Becker's household utility framework, families make fertility decisions and update their son preference behavior based on the relative returns to sons compared to daughters (Becker, 1960, 1993). When economic opportunities and labor market returns disproportionately favor men, the perceived value of sons rises relative to daughters, leading to a higher degree of son preference. This pattern is especially pronounced in the context of manufacturing-led growth. As argued by Klasen and Pieters (2015); Klasen (2019), employment in the manufacturing sector, especially in India, remains heavily male-dominated, with employment concentrated in physically intensive or unionized industries that traditionally exclude women. A similar pattern is documented by Tejani and Milberg (2016), who show that changes in the labor or capital intensity of manufacturing due to industrial expansion introduce male-bias in labor demand[7], which they term as 'global defemenization in manufacturing labor'. On the other hand, women working in the manufacturing and construction sectors are often subjected to social stigma (Klasen and Pieters, 2015), which acts as an additional barrier to their participation in the manufacturing sector employment. This male-biased labor demand in manufacturing growth raises the economic incentives to invest in sons, rather than daughters.

Increases in male employment can also plausibly impact the patriarchal gender norms within the society. It can strengthen the existing gender division and validate the traditional stereotypes of men being breadwinners and women being dependents. This, in turn, increases the relative value that society puts on a son compared to a daughter, which can further reinforce son preference.

[7] In contrast, service-sectors or white-collar jobs tend to me more gender-neutral, and help in mitigating gender inequality in employment (Heath and Jayachandran, 2016)

Another channel connecting manufacturing growth to son preference operates through the marriage market. According to the marriage market framework of Becker (1960), an increase in male earning potential raises men's 'value' as grooms, which can fuel dowry inflation in patrilineal societies. Anderson (2007) and Botticini and Siow (2003) document that higher male wages are often capitalized into higher dowry transfers by the bride's family. This turns out to be an additional (future) cost of raising daughters, and adds to the economic disincentives of having a girl child. Therefore, dowry inflation is a potential channel driving the son preference.

4 Data

4.1 National Family Health Survey

The National Family Health Survey (NFHS) is a large-scale and multi-round survey, designed to provide information on fertility, demographic, health, and household characteristics in India. The survey rounds are overseen by the Ministry of Health and Family Welfare (MoHFW), with the International Institute for Population Sciences (IIPS), Mumbai, acting as the coordinating agency. The first round of NFHS was conducted in 1992-93, and the latest (fifth) round in 2019-20.

For the present study, I use the second round of NFHS, which was conducted in 1998-1999 (IIPS, 2000). A nationally representative sample was collected, which consists of 99% of India's population residing in 26 states[8]. Over 90,000 ever-married women aged between 15 and 49 were interviewed, and a wide range of indicators on their autonomy, fertility choices, and family planning behavior were collected. In addition, for the purpose of pre-policy smoothness checks, I use NFHS-1, conducted in 1992-93, before the implementation of the 1994 tax exemption policy.

For the purpose of implementing the RD specification, I merge NFHS-2 with the district-level

[8]NFHS 2 did not cover any union territories.

gradation score information[9]. I draw the main outcomes of son preference from NFHS-2, which included both stated and revealed son preference indicators (Bhalotra et al., 2019). The stated son preference variable is derived from the survey question on the woman's sex preference for the next child. The binary indicator of stated son preference takes the value 1 if the woman answers 'boy', and 0 if the woman answers 'girl' or 'does not matter'. For revealed son preference measures, I use information on the fertility history of the woman to derive (i) a binary indicator of the woman having at least one son, (ii) the total number of sons, (iii) the ratio of total number of sons to total number of daughters, and (iv) the number of births since 1995. For the fourth variable, I bifurcate the sample into two parts: women having at least one son and women having no son, to understand the fertility behavior under son preference in more detail. The summary statistics of these outcome variables are reported in Panel A of Table 1. From NFHS-1, I construct similar variables to check for pre-policy smoothness.

Apart from fertility outcomes, NFHS-2 collects a rich set of information on women's autonomy, mobility, and intra-household bargaining power, which represents the overall gender norm in the community. To understand the mechanisms, I use the following measures of gender norms: (i) a binary indicator taking the value 1 if the woman can go to market alone, without having to take permission from any household members, (ii) a binary indicator of the woman's ability to visit any friend's house alone, (iii) a binary indicator taking value 1 if the woman has a say in the decisions on household expenditure, 0 otherwise, (iv) a binary indicator of the woman's say in cooking, and (v) a binary indicator of the woman's say in the decision to stay with her family. The first two indicators capture women's mobility and freedom of movement, which the remaining three indicators represent women's decision-making power and intra-household bargaining power. The summary statistics of these variables are also presented in Panel A of Table 1.

[9] Six districts (Lohardaga, Panna, Osmanabad, Gadchiroli, Lalitpur and Uttarkashi) were in the gradation score data, but not in NFHS. Therefore, these districts are not there in the final merged file.

4.2 Employment Unemployment Survey (1999-2000)

The Employment-Unemployment (EU) survey is a quinquennial survey conducted by the National Sample Survey Office (NSSO). The first EU survey was carried out in 1972-73 (NSS 27th round), and the last one in 2009-10 (NSS 66th round), before being replaced by the Periodic Labor Force Survey. EU surveys are the primary source of labor market statistics at the national and state level, and the workforce participation data at the household level.

For this study, I use the sixth round of EU survey (NSS 55th round), conducted between July 1999 and June 2000 (NSSO, 2001). The survey covered all states and union territories in India. The individuals surveyed were assigned three different activity statuses: (i) usual status, (ii) current weekly status, and (iii) current daily status, based on the reference periods of (i) past year, (ii) past week, and (iii) each day of the reference week, respectively. I use the 'usual status' to construct labor market outcomes, to be used as mechanism variables.

To understand the gendered change in the labor market in response to the 1994 policy, I bifurcate the sample for women and men, and examine the following labor market outcomes: (1) A binary indicator taking the value 1 if the individual is in the labor force (currently employed/searching for jobs), 0 otherwise; (2) a binary indicator taking the value 1 if the individual is employed in the manufacturing sector[10], 0 otherwise; (3) a binary indicator for regular employment (wage/salary work), (4) a binary indicator for casual employment (in public work/other type of work), (5) a binary indicator for paid self-employment (own account worker/employer), and (6) a binary indicator for unpaid self-employment (helper in household enterprises). The summary statistics of these variables are presented in Panel B of Table 1.

[10]We use the NIC-1998 codes given in the dataset to identify manufacturing sector employment. As per NIC-1998, the manufacturing sector is defined to include industries classified under Divisions 15 to 37, corresponding to the first two digits of the five-digit NIC code.

4.3 Indian Human Development Survey (2004-05)

Indian Human Development Survey (IHDS) is a nationally representative survey, covering a wide range of socioeconomic outcomes such as income, consumption, education, health, fertility, employment, gender relations, and child health. It is a collaborative project of the University of Maryland, the National Council of Applied Economic Research (NCAER), Indiana University, and the University of Michigan. The panel survey was conducted in two waves, 2004-05 and 2011-12. For the present study, I use the first wave of IHDS (2004-05), which covered 41,554 households spread across 1,503 villages and 971 urban blocks in 384 districts of India[11].

One distinguishing feature of IHDS is that it captured dowry practices in the community through a few indirect questions (Bhukta et al., 2025). Households were asked to provide detailed information on the types of wedding gifts given in the community at the time of the daughter's marriage[12] (gold, silver, car, motorcycle, household appliances, furniture, etc.) and the cash amount that is generally gifted to the groom's family. Information on the upper and lower limits of wedding expenditure was also recorded. We use this set of information to analyse the impact of the policy on the dowry outcomes. Particularly, we use the following four variables to capture dowry: (i) wedding gift, a binary variable 1 taking the value 1 if any gifts are generally given during the daughter's wedding, 0 otherwise; (ii) cash amount given as a gift (in Rs.), (iii) Max (upper limit) of the wedding expenditure borne by the bride's family (in Rs.), and (iv) Min (lower limit) of the wedding expenditure b orne by the bride's family (in Rs.). The last three variables are measured in the amount of Indian Rupees, and are winsorized at 1% and 99% to avoid extreme values. The summary statistics of these variables are presented in Panel C of Table 1.

[11] There were 593 districts in India in 2001, out of which 384 were covered by IHDS-1

[12] The households' responses to these questions are captured as categorical variables for each gift type, coded as 1 for never/rarely, 2 for sometimes, and 3 for often. I transform these variables into binary variables that takes the value 0 for never/rarely, and 1 for sometimes/often.

