Mandated Increases in Maternity Leaves and the Motherhood Penalty: New Evidence from India

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Abstract

In this paper we study the extension of paid maternity leave from 12 weeks to 26 weeks in India to estimate its effect on the contractual arrangements of working women. To identify causal effects, we exploit the variation generated by the institutional features of the policy mandate in India, which applies only to establishments employing 10 workers or more. Using a difference in difference method we show that in the post-reform period, women are 4.6 percentage points less likely to be employed as regular salaried workers in the establishments compared to women working in smaller firms where the law does not apply. We also show that there is an increase in the employment of women as unpaid and wage labourers in establishments, but no change takes place in business ownership. The estimated decline in employment as regular salaried workers are significant for married and younger women confirming that the extension of maternity leave adversely affects working women.

Keywords: Maternity leave extension, female workers, contractual arrangement

JEL: J33, J41

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1 Introduction

A vast majority of countries around the world have instituted maternity benefits and maternity leave policies in line with global conventions laid down by the International Labour Organization (ILO).[1] While a major rationale for enhanced maternity leave durations globally has been to allow women to spend more time on child care resulting in better child outcomes (Ruhm, 2000; Tanaka, 2005; Baker & Milligan, 2008; Rasmussen, 2010; Liu & Skans, 2010; Dustmann & Schönberg, 2012; Ginja et al., 2020) , the impacts of such policies on women's labor market outcomes have also been historically studied with interest (Ruhm, 1998; Ruhm & Teague, 1997; Gruber, 1994).[2]

For instance, Schönberg & Ludsteck (2014) show that expansion in maternity leave coverages reduces mothers' post-birth employment rates in the context of Germany. Other evidence from the United States suggests that women delay their post-birth return to work in response to maternity benefits expansions (Klerman & Leibowitz, 1999; Waldfogel, 1999; Baum, 2003). There is also some mixed evidence on the impact of maternity leave programs on female labor force participation and earnings in developing countries (Uribe et al., 2019; Vu & Glewwe, 2022; Banerjee et al., 2022) .[3] However, much lesser is known about the employer responses to maternity leave expansions with the notable exception of Ginja et al. (2023). They find that firms face significantly higher costs and often need to hire additional workers to mitigate the adverse impacts of such expansions. In this paper, we study an alternate possibility where the composition of contractual arrangements of female workers in the firms may be affected by such a policy. More specifically, we are interested in studying if women are less likely to be in salaried employment vis-a-vis employed as a causal wage worker, in response to a maternity leave expansion policy, conditional on being employed.

[1] See here: https://www.ilo.org/global/topics/equality-and-discrimination/maternity-protection/publications/maternity-paternity-at-work-2014/lang--en/index.htm

[2] A recent World Bank report suggests that longer leaves for women are not only correlated with lesser female labor force participation rates but also that a reduction in the gap between male and female leaves can improve female labor market outcomes.The report is available as a World Bank policy research paper here: https://documents1.worldbank.org/curated/en/099658310202228905/pdf/IDU0797ba5170d9d404a5f0aaf70ddfec49193d6.pdf

[3] Although, as per ILO estimates, developing countries in Africa and South Asia have performed particularly well over the last two decades in terms of increasing the mandated weeks of paid maternity leave as well as extending maternity benefits policies to female employees.

In 2017, India amended its maternity benefits act to increase the mandated duration of paid maternity leave from 12 weeks to 26 weeks, fulfilling the ILO guideline of a minimum of 14 weeks of maternity leave to female employees. Soon after the amendment, a lot of news reports in India contributed to a growing speculation on potential responses by firms to this policy. Some extreme estimates suggested that over 1.5 million women may not get hired by corporations owing to increased maternity leaves that firms may have to give out and this would widen the gender gap in the Indian labor market even further.[4] A reason for this speculation was that in India, unlike other comparable economies such as China, South Africa or Brazil, the cost of the maternity benefit was not entirely borne by the government through social security schemes and rather had to be shared by the employers. Consequently, in line with Ginja et al. (2023), it may be prohibitively costly for a firm to hire a woman worker who might be eligible for the maternity leave. In a first attempt to causally estimate the impacts of this leave expansion on female labor market outcomes, Banerjee et al. (2022) find that it led to a decline in the probability of employment of a woman and also adversely affected earnings of the woman worker. While we essentially study the same maternity leave expansion policy, our study is significantly different along three dimensions which also highlight our main contributions to the literature.