5 Methodology

5.1 Regressin Discontinuity Design

For identification, I leverage the place-based tax policy outlined in the Finance Act of 1994, which gave tax exemptions to newly established manufacturing units in industrially backward districts. To identify the backward districts, the government calculated gradation scores for each district[13] and districts scoring less than 500 were tagged as backward districts. The regression discontinuity design exploits this exogenous threshold of 500, with the gradation score serving as the running variable and the cutoff set at 500.

However, there were three districts that received the backward status despite their gradation scores being more than 500 (Idukki, Wayanad, and Jalpaiguri). This makes the treatment assignment probabilistic (not deterministic), and therefore, I adopt a fuzzy regression discontinuity design following Lee and Lemieux (2010); Dong and Lewbel (2015). I use the specification in Equations 1 and 2 to estimate the impact of the 1994 tax exemption policy.

$$Backward_{d,s} = \beta_0 + \beta_1 Below_{d,s} + \beta_2 Score_{d,s} + \beta_3 Below_{d,s} Score_{d,s} + \theta_s + e_{d,s} \quad (1)$$

$$Y_{i,h,d} = \delta_0 + \delta_1 Backward_{d,s} + \delta_2 Score_{d,s} + \delta_3 Below_{d,s} Score_{d,s} + \lambda X_{i,d,s} + \alpha_s + u_{i,d,s} \quad (2)$$

$Backward_{d,s}$ is a binary indicator that takes the value 1 if district d in state s is listed as 'backward' district in the policy document, and 0 otherwise. $Below_{d,s}$ is another binary indicator, taking the value 1 if the gradation score of district d is below or equal to 500, and 0 otherwise. $Backward_{d,s}$ and $Below_{d,s}$ are not the exact same because of the three districts where the treatment assignment rule (gradation score being less than or equal to 500) was not followed. $Score_{d,s}$

[13] See section 2.2 for details of gradation score calculation.

is the gradation score received by district d (the running variable). $Y_{i,d,s}$ is the outcome variable of individual i residing in district d and state s, and $X_{i,d,s}$ is a vector of control variables.

State fixed effects are included in all the regressions. The standard errors are clustered at the level of treatment, i.e., at the district level Abadie et al. (2023). Following Calonico et al. (2020), I use the MSE-optimal method to choose the optimal bandwidth. The bandwidth lengths are dependent on the specific outcome variable (Cattaneo and Vazquez-Bare, 2017) and are reported for each outcome in the regression tables. Additionally, linear specifications are estimated within each bandwidth (Gelman and Imbens, 2019). Under the identifying assumption, the coefficient δ_1 captures the local average treatment effect (LATE) of belonging to a 'backward' district.

5.2 Validity of Identifying Assumptions

The validity of RD estimates from the above specification depends on the crucial assumption that backward (treated) and non-backward (control) districts around the proximity of the cutoff are similar in all characteristics except their backward/non-backward status, so that the treatment status can be considered as good as randomized. In other words, this assumption is valid if the local government/district administration units have no power to manipulate the gradation scores to gain the backward district status to receive tax benefits. In this section, we explain in detail, both intuitively and statistically, why the manipulation around the cutoff is not possible in this context.

Intuitively, the gradation scores (running variable) for each district were calculated by the central government using eight financial, industrial, and infrastructural indicators. The data for these indicators came from the 1991 census, which was conducted 3 years before the policy implementation. Therefore, it is logically impossible for the state/district governments to manipulate the calculation of the running variable (Hasan et al., 2021).

To further verify the identifying assumption statistically, we check the density of the running variable around the cutoff. As shown in the histogram in panel (a) of Figure 1, there is no visible bunching of the running variable near the cutoff (depicted by the vertical red line). Moreover, we formally test this 'smoothness around the cutoff' assumption using McCrary test, as outlined in McCrary (2008). The null hypothesis for this test is the continuity of the running variable around the cutoff. As per my estimation, the p-value associated with the McCrary estimate is 0.6652, which implies a failure to reject the null hypothesis. This enables me to conclude that there is no statistical evidence of manipulation around the cutoff. The test results are also formally shown in panel (b) of Figure 1.

Another way to check for the identifying assumption is pre-policy smoothness of the outcome variables, which requires the difference between treated and control units to be statistically insignificant for any time period before the policy implementation. I check this empirically, for the main outcome variables, using the first round of NFHS (1992-93). The results of the pre-policy smoothness checks are presented in Table 2. As expected, the RD estimates are statistically insignificant, which implies that the identifying assumption strongly holds for the RD design.

6 Results

6.1 Impact of Manufacturing Growth on Son Preference

In this section, I discuss the impact of manufacturing growth led by the 1994 tax exemption policy on son preference. The RD estimates are presented in Table 3, and the corresponding RD plots are shown in Figure 2. I control for women's age, caste category, religion, literacy, area of residence (rural/urban), household size, wealth index of the household, and gender of household head. State fixed effects are included in all the specifications, and the standard errors are clustered at the level of treatment (district-level).

In column 1 of Table 3, the outcome variable is stated son preference, coded as 1 if the woman explicitly reports wanting her next child to be a son and 0 otherwise[14]. The coefficient suggests that women in treated/backward districts are 10.7 percentage points (pp) more likely to directly state their preference for a male child, which translates to a 24.2% increase compared to the control mean. A similar measure of stated son preference from NFHS data has been used previously by Bhalotra et al. (2020a).

In addition to stated son preference, in columns (2)-(6), I look at revealed son preference indicators using fertility history. I find that women in treated districts are 5.7 pp more likely to have at least one son (7.67% increase compared to the control mean). The RD-coefficient for the total number of sons is 0.134, which indicates an 8.92% increase compared to the control mean of 1.501. Similarly, the son-to-daughter ratio rises by 6.65% compared to the control mean of 1.055, which hints towards a higher son preference.

Next, I examine the total number of births since 1995, which accounts for all the births after the policy implementation. To better understand the son preference pattern, I bifurcate the sample into two groups: women with at least one son and women without any sons. RD estimates reveal that women without any sons have 12.3% more number of births compared to the control group average of 0.580. In contrast, the effect on the number of post-policy births is statistically insignificant for women with at least one son. This finding aligns with Jayachandran (2017, 2023), who emphasize that son preference in India reflects a desire for at least one son rather than for all children to be male. It is also consistent with son-biased fertility stopping behavior, which suggests that parents continue childbearing until a son is born (Filmer et al., 2009; Bhalotra and Van Soest, 2008; Clark, 2000).

[14]The number of observations in Column 1 is lower than in the other columns because many women did not answer the direct question on gender preference for the next child; for these cases, the outcome variable is coded as missing.

6.2 Mechanisms

In this section, I attempt to explain the increased son preference caused by manufacturing growth. I highlight three main mechanisms that potentially drive the findings: (i) male-biased employment in the labor market, (ii) worsening of gender norms, and (iii) dowry inflation caused by higher earning potential for men. Below, these three channels are discussed in detail.

6.2.1 Labor Market Channel

I use the employment-unemployment survey (1999-2000) to look at the labor market response to the policy change. In Table 4, I present the impact of the manufacturing growth on the employment of women and men, in panels A and B, respectively. Six binary indicators of employment details are used to capture the probabilities of being in the labor force, being employed in the manufacturing sector, having regular employment, casual employment, paid self-employment, and unpaid self-employment.

For men, the likelihood of being in the labor force (employed/seeking employment) increases by 0.4 pp. Additionally, the likelihood of being employed in the manufacturing sector rises by 11.8 pp, which translates into approximately 78% increase relative to the control mean. This sizable effect can be attributed directly to the tax exemption policy (1994), which was designed to specifically target the manufacturing sector (Hasan et al., 2021). I also find that an increase in the likelihood of regular employment by 3.5 pp, and a decline in the unpaid self-employment by 4 pp, which indicates a formalization of the labor market, and higher income potential for men. In contrast, for women, there is no statistically significant impact on labor force participation. In fact, there is weak evidence of a decline in casual employment, which is marginally significant at the 10% level.

Combined together, these findings align with prior evidence from Tejani and Milberg (2016);

Rau and Wazienski (1999), who document that the expansion of the manufacturing sector is often accompanied by a decline in female labor force participation. Moreover, Craigie and Dasgupta (2017) demonstrate that gender disparities in labor market opportunities can reinforce son preference, a mechanism that plausibly is operating in the present context as well.

6.2.2 Change in Gender Norms

The male-biased employment expansion in Section 6.2.1 enhances the economic opportunities of men and thereby increases the economic incentives of having sons compared to daughters. Moreover, it can strengthen the existing gender division and validate the societal stereotype that men should be the breadwinners and women should be homemakers. This can worsen the restrictive gender norms imposed on women and further reinforce son preference. In Table 5, I examine the impact of the policy on some indicators of gender norms using NFHS data.

Columns 1 and 2 report the impacts on women's mobility, which is a key dimension of autonomy shaped by prevailing gender norms (Sedai et al., 2021; Bhukta et al., 2024). The estimates suggest that, after the policy implementation, the likelihood of women being able to go to market alone reduces by 6.3 pp (a 16.11% reduction compared to the control mean), and the same for the ability to visit a friend's house alone falls by 8 pp (27.8% change relative to the control mean).

Columns 3–5 present the effects on women's intra-household decision-making power in household expenditure, cooking, and staying with her family. I find a 10.5 pp reduction in the likelihood of women having a say in the household spending decisions, and a 5.2 pp decline in their say in cooking-related decisions. Women's role in the decision regarding staying with their family also shows the same declining trend, even though the coefficient is not statistically significant.

6.2.3 Dowry and Marriage Market Channel

Lastly, I investigate the changes in the marriage market in response to the policy. Male-biased demand in the labor market raises men's earning potential, and thereby increases their 'value' as grooms. This can lead to a higher dowry being demanded from the bride's family, as argued by Anderson (2007) and Botticini and Siow (2003). Dowry inflation, in turn, can strengthen son preference by increasing the perceived cost of raising daughters Bhalotra et al. (2020b).

I use four indirect measures of dowry from the IHDS data, and present their RD estimates in Table 6. The likelihood of the bride's family presenting one or more wedding gifts (including gold, silver, car, motorcycle, furniture, and household appliances) to the groom's family increases by 0.5 pp. The amount of cash given as a gift to the groom's family also increases by INR 9471, a 3.9% increase relative to the control mean. Similarly, both the maximum and minimum wedding expenditure typically borne by the bride's family in the community rise by 15.5% and 10.28%, respectively. Taken together, these findings indicate a dowry inflation in response to manufacturing growth, which potentially triggers son preference.

6.3 Robustness Checks

In this subsection, I discuss the series of robustness checks done for the RD-estimates discussed in Sections 6 and 6.2. The robustness tables for main outcome variables (son preference) are in the main text, and the same tables for the remaining mechanism outcomes are in the appendix.

First, I check the robustness to higher-order polynomials. For the main specification, linear estimates are presented because higher-order polynomials often generate noisy estimates and incomplete coverage of the confidence interval, leading to poor inference (Gelman and Imbens, 2019). Therefore, I restrict to only checking second-order polynomial estimates in Tables 7, A1, A2 and A3. Most of the estimates remain consistent with the main results and retain their statistical significance.

Second, two placebo cutoffs are used (460 and 550), instead of the cutoff specified in the policy (500). RD-estimates with these placebo cutoffs are presented in Tables 8, A4, A5 and A6. As expected, these placebo cutoff estimates are statistically insignificant.

Third, I check the sensitivity of the estimates with respect to the kernel function. In the main specification, triangular kernel is used as it has the optional asymptotic properties Cattaneo et al. (2019). The triangular kernel function assigns greater weight to observations that lie closer to the cutoff within the specified bandwidth, while observations outside the bandwidth receive no weight. For robustness, I use two alternative kernel functions: (1) Epanechnikov kernel, which assigns quadratically declining weights to observations within the bandwidth, and excludes those beyond the bandwidth, and (2) Uniform kernel, which gives equal weight to all the observations within the bandwidth. Tables 9, A7, A8 and A9 present RD-estimates with these two alternative kernel functions, which remain consistent with the main results.

Fourth, the results are robust to the choice of bandwidth selection method. Following Calonico et al. (2020), the Mean-square-error (MSE)-optimal method is used to select the optimal bandwidth in the main specification. An alternative method is Coverage-error-rate (CER) Calonico et al. (2020)[15]. While MSE targets to minimize the mean square error of the point estimator, the CER bandwidth selector aims to minimize the coverage error of the interval estimator (Calonico et al., 2020). RD-estimates using CER method are furnished in Tables 10, A10, A11 and A12.

Fifth, I check the sensitivity to bandwidth lengths. Following Imbens and Lemieux (2008), two bandwidth multipliers are considered: 2x and 0.5x. This implies that if the bandwidth is x in the main results, then two additional RD estimates with bandwidth lengths 2x and 0.5x are computed for robustness. These estimates are presented in Tables 11, A13, A14 and A15. The results are majorly robust to the bandwidth multipliers.

15

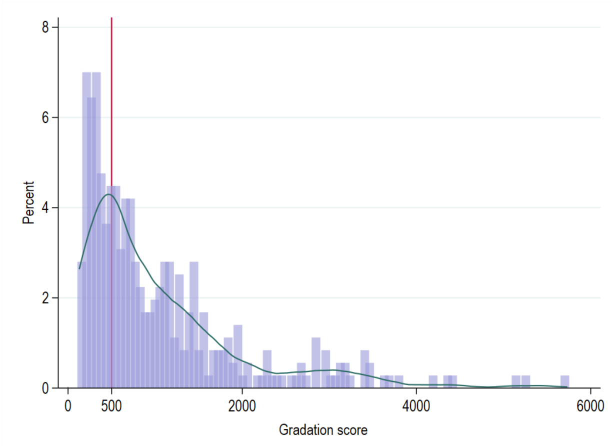
Lastly, following Cattaneo et al. (2023), I carry out the donut hole test to check if the main results are driven dominantly by the observations closest to the cutoff. The donut is constructed by omitting the closest 1% observations from both sides of the cutoff (Dowd, 2021). RD-estimates using this donut sample are presented in Table 12, which remain consistent with the main results.

7 Conclusion

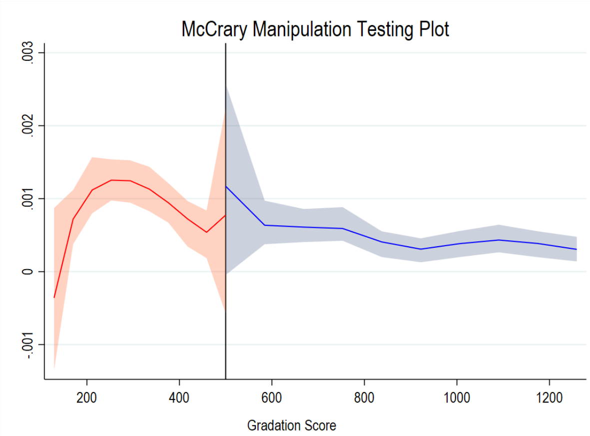
In this paper, I study a previously unexplored unintended consequence of manufacturing growth, its impact on son preference in India. Using three nationally representative datasets, I employ a regression discontinuity framework to causally estimate the impact. I find that son preference is reinforced by manufacturing growth. Three channels are identified in the paper, which plausibly drive this increase in son preference. First, manufacturing growth creates a male-biased demand in the labor market, which leads to employment gains for men and raises the expected future benefits of having a son. Second, higher male employment opportunities reinforce the traditional gender norms. And third, the increase in earning potential for men increases their value in the marriage market, causing dowry inflation. This increases the cost of raising a daughter, which consequently reinforces son preference. The results are robust to all standard regression discontinuity checks, including pre-policy smoothness, second-order polynomial, placebo cutoffs, bandwidth selector and bandwidth multiplier checks, kernel sensitivity, and donut hole test.

The findings highlight that not all drivers of structural transformation benefit women, as gender norms play an important role in determining who gains from growth. By documenting these spillovers, this study broadens the understanding of manufacturing policies and their possible social costs, which can be incorporated in the cost-benefit analysis of related policymaking.