First, we study the impacts of the maternity leave expansion policy in India on women's labor market outcomes, conditional on being employed. In a way, we study the intensive margin effects of the program by estimating impacts on women who are always employed. To our knowledge, such effects of the Indian policy have not been studied in the literature. Second, we show that the probability of women working as a salaried employee is lower as a result of the policy and consequently they are more likely to be working as a causal wage laborer or as unpaid workers in household enterprises. Changes in the type of employment for women workers in response to mandated changes in maternity leave policies is novel evidence in this field, to the best of our knowledge.

Third, unlike Banerjee et al. (2022) and other related papers from other countries such

[4] A report by the news portal named, Business Insider, analyzes these estimates here: `https://www.businessinsider.in/indian-companies-arent-hiring-women-to-avoid-maternity-leave-liability-study/articleshow/64749016.cms`

as Vu & Glewwe (2022), we do not use an identification strategy that uses cohort variation based on women's age to determine the treatment and men as the control group. We feel that there are two issues with such strategies. First, as Ginja et al. (2023) point out, firms may respond to these policies by hiring additional workers. If firms believe that women workers are now relatively costlier, then they may choose to hire more men. As a result, men are not unaffected by these policies and therefore cannot serve as a good comparison group in a quasi-experimental analysis. Second, the assignment of treatment based on age-cohorts of women as a proxy for perceived fertility is fairly arbitrary and susceptible to selection issues. We exploit variation generated by the institutional features of the policy mandate in India to identify causal effects of the program and therefore our study contributes to the literature as one of the early causal estimates of such programs in developing countries. However, our results hold for young, married women, which strengthens our main finding that maternity leave extension causes change in contractual arrangements with the employers for the treated women.

The Maternity Benefit (Amendment) Act, 2017 (henceforth mentioned as MBAA, 2017) of India was passed in the parliament and notified in 2017. The amendment that came into force on April 1, 2017, clearly specified that the maternity leave mandate applies to only those establishments which employ 10 workers or more. Smaller firms were not required to abide by this new mandate of allowing 26 weeks of paid maternity leave to female workers. We use multiple rounds of data from the National Sample Survey (NSS) of India and employ a reduced form quasi-experimental identification strategy using this repeated cross-sectional dataset. We compare women working in establishments that were bound to follow the mandate to those working in firms not under the ambit of this program before and after the implementation of the policy and estimate causal effects of the policy on probability of being in salaried employment. We find that as a result of the program, women were less likely to be employed as salaried workers and more likely to be working as casual or unpaid workers. Our identification assumption is that in the absence of the amendments, the difference in probabilities of women being in salaried employment in larger establishments and smaller firms would not have changed before and after 2017. We provide some support to this identification assumption by looking at historical trends in this difference over time, prior to the policy implementation and find that they were largely stable. We also show that working males remain unaffected due to this policy impelementation.

One way to interpret our findings is failing to reject the hypothesis that firms may change contractual arrangements for women workers in response to the policy. It may be rational for firms to engage in such behavior because only women who would have worked for a fixed number of days would be eligible to claim maternity leave from their employers. Even women have worked for the minimum stipulated time, firms have a tendency to deny maternity leave to casual workers under the pretext of them not being on the permanent pay roll. [5] The implementation of MBAA, 2017 is likely to increase this tendency of the employers. For salaried women, reducing the number of days may be very difficult relative to a contractual work arrangement. Given that the costs of the maternity leave given out to women are borne by the firms, this appears to be a real possibility. However, our empirical analysis is only able to observe the changes in equilibrium. Therefore, this hypothesis is only speculative and we are unable to provide any empirical evidence on this interesting mediating channel.