8 Figures

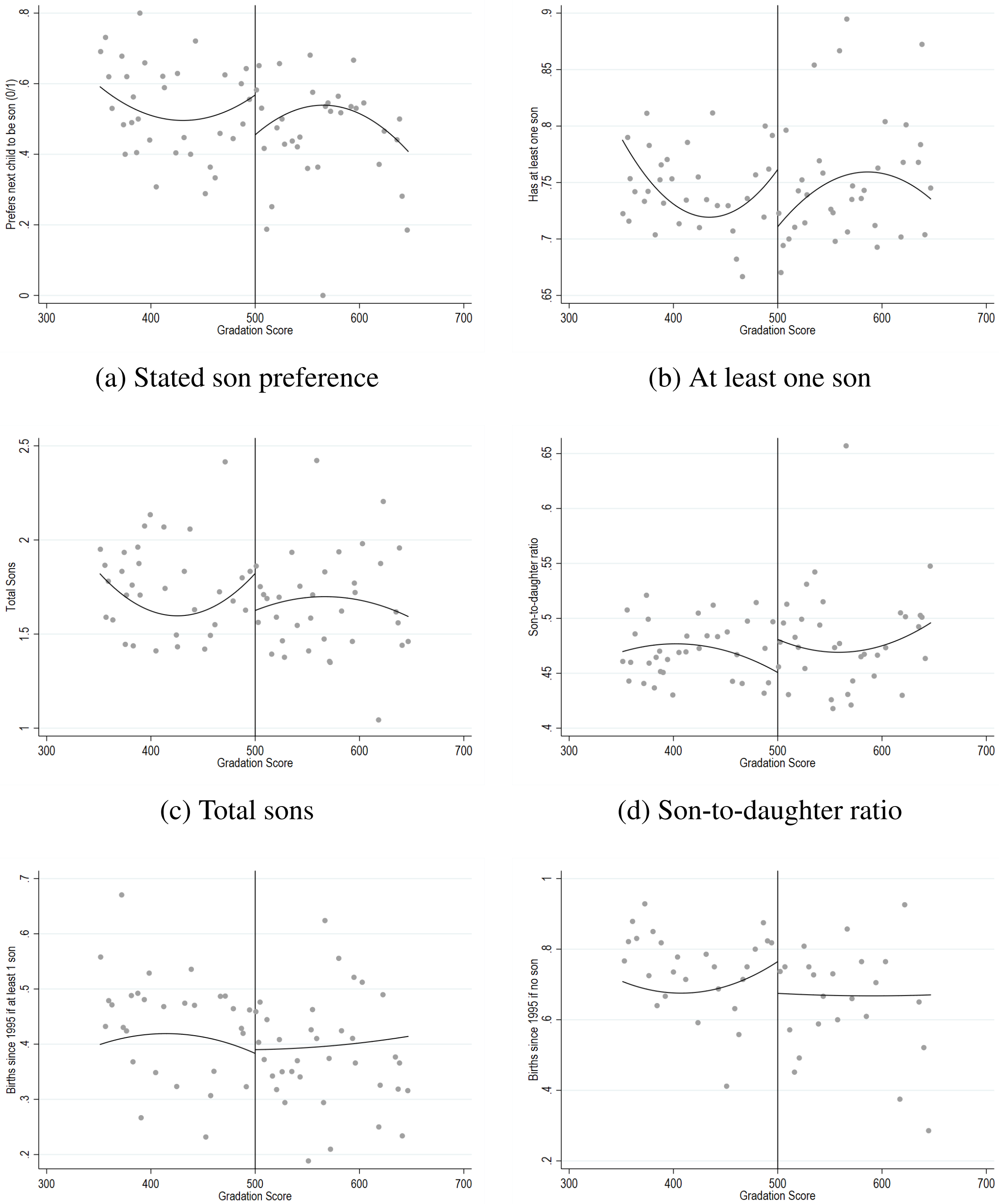


(a) Histogram



(b) McCrary Test

Figure 1: Validity of Identifying Assumption



(a) Stated son preference

(b) At least one son

(c) Total sons

(d) Son-to-daughter ratio

(e) Births if atleast 1 son

(f) Births if no son

Figure 2: RD plots for son preference outcomes

9 Tables

Table 1: Summary Statistics

	Obs	Mean	Std. Dev.	Min	Max
A. NFHS-2					
Prefers boy child	19465	.487	.5	0	1
Has at least 1 son	67195	.742	.438	0	1
Total no. of sons	67195	1.561	1.343	0	11
Son-to-daughter ratio	59795	.483	.322	0	1
No. of birth since 1995	59795	.416	.493	0	1
Can go to market alone	67182	.333	.471	0	1
Can visit friends alone	67180	.254	.435	0	1
Say in HH spending	16593	.704	.456	0	1
Say in cooking	67188	.853	.354	0	1
Say in staying with family	67165	.482	.5	0	1
B.1. EU - Male sample					
In labor force	156927	.994	.075	0	1
Employed in manufacturing	150550	.121	.326	0	1
Regular employment	156031	.22	.414	0	1
Casual employment	156031	.235	.424	0	1
Paid self employment	156031	.51	.5	0	1
Unpaid self employment	156031	.132	.338	0	1
B.2. EU - Female sample					
In labor force	157620	.316	.465	0	1
Employed in manufacturing	47950	.107	.309	0	1
Regular employment	49849	.139	.346	0	1
Casual employment	49849	.316	.465	0	1
Paid self employment	49849	.506	.5	0	1
Unpaid self employment	49849	.341	.474	0	1
C. IHDS					
Wedding gift by bride's family	29787	.997	.053	0	1
Cash amount as gift	25958	27093.226	45770.624	0	300000
Wedding expenditure upper limit	29788	115656.79	109219.41	8000	600000
Wedding expenditure lower limit	29754	89495.251	84666.575	5000	500000

Note: Data source: National Family Health Survey of 1998-99 (panel A), Employment Unemployment Survey of 1999-2000 (panels B.1 and B.2) and Indian Human Development Survey of 2004-05 (panel C). Source: Author's calculation

Table 2: Pre-policy smoothness of son preference outcomes

	(1)	(2)	(3)	(4)	(5)	(6)
	Prefers boy child (0/1)	Has atleast one son (0/1)	Total number of sons	Son to daughter ratio	No. of births since 1995 if	
					Has atleast one son	Does not have any son
RD-estimate	0.035	0.050	0.167	0.023	0.114	-0.067
	(0.076)	(0.031)	(0.201)	(0.020)	(0.090)	(0.045)
Observations	21599	67642	67642	59453	50723	16919
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.475	0.753	1.549	0.474	0.441	0.376
Bandwidth	160.2	89.53	126.3	109.3	93.31	115.1
Effective Obs.	5252	8857	11838	8630	6613	2804

Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: NFHS 1992-93. Source: Author's calculation.

Table 3: Impact of manufacturing growth on son preference

	(1)	(2)	(3)	(4)	(5)	(6)
	Prefers boy child (0/1)	Has atleast one son (0/1)	Total number of sons	Son to daughter ratio	No. of births since 1995 if	
					Has atleast one son	Does not have any son
RD-estimate	0.107***	0.057***	0.134**	0.067*	-0.021	0.071***
	(0.036)	(0.014)	(0.055)	(0.040)	(0.014)	(0.022)
Observations	19465	67195	67195	47620	49851	9944
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.442	0.744	1.501	1.055	0.345	0.580
Bandwidth	135.3	62.81	80.98	131	80.37	143
Effective Obs.	3743	5246	6831	7882	5013	1835

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: NFHS 1998-99. Source: Author's calculation.

Table 4: Impact of manufacturing growth on the employment of females and males

	(1)	(2)	(3)	(4)	(5)	(6)
	In labor force (0/1)	Manufacturing sector emp. (0/1)	Regular emp. (0/1)	Casual emp. (0/1)	Paid self emp. (0/1)	Unpaid self emp. (0/1)
A. Female Sample						
RD-Estimate	0.056	0.058	0.030	-0.075*	0.072	-0.015
	(0.063)	(0.036)	(0.027)	(0.045)	(0.045)	(0.046)
Observations	121046	37796	39078	39078	39078	39078
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.331	0.124	0.144	0.357	0.459	0.321
Bandwidth	132.1	102.2	89.15	104.4	104.2	98.92
Effective Obs.	18358	4834	4556	4993	4993	4936
B. Male Sample						
RD-Estimate	0.004*	0.118***	0.035**	-0.014	-0.024	-0.040*
	(0.002)	(0.019)	(0.017)	(0.018)	(0.024)	(0.023)
Observations	119281	114765	118682	118682	118682	118682
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.996	0.150	0.243	0.246	0.476	0.124
Bandwidth	91.30	63.04	123	107.3	156.7	80.78
Effective Obs.	12984	8679	16599	14645	22124	11934

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: Employment Unemployment Survey of 1999-2000. Source: Author's calculation.

Table 5: Impact of manufacturing growth on gender norms

	(1)	(2)	(3)	(4)	(5)
	Can go to market alone (0/1)	Can visit friends alone (0/1)	Say in HH spending (0/1)	Say in cooking (0/1)	Say in stay with family (0/1)
RD-Estimate	-0.063*	-0.080**	-0.105***	-0.052*	-0.055
	(0.037)	(0.040)	(0.037)	(0.030)	(0.042)
Observations	67182	67180	16593	67188	67165
State FE	Yes	Yes	Yes	Yes	Yes
Control Mean	0.391	0.287	0.715	0.868	0.511
Bandwidth	139.4	103	107.1	155.9	132.3
Effective Obs.	12515	9455	2513	14797	11001

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: NFHS 1998-99. Source: Author's calculation.

Table 6: Impact of manufacturing growth on dowry

	(1)	(2)	(3)	(4)
	Wedding gift (0/1)	Cash amount given as gift (Rs.)	Wedding expenditure (max) (Rs.)	Wedding expenditure (min) (Rs.)
RD-Estimate	0.005***	9,470.968***	18,855.992**	9,605.933
	(0.001)	(1,260.580)	(9,025.946)	(7,144.583)
Observations	29787	25958	29788	29754
State FE	Yes	Yes	Yes	Yes
Control Mean	0.997	28337	121496	93431
Bandwidth	176.8	108	92.55	99.76
Effective Obs.	6328	3345	3376	3706

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: Indian Human Development Survey of 2004-05. Source: Author's calculation.

Table 7: Son preference estimates with second-order polynomial

	(1)	(2)	(3)	(4)	(5)	(6)
	Prefers boy child (0/1)	Has atleast one son (0/1)	Total number of sons	Son to daughter ratio	No. of births since 1995 if	
					Has atleast one son	Does not have any son
RD-estimate	0.125***	0.069***	0.186***	0.074	-0.025	0.062**
	(0.046)	(0.017)	(0.056)	(0.046)	(0.015)	(0.028)
Observations	19465	67195	67195	47620	49851	9944
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.442	0.744	1.501	1.055	0.345	0.580
Bandwidth	181.7	139.3	152.1	187.9	158.4	206.9
Effective Obs.	5531	12518	14321	13330	11329	2716

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: NFHS 1998-99. Source: Author's calculation.

Table 8: Son preference RD-estimates with placebo cutoffs

	(1)	(2)	(3)	(4)	(5)	(6)
	Prefers boy child (0/1)	Has atleast one son (0/1)	Total number of sons	Son to daughter ratio	No. of births since 1995 if	
					Has atleast one son	Does not have any son
A. Cutoff=460						
RD-estimate	0.310	-0.053	0.238	0.046	0.070	1.602
	(0.313)	(0.095)	(0.483)	(0.312)	(0.164)	(1.985)
Bandwidth	93.75	76.36	86.68	99.47	95.33	117.3
Effective Obs.	2786	6867	7966	6396	6224	1528
B. Cutoff=550						
RD-estimate	-0.595	-0.017	-0.044	-0.138	0.036	0.022
	(0.899)	(0.028)	(0.155)	(0.142)	(0.119)	(0.102)
Bandwidth	196.6	116.9	117.7	133.5	171	160.1
Effective Obs.	5420	9726	9726	8254	10463	1900
Observations	19465	67195	67195	47620	49851	9944
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.442	0.744	1.501	1.055	0.345	0.580

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** $p<0.01$, ** $p<0.05$, * $p<0.1$). Standard errors clustered at the district level. Additional controls used. Data used: NFHS 1998-99. Source: Author's calculation.

Table 9: Son preference RD-estimates with Epanechnikov and Uniform Kernel

	(1)	(2)	(3)	(4)	(5)	(6)
	Prefers boy child (0/1)	Has atleast one son (0/1)	Total number of sons	Son to daughter ratio	No. of births since 1995 if	
					Has atleast one son	Does not have any son
A. Epanechnikov Kernel						
RD-estimate	0.097**	0.060***	0.138**	0.076*	-0.018	0.073***
	(0.038)	(0.014)	(0.060)	(0.042)	(0.017)	(0.023)
Bandwidth	134.5	58.33	75.69	121	80.93	129.4
Effective Obs.	3666	5132	6264	7360	5013	1536
B. Uniform Kernel						
RD-estimate	0.070*	0.024*	0.125**	0.080*	-0.008	0.073***
	(0.040)	(0.015)	(0.061)	(0.043)	(0.015)	(0.027)
Bandwidth	119.9	119	106	109.8	102.1	113.7
Effective Obs.	3421	10217	9596	6881	6850	1372
Observations	19465	67195	67195	59795	49851	9944
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.442	0.744	1.501	0.489	0.345	0.580

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: NFHS 1998-99. Source: Author's calculation.

Table 10: Son preference RD estimates with Coverage Error Rate (CER) bandwidth selection

	(1)	(2)	(3)	(4)	(5)	(6)
	Prefers boy child (0/1)	Has atleast one son (0/1)	Total number of sons	Son to daughter ratio	No. of births since 1995 if	
					Has atleast one son	Does not have any son
RD-estimate	0.126***	0.051***	0.064	0.065	-0.020	0.071***
	(0.037)	(0.016)	(0.049)	(0.044)	(0.013)	(0.022)
Observations	19465	67195	67195	47620	49851	9944
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.442	0.744	1.501	1.055	0.345	0.580
Bandwidth	100.9	46.84	60.38	97.72	59.93	106.7
Effective Obs.	2998	4135	5177	6478	3795	1350

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: NFHS 1998-99. Source: Author's calculation.

Table 11: Son preference RD-estimates with bandwidth multipliers

	(1)	(2)	(3)	(4)	(5)	(6)
	Prefers boy child (0/1)	Has atleast one son (0/1)	Total number of sons	Son to daughter ratio	No. of births since 1995 if	
					Has atleast one son	Does not have any son
A. Bandwidth=2x						
RD-estimate	0.015	0.052***	0.135***	-0.014*	-0.011	0.064***
	(0.034)	(0.014)	(0.047)	(0.009)	(0.013)	(0.020)
Bandwidth	272	126	162	262	160	286
Effective Obs.	8545	10780	15250	22447	11329	4043
B. Bandwidth=0.5x						
RD-estimate	0.093**	0.007	-0.150**	-0.019*	-0.016*	0.120***
	(0.041)	(0.017)	(0.063)	(0.010)	(0.008)	(0.020)
Bandwidth	68	31	40	66	40	72
Effective Obs.	1839	2768	3410	4599	2500	834
Observations	19465	67195	67195	59795	49851	9944
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.442	0.744	1.501	0.489	0.345	0.580

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: NFHS 1998-99. Source: Author's calculation.

Table 12: Son preference RD estimates with donut hole test

	(1)	(2)	(3)	(4)	(5)	(6)
	Prefers boy child (0/1)	Has atleast one son (0/1)	Total number of sons	Son to daughter ratio	No. of births since 1995 if	
					Has atleast one son	Does not have any son
RD-estimate	0.100**	0.060***	0.092	0.073	-0.029	0.078***
	(0.039)	(0.015)	(0.071)	(0.054)	(0.019)	(0.025)
Observations	19407	66997	66997	47475	49695	9923
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.442	0.744	1.501	1.055	0.345	0.580
Bandwidth	139.5	66.83	80.40	105.5	82.87	137.2
Effective Obs.	4041	5067	6633	6634	4857	1697

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: NFHS 1998-99. Source: Author's calculation.

References

Abadie, A., Athey, S., Imbens, G. W., and Wooldridge, J. M. (2023). When should you adjust standard errors for clustering? The Quarterly Journal of Economics, 138(1):1–35.

Abeberese, A. B., Chaurey, R., and Menon, R. (2024). Place-based policies and migration: Evidence from india. The World Bank Economic Review, page lhae052.

Anderson, S. (2007). The economics of dowry and brideprice. Journal of economic perspectives, 21(4):151–174.

Anukriti, S., Bussolo, M., and Sinha, N. (2021). Son preference: Why we should care about it. World Bank Blogs (*Let's Talk Development*).

Anukriti, S. and Chakravarty, A. (2019). Democracy and demography: Societal effects of fertility limits on local leaders. Journal of Human Resources, 54(1):79–121.

Anukriti, S., Herrera-Almanza, C., Hossain, S., and Karra, M. (2025). Son preference, women's mental health, and well-being in india.". Unpublished manuscript.

Becker, G. S. (1960). An economic analysis of fertility. In Demographic and economic change in developed countries, pages 209–240. Columbia University Press.

Becker, G. S. (1993). A treatise on the family: Enlarged edition. Harvard university press.