2 Policy Background: 2017 Amendment to the Maternity Benefit Act, 1961

MBAA, 2017 that was passed by the Indian parliament on March 9, 2017 was enforced from 1st April 2017. This act amended the Maternity Benefit Act of 1961. The provisions of this act applies to every woman working in an establishment, that is an enterpise employing 10 or more than 10 persons in Factories, Mines, Plantation, Shops & Establishments and other entities. The amendment extendend the duration of paid maternity benefit from from 12 weeks to 26 weeks for the first two children. The duration of maternity leave for women with more than two children remained unchanged at 12 weeks. Further, a woman could avail

[5] For example, Municipal Corporation of Delhi vs Female Workers (Muster Roll) and AMR

maternity leave for eight weeks before delivery of the child instead of six weeks as stipulated before the amendment, subject to the maximum leave of 26 weeks. The maternity benefit for birth of other children remains at 26 weeks. Further, the act extended maternity benefit of 12 weeks to women adopting a child less than 3 months age or having a child through surrogacy. During the maternity leave a woman is entitled to receive average wages or remuneration as paid to her during the preceeding three months of the maternity benefit.

The MBAA, 2017 is not applicable to only to a subset of working women. In terms of other provisions such as stipulating the minimum length of service, the provisions are less stringent than many other countries. Under MBAA, 2017, those working for atleast 160 days continuosly prior to the date of delivery with the current enterprise will be eligible for paid maternity leave. Though it is greater than the three months of employment required in Switzerland, it is less than the one year required in Australia, Bahamas, Jamaica, Mauritius, Namibia, New Zealand and United Arab Emirates, or two years in Gambia and Zambia. In terms of the duration of maternity leave, India also falls in the group of 62 countries that provide maternity leave for 14 weeks or more. After MBAA, 2017 India is among the countries that provide most paid maternity leave, along with Viet Nam, France and Hungary. [6] However, two features of the Indian Act stands out. First, it is not applicable to all working women. It is applicable to women working in establishments with greater than 9 workers. The usual distinction of formal or informal workers, as in Vu and Glewwe (2022) for eligibility of maternity leave does not apply. The act also excludes women working in smaller but registered enterprises from availing maternity benefit under MBAA, 2017. Further, unlike France, Viet Nam, Hungary, the cost of paid maternity leave is borne entirely by the employers. The government of India is planning to initiate the Maternity Leave Incentive Scheme, an incentive scheme under which the government will reimburse 7 weeks' wages to employers who employ women workers with wage ceiling upto Rs. 15000/- and provide the maternity benefit of 26 weeks paid leave, subject to certain conditions. However, this scheme has not yet been implemented. Even if it gets notified, only a part of the maternity benefit

[6] See https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_008009/lang--en/index.htm

pay will be subsidised under this scheme. [7] The lack of state subsidy, or funding through other social security schemes for maternity benefit pay imposes an additional cost for the establishments. This is likely to create disincentives for establishments to employ women, especially in the high-fertility age group. Firms could penalise women by negotiating the contractual terms of employing them. Since the MBAA, 2017 requires a woman to work for 160 days continuously prior to the date of delivery, firms could design contracts such that it creates periods of breaks in the duration of employment for a woman. This is possible for contractual workers or casual and unpaid workers. As data from various court cases show, employers also have a tendency to deny maternity leave to contractual employees. [8] This trend continues despite the judgement of various High Courts. The Supreme Court of India in Municipal Corporation of Delhi vs Female Workers (Muster Roll) and AMR on 8 March, 2000, specifically ruled that casual workers or workers employed on daily basis cannot be denied the benefit of MBA, 1961. Even though the judgement of the Supreme Court applies across India, when denied maternity leave, the legal cost of inducing the employer to pay maternity benefit through the courts can be prohibitively high for many women. This may encourage firms to employ fewer women as regular salaried employees and continue to employ women as wage labour or unpaid workers in order to deny them maternity benefit under the new law. We exploit the exogenous change in extension of maternity benefit leave and analyse whether it has affected the composition of contractual arrangements of female workers, that is, whether women are less likely to be in salaried employment vis-a-vis employed as a causal wage worker or self employed.