Bhalotra, S., Brulé, R., and Roy, S. (2020a). Women's inheritance rights reform and the preference for sons in india. Journal of Development Economics, 146:102275.

Bhalotra, S., Chakravarty, A., and Gulesci, S. (2020b). The price of gold: Dowry and death in india. Journal of Development Economics, 143:102413.

Bhalotra, S., Chakravarty, A., Mookherjee, D., and Pino, F. J. (2019). Property rights and gender bias: Evidence from land reform in west bengal. American Economic Journal: Applied Economics, 11(2):205–237.

Bhalotra, S. and Van Soest, A. (2008). Birth-spacing, fertility and neonatal mortality in india: Dynamics, frailty, and fecundity. Journal of Econometrics, 143(2):274–290.

Bhalotra, S. R. and Cochrane, T. (2010). Where have all the young girls gone? identification of sex selection in india. Technical report, IZA Discussion Papers.

Bhukta, R., Jha, C. K., Joshi, S., and Sedai, A. K. (2025). Does bank expansion reduce domestic violence? causal evidence from india. Journal of Economic Behavior & Organization, 231:106933.

Bhukta, R., Pakrashi, D., Saha, S., and Sedai, A. (2024). Community electrification and women's autonomy. Energy Economics, 137:107792.

Botticini, M. and Siow, A. (2003). Why dowries? American Economic Review, 93(4):1385–1398.

Busso, M., Gregory, J., and Kline, P. (2013). Assessing the incidence and efficiency of a prominent place based policy. American Economic Review, 103(2):897–947.

Calonico, S., Cattaneo, M. D., and Farrell, M. H. (2020). Optimal bandwidth choice for robust bias-corrected inference in regression discontinuity designs. The Econometrics Journal, 23(2):192–210.

Cattaneo, M. D., Idrobo, N., and Titiunik, R. (2019). A practical introduction to regression discontinuity designs: Foundations. Cambridge University Press.

Cattaneo, M. D., Keele, L., and Titiunik, R. (2023). A guide to regression discontinuity designs in medical applications. arXiv preprint arXiv:2302.07413.

Cattaneo, M. D. and Vazquez-Bare, G. (2017). The choice of neighborhood in regression discontinuity designs. Observational Studies, 3(2):134–146.

Chakraborty, T. (2015). Trade liberalization in a traditional society: implications for relative female survival. World Development, 74:158–170.

Chaurey, R. (2017). Location-based tax incentives: Evidence from india. Journal of Public Economics, 156:101–120.

Clark, S. (2000). Son preference and sex composition of children: Evidence from india. Demography, 37(1):95–108.

Craigie, T.-A. and Dasgupta, S. (2017). The gender pay gap and son preference: evidence from india. Oxford Development Studies, 45(4):479–498.

Das Gupta, M. (2010). Family systems, political systems and asia's 'missing girls' the construction of son preference and its unravelling. Asian Population Studies, 6(2):123–152.

Desai, S. (2024). Gender disparity in primary education: The experience in india. https://www.un.org/en/chronicle/article/gender-disparity-primary-education-experience-india. United Nations. Accessed: August 29, 2025.

Dhar, D., Jain, T., and Jayachandran, S. (2019). Intergenerational transmission of gender attitudes: Evidence from india. The Journal of Development Studies, 55(12):2572–2592.

Dong, Y. and Lewbel, A. (2015). Identifying the effect of changing the policy threshold in regression discontinuity models. Review of Economics and Statistics, 97(5):1081–1092.

Dowd, C. (2021). Donuts and distant cates: Derivative bounds for rd extrapolation. Available at SSRN 3641913.

Evans, J., Sahgal, N., Salazar, A. M., Starr, K. J., and Corichi, M. (2022). How Indians view gender roles in families and society. Pew Research Center Washington, DC.

Fan, S., Zhang, X., and Robinson, S. (2003). Structural change and economic growth in china. Review of Development Economics, 7(3):360–377.

Filmer, D., Friedman, J., and Schady, N. (2009). Development, modernization, and childbearing: The role of family sex composition. The World Bank Economic Review, 23(3):371–398.

Freedman, M. (2013). Targeted business incentives and local labor markets. Journal of Human resources, 48(2):311–344.

Gelman, A. and Imbens, G. (2019). Why high-order polynomials should not be used in regression discontinuity designs. Journal of Business & Economic Statistics, 37(3):447–456.

Ghosh, B., Marjit, S., and Neogi, C. (1998). Economic growth and regional divergence in india, 1960 to 1995. Economic and Political Weekly, pages 1623–1630.

Guo, N., Huang, W., and Wang, R. (2025). Public pensions and family dynamics: Eldercare, child investment, and son preference in rural china. Journal of Development Economics, 172:103390.

Gupta, M. D. (2002). Why is Son Preference So Persistent in East and South Asia?: A Cross-country Study of China, India and the Republic of Korea. Number 2942. World Bank, Development Research Group, Public Services and Rural Development.

Ham, J. C., Swenson, C., İmrohoroğlu, A., and Song, H. (2011). Government programs can improve local labor markets: Evidence from state enterprise zones, federal empowerment zones and federal enterprise community. Journal of Public Economics, 95(7-8):779–797.

Haraguchi, N., Cheng, C. F. C., and Smeets, E. (2017). The importance of manufacturing in economic development: has this changed? World Development, 93:293–315.

Hasan, R., Jiang, Y., and Rafols, R. M. (2021). Place-based preferential tax policy and industrial development: Evidence from india's program on industrially backward districts. Journal of Development Economics, 150:102621.

Heath, R. and Jayachandran, S. (2016). The causes and consequences of increased female education and labor force participation in developing countries. Technical report, National Bureau of Economic Research.

IIPS (2000). National family health survey (NFHS-2), India, 1998-99, volume 1. International Institute for Population Sciences, Mumbai, India and ORC Macro.

Imbens, G. W. and Lemieux, T. (2008). Regression discontinuity designs: A guide to practice. Journal of econometrics, 142(2):615–635.

Jayachandran, S. (2017). Fertility decline and missing women. American Economic Journal: Applied Economics, 9(1):118–139.

Jayachandran, S. (2023). Ten facts about son preference in india. Technical report, National Bureau of Economic Research.

Jayachandran, S. and Kuziemko, I. (2011). Why do mothers breastfeed girls less than boys? evidence and implications for child health in india. The Quarterly journal of economics, 126(3):1485–1538.

Kaldor, N. (1967). Strategic factors in economic development. Ithaca: Cornell University Press.

Klasen, S. (2019). What explains uneven female labor force participation levels and trends in developing countries? The World Bank Research Observer, 34(2):161–197.

Klasen, S. and Pieters, J. (2015). What explains the stagnation of female labor force participation in urban india? The World Bank Economic Review, 29(3):449–478.

Kline, P. and Moretti, E. (2014). Local economic development, agglomeration economies, and the big push: 100 years of evidence from the tennessee valley authority. The Quarterly journal of economics, 129(1):275–331.

Kumar, N. (2023). Manufacturing-led transformation for realizing india's development aspirations in the context of a fractured trading system.

Kuznets, S. (1971). Economic growth of nations: Total output and production structure. Harvard University Press.

Lee, D. S. and Lemieux, T. (2010). Regression discontinuity designs in economics. Journal of economic literature, 48(2):281–355.

Lewis, W. A. et al. (1954). Economic development with unlimited supplies of labour.

Marconi, N., de Borja Reis, C. F., and de Araújo, E. C. (2016). Manufacturing and economic development: The actuality of kaldor's first and second laws. Structural Change and Economic Dynamics, 37:75–89.

McCrary, J. (2008). Manipulation of the running variable in the regression discontinuity design: A density test. Journal of Econometrics, 142(2):698–714.

Neumark, D. and Simpson, H. (2015). Place-based policies. In Handbook of regional and urban economics, volume 5, pages 1197–1287. Elsevier.

NSSO (2001). Employment and unemployment situation in india, 1999–2000.

Our World in Data (2024). Number of 'missing women' in the world, 1970 to 2050. https://ourworldindata.org/grapher/global-number-of-missing-women. Accessed: May 22, 2024.

Pande, R. and Malhotra, A. (2006). Son Preference and Daughter Neglect in India. International Center for Research on Women, Washington, DC.

Pande, R. P. and Astone, N. M. (2007). Explaining son preference in rural india: the independent role of structural versus individual factors. Population Research and Policy Review, 26(1):1–29.

Pew Research Center (2022). Sidebar: Sex ratios around the world. https://www.pewresearch.org/religion/2022/08/23/sidebar-sex-ratios-around-the-world/. Accessed: August 29, 2025.

Rao, M. G., Rao, R. K., et al. (2005). Trends and issues in tax policy and reform in India. Publications Unit, National Institute of Public Finance and Policy.

Rau, W. and Wazienski, R. (1999). Industrialization, female labor force participation, and the modern division of labor by sex. Industrial relations: a journal of economy and society, 38(4):504–521.

Rodrik, D. et al. (2009). Growth after the Crisis. Centre for Economic Policy Research London, UK.

Sedai, A. K., Vasudevan, R., Pena, A. A., and Miller, R. (2021). Does reliable electrification reduce gender differences? evidence from india. Journal of Economic Behavior & Organization, 185:580–601.

Sen, A. (2017). More than 100 million women are missing. In Gender and justice, pages 219–222. Routledge.

Shenoy, A. (2018). Regional development through place-based policies: Evidence from a spatial discontinuity. Journal of Development Economics, 130:173–189.

Szirmai, A. (2013). Manufacturing and economic development. Pathways to industrialization in the twenty-first century: New challenges and emerging paradigms, pages 53–75.

Tejani, S. and Milberg, W. (2016). Global defeminization? industrial upgrading and manufacturing employment in developing countries. Feminist Economics, 22(2):24–54.

United Nations Population Fund (2024). Son preference. https://www.unfpa.org/son-preference. Accessed: May 7, 2024.

Wang, J. (2013). The economic impact of special economic zones: Evidence from chinese municipalities. Journal of development economics, 101:133–147.

Watts, S. M. (2024). Son preference in india. https://www.ballardbrief.byu.edu. Ballard Brief.

Online Appendix

Table A1: Impact of manufacturing growth on the employment of females and males: Polynomial 2 estimates

	(1)	(2)	(3)	(4)	(5)	(6)
	In labor force (0/1)	Manufacturing sector emp. (0/1)	Regular emp. (0/1)	Casual emp. (0/1)	Paid self emp. (0/1)	Unpaid self emp. (0/1)
A. Female Sample						
RD-Estimate	0.022	0.023	0.032	-0.062	0.045	-0.066
	(0.085)	(0.043)	(0.028)	(0.054)	(0.057)	(0.065)
Observations	121046	37796	39078	39078	39078	39078
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.331	0.124	0.144	0.357	0.459	0.321
Bandwidth	213.4	169.1	175.9	158.3	159.4	171.2
Effective Obs.	31853	8181	8673	8039	8039	8339
B. Male Sample						
RD-Estimate	0.001	0.083***	0.037*	-0.023	-0.003	-0.013
	(0.002)	(0.023)	(0.020)	(0.020)	(0.033)	(0.026)
Observations	119281	114765	118682	118682	118682	118682
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.996	0.150	0.243	0.246	0.476	0.124
Bandwidth	159.3	137.2	189.3	171.5	184.4	167.9
Effective Obs.	23054	18347	27645	23864	27055	22907

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: Employment Unemployment Survey of 1999-2000. Source: Author's calculation.

Table A2: Impact of manufacturing growth on gender norms: Polynomial 2

	(1)	(2)	(3)	(4)	(5)
	Can go to market alone (0/1)	Can visit friends alone (0/1)	Say in HH spending (0/1)	Say in cooking (0/1)	Say in stay with family (0/1)
RD-Estimate	-0.063*	-0.080**	-0.105***	-0.052*	-0.055
	(0.037)	(0.040)	(0.037)	(0.030)	(0.042)
Observations	67182	67180	16593	67188	67165
State FE	Yes	Yes	Yes	Yes	Yes
Control Mean	0.391	0.287	0.715	0.868	0.511
Bandwidth	139.4	103	107.1	155.9	132.3
Effective Obs.	12515	9455	2513	14797	11001

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: NFHS 1998-99. Source: Author's calculation.

Table A3: Impact of manufacturing growth on dowry: Polynomial 2

	(1)	(2)	(3)	(4)
	Wedding gift (0/1)	Cash amount given as gift (Rs.)	Wedding expenditure (max) (Rs.)	Wedding expenditure (min) (Rs.)
RD-Estimate	-0.004	3,581.095	-50,217.249***	-39,527.058***
	(0.003)	(3,595.405)	(10,893.841)	(7,729.476)
Observations	29787	25958	29788	29754
State FE	Yes	Yes	Yes	Yes
Control Mean	0.997	28337	121496	93431
Bandwidth	165.5	133.9	185.1	178
Effective Obs.	5953	3927	6702	6327

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: Indian Human Development Survey of 2004-05. Source: Author's calculation.

Table A4: Impact of manufacturing growth on the employment of females and males: Placebo cutoffs

	(1)	(2)	(3)	(4)	(5)	(6)
	In labor force (0/1)	Manufacturing sector emp. (0/1)	Regular emp. (0/1)	Casual emp. (0/1)	Paid self emp. (0/1)	Unpaid self emp. (0/1)
A. Female Sample: Cutoff=460						
RD-Estimate	0.168	0.146	0.084	0.148	-0.056	-0.271
	(0.655)	(0.730)	(0.124)	(0.402)	(0.254)	(0.333)
B. Male Sample: Cutoff=460						
RD-Estimate	-0.010	-0.237	-0.285	0.125	-0.327	0.045
	(0.018)	(0.248)	(0.426)	(0.186)	(0.355)	(0.387)
A2: Female sample: Cutoff=550						
RD-Estimate	-0.349**	-0.249*	0.134***	0.123	-0.245**	-0.095
	(0.145)	(0.131)	(0.040)	(0.084)	(0.096)	(0.098)
B2. Male sample: Cutoff=550						
RD-Estimate	0.006*	-0.058	-0.048	-0.025	0.023	0.104**
	(0.003)	(0.054)	(0.042)	(0.075)	(0.061)	(0.050)

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: Employment Unemployment Survey of 1999-2000. Source: Author's calculation.

Table A5: Impact of manufacturing growth on gender norms: Placebo cutoffs

	(1)	(2)	(3)	(4)	(5)
	Can go to market alone (0/1)	Can visit friends alone (0/1)	Say in HH spending (0/1)	Say in cooking (0/1)	Say in stay with family (0/1)
A. Placebo cutoff=460					
RD-Estimate	-0.097	-0.094	0.877	-0.938	0.269
	(0.111)	(0.185)	(1.944)	(1.295)	(0.661)
B. Placebo cutoff=550					
RD-Estimate	0.059	-0.060	23.349	0.136	0.044
	(0.078)	(0.077)	(15.928)	(0.222)	(0.131)
Observations	67182	67180	16593	67188	67165
State FE	Yes	Yes	Yes	Yes	Yes
Control Mean	0.391	0.287	0.715	0.868	0.511

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: NFHS 1998-99. Source: Author's calculation.

Table A6: Impact of manufacturing district on dowry: Placebo cutoffs

	(1)	(2)	(3)	(4)
	Wedding gift (0/1)	Cash amount given as gift (Rs.)	Wedding expenditure (max) (Rs.)	Wedding expenditure (min) (Rs.)
A. Cutoff=460				
RD-Estimate	-0.070	-5,584.362	-211,673.291***	-255,611.194***
	(0.050)	(19,226.337)	(58,893.255)	(54,788.568)
B. Cutoff=550				
RD-Estimate	-0.010	-68,499.312**	-266,179.728	-203,251.014
	(0.053)	(27,998.026)	(191,038.576)	(145,171.951)
Observations	29787	25958	29788	29754
State FE	Yes	Yes	Yes	Yes
Control Mean	0.997	28337	121496	93431

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: Indian Human Development Survey of 2004-05. Source: Author's calculation.

Table A7: Impact of manufacturing growth on the employment of females and males: Kernel selection

	(1)	(2)	(3)	(4)	(5)	(6)
	In labor force (0/1)	Manufacturing sector emp. (0/1)	Regular emp. (0/1)	Casual emp. (0/1)	Paid self emp. (0/1)	Unpaid self emp. (0/1)
A1. Female Sample: Epanechnikov kernel						
RD-Estimate	0.063	0.056	0.030	-0.070	0.078	-0.014
	(0.067)	(0.038)	(0.030)	(0.048)	(0.050)	(0.047)
B2. Male Sample: Epanechnikov kernel						
RD-Estimate	0.003	0.138***	0.028	-0.009	-0.021	-0.050**
	(0.002)	(0.020)	(0.018)	(0.018)	(0.025)	(0.024)
A2: Female sample: Uniform kernel						
RD-Estimate	0.053	-0.007	0.032	-0.076*	0.020	0.009
	(0.073)	(0.034)	(0.020)	(0.045)	(0.054)	(0.050)
B2. Male sample: Uniform kernel						
RD-Estimate	0.005**	0.045**	0.020	-0.039*	-0.024	0.011
	(0.002)	(0.020)	(0.016)	(0.021)	(0.026)	(0.019)

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: Employment Unemployment Survey of 1999-2000. Source: Author's calculation.