3 Data

We use data from five rounds of data from theNSS from 2004-05 till 2018-19. The pre-treatment period data is from the 61^{st}, 66^{th} and 68^{th} Rounds of the Employment and Unem-

[7] `https://pib.gov.in/Pressreleaseshare.aspx?PRID=1553017`

[8] See `https://indiankanoon.org/search/?formInput=maternity%20benefit%20act%20%20%20doctypes%3A%20judgments&pagenum=0` for a list of cases and judgments on maternity leave disputes between employers and employees

ployement surveys corresponding to the time periods July 2004-June 2005, July 2009-June 2010 and July 2011-June 2012 respectively. We use data from the Periodic Labour Force Survey (PLFS) of July 2017-June 2018 and July 2018-June 2019 respectively, for the post-treatment period. These surveys collect detailed employment data of all individuals in a household. The data includes information individual and household characteristics. Since each of these data sets comprise of cross sectional data, we have a repeated cross-section sample. For the purpose of this study, we restrict the sample to urban areas.

We obtain the employment status of individuals from the 'usual principal activity status'. This gives the activity status on which a person spent relatively long time (major time criterion) during the 365 days preceding the date of survey. We exclude those who do not work, are engaged in domestic duties, are attending educational institutions, are renters, pensioners, or were unable to work. This leaves us with a sample of 60,562 employed women. One concern could be the change of employment status of women over time. We see from Figure 1 that the share of employed women, based on principal activity status, has not changed between 2011-12 and 2017-18. Further, between 2017-18 and 2018-19 this share has not changed drastically either.

We compare the contractual arrangements for women workers employed in establishments vis-a-vis non-establishments, before and after MBAA 2017. Our outcome variable of interest is the kind of the contractual arrangement of working women, specifically, whether women are engaged as regular salaried employees. These are persons working in other's enterprises and earning salary or wages on a regular basis and not on the basis of daily or periodic renewal of work contract. The non-salaried individuals include the self-employed and those working as casual or unpaid workers. As mentioned in Section 2, the establishments, in order to save the additional financial cost of additional maternity leave, may have greater incentives to employ women more as wage labourers or contractual employees than as regular salaried employees. Table 1 reports the descriptive statistics. In our sample, 53 percent women are engaged as salaried employees.

The employment data also provides information about the size of the firms where the individuals work. We exploit this information to create the treatment group. MBAA, 2017 applies to establishments with 10 or more employees. Hence, women who report to work in enterprises with 10 or more employees fall in the treatment group. The rest fall in the control group. About 29 percent of women in our sample fall in the treatment group. In Figure 2 we report the share of women employed in establishments over time. We find an increasing trend in women working in establishments.

From Table 1 we find that regular salaried employment has increased in both the control and treatment groups in the post-amendment period. But this increase is slower in the establishments in the post-treatment period. On average, a younger population works in establishments.

Other characteristics of women may influence the contractual outcome of working women. To account for these factors we control for women's educational attainment, relationship with household head, household size, religion and social group. We find that the proportion of women who have completed college education is greater in the treatment group than in the control group. Fewer Muslim women work in establishments than non-establishments. We include individual and household characteristics in the regressions to control for the observed heterogeneities of women working in the treatment and control groups. In the next section, we present the empirical strategy to identify the causal effect of the maternity benefit extension on the employment of women as regular salaried employees.

4 Empirical strategy

Since we have observational data, we use a difference-in-difference methodology to identify the causal effect of the extension of maternity leave on the contractual arrangements of employed women. We compare the outcomes between women employed in establishments and non-establishments, before and after the implementation of MBAA, 2017. Formally, we estimate the following model for employed woman i in year t:

$$Y_{it} = \alpha + \beta_1(Treatment_{it} \times Post_t) + \beta_2 Treatment_{it} + \beta_3 Post_t + \delta X_{it} + \gamma_t + \theta_d + \epsilon_{it} \quad (1)$$

where Y_{it} denotes employment as a regular salaried employee. $Y_{it} = 1$ if a woman is employed as a regular salaried employee and zero otherwise. $Treatment_{it} = 1$ if woman i works in an establishment and zero otherwise. $Post_t = 1$ if the observation is from the post amendment period, that is between 2017 and 2019, and zero otherwise. X_{it} is the vector of control variables, which includes age, square of age, marital status, relation with household head, general educational level of individual women. We also control for household size, religion