Table A8: Impact of manufacturing growth on gender norms: Alternative kernels

	(1)	(2)	(3)	(4)	(5)
	Can go to market alone (0/1)	Can visit friends alone (0/1)	Say in HH spending (0/1)	Say in cooking (0/1)	Say in stay with family (0/1)
A. Epanechnikov kernel					
RD-Estimate	-0.066*	-0.083**	-0.102***	-0.066**	-0.062
	(0.040)	(0.041)	(0.038)	(0.032)	(0.045)
B. Uniform Kernel					
RD-Estimate	-0.090**	-0.055	-0.113**	-0.067*	-0.054
	(0.041)	(0.036)	(0.044)	(0.035)	(0.050)
Observations	67182	67180	16593	67188	67165
State FE	Yes	Yes	Yes	Yes	Yes
Control Mean	0.391	0.287	0.715	0.868	0.511

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: NFHS 1998-99. Source: Author's calculation.

Table A9: Impact of manufacturing district on dowry: Alternative kernels

	(1)	(2)	(3)	(4)
	Wedding gift (0/1)	Cash amount given as gift (Rs.)	Wedding expenditure (max) (Rs.)	Wedding expenditure (min) (Rs.)
A. Epanechnikov kernel				
RD-Estimate	0.005***	9,729.409***	16,375.932	-1,196.784
	(0.001)	(1,473.223)	(10,360.656)	(8,152.525)
B. Uniform kernel				
RD-Estimate	0.001	928.204	-5,529.367	-14,723.399
	(0.003)	(2,325.752)	(12,976.343)	(10,349.465)
Observations	29787	25958	29788	29754
State FE	Yes	Yes	Yes	Yes
Control Mean	0.997	28337	121496	93431

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: Indian Human Development Survey of 2004-05. Source: Author's calculation.

Table A10: Impact of manufacturing growth on the employment of females and males: CER Bandwidth selection

	(1)	(2)	(3)	(4)	(5)	(6)
	In labor force (0/1)	Manufacturing sector emp. (0/1)	Regular emp. (0/1)	Casual emp. (0/1)	Paid self emp. (0/1)	Unpaid self emp. (0/1)
A. Female Sample						
RD-Estimate	0.168	-0.014	-0.023	-0.060	0.152	0.061
	(0.148)	(0.079)	(0.035)	(0.105)	(0.137)	(0.118)
Observations	121075	37803	39086	39086	39086	39086
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.331	0.124	0.144	0.357	0.459	0.321
Bandwidth	80.60	79.20	129.9	68.89	62.79	70.51
Effective Obs.	12419	4029	6029	3714	3625	3714
B. Male Sample						
RD-Estimate	0.002	0.075**	0.032	-0.113	0.101	0.053
	(0.003)	(0.034)	(0.031)	(0.074)	(0.092)	(0.049)
Observations	119313	114795	118712	118712	118712	118712
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.996	0.150	0.243	0.246	0.476	0.124
Bandwidth	70.81	76.71	85.33	69.22	66.16	90.11
Effective Obs.	9558	11276	12381	9521	9095	12928

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: Employment Unemployment Survey of 1999-2000. Source: Author's calculation.

Table A11: Impact of manufacturing growth on gender norms: CER Bandwidth selection

	(1)	(2)	(3)	(4)	(5)
	Can go to market alone (0/1)	Can visit friends alone (0/1)	Say in HH spending (0/1)	Say in cooking (0/1)	Say in stay with family (0/1)
RD-Estimate	-0.078*	-0.078	-0.094**	-0.077***	-0.048
	(0.044)	(0.048)	(0.047)	(0.029)	(0.045)
Observations	67182	67180	16593	67188	67165
State FE	Yes	Yes	Yes	Yes	Yes
Control Mean	0.391	0.287	0.715	0.868	0.511
Bandwidth	103.9	76.82	79.87	116.2	98.68
Effective Obs.	9458	6669	1837	9805	9073

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: NFHS 1998-99. Source: Author's calculation.

Table A12: Impact of manufacturing district on dowry: CER Bandwidth selection

	(1)	(2)	(3)	(4)
	Wedding gift (0/1)	Cash amount given as gift (Rs.)	Wedding expenditure (max) (Rs.)	Wedding expenditure (min) (Rs.)
RD-Estimate	0.002	4,560.556***	55,343.625***	12,709.200**
	(0.002)	(1,257.857)	(5,413.757)	(5,839.672)
Observations	29787	25958	29788	29754
State FE	Yes	Yes	Yes	Yes
Control Mean	0.997	28337	121496	93431
Bandwidth	134.4	82.11	70.35	75.83
Effective Obs.	4332	2815	2727	3045

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: Indian Human Development Survey of 2004-05. Source: Author's calculation.

Table A13: Impact of manufacturing growth on the employment of females and males: Bandwidth multipliers

	(1)	(2)	(3)	(4)	(5)	(6)
	In labor force (0/1)	Manufacturing sector emp. (0/1)	Regular emp. (0/1)	Casual emp. (0/1)	Paid self emp. (0/1)	Unpaid self emp. (0/1)
A1. Female Sample: Bandwidth=2x						
RD-Estimate	0.002	0.016	0.033	-0.026	0.007	-0.036
	(0.079)	(0.040)	(0.029)	(0.050)	(0.053)	(0.063)
B1. Male Sample: Bandwidth=2x						
RD-Estimate	0.002	0.070***	0.025*	-0.022	-0.014	-0.004
	(0.002)	(0.018)	(0.013)	(0.014)	(0.019)	(0.017)
A2: Female sample: Bandwidth=0.5x						
RD-Estimate	-0.007	0.039	0.052	-0.165***	0.134***	-0.000
	(0.076)	(0.037)	(0.032)	(0.047)	(0.040)	(0.052)
B2. Male sample: Bandwidth=0.5x						
RD-Estimate	0.008***	-0.046***	0.072***	-0.049*	-0.009	-0.100***
	(0.003)	(0.015)	(0.020)	(0.026)	(0.033)	(0.034)

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: Employment Unemployment Survey of 1999-2000. Source: Author's calculation.

Table A14: Impact of manufacturing growth on gender norms: Bandwidth multiplier

	(1)	(2)	(3)	(4)	(5)
	Can go to market alone (0/1)	Can visit friends alone (0/1)	Say in HH spending (0/1)	Say in cooking (0/1)	Say in stay with family (0/1)
A. Bandwidth=2x					
RD-Estimate	-0.046*	-0.043	-0.009	-0.027	0.023
	(0.027)	(0.028)	(0.046)	(0.027)	(0.039)
B. Bandwidth=0.5x					
RD-Estimate	-0.143**	-0.122**	-0.052	-0.091**	-0.084
	(0.056)	(0.054)	(0.059)	(0.038)	(0.055)
Observations	67182	67180	16593	67188	67165
State FE	Yes	Yes	Yes	Yes	Yes
Control Mean	0.391	0.287	0.715	0.868	0.511

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: NFHS 1998-99. Source: Author's calculation.

Table A15: Impact of manufacturing district on dowry: Bandwidth multipliers

	(1)	(2)	(3)	(4)
	Wedding gift (0/1)	Cash amount given as gift (Rs.)	Wedding expenditure (max) (Rs.)	Wedding expenditure (min) (Rs.)
A. Bandwidth=2x				
RD-Estimate	0.003	-6,859.340*	-16,295.651	-14,876.244
	(0.002)	(3,785.545)	(12,237.556)	(9,353.618)
B. Bandwidth=0.5x				
RD-Estimate	-0.004**	399.649	47,983.290***	30,642.192***
	(0.002)	(846.533)	(4,032.984)	(3,177.301)
Observations	29787	25958	29788	29754
State FE	Yes	Yes	Yes	Yes
Control Mean	0.997	28337	121496	93431

Note: Treatment is manufacturing expansion following the tax exemption policy of the 1994 Finance Act. Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Standard errors clustered at the district level. Additional controls used. Data used: Indian Human Development Survey of 2004-05. Source: Author's calculation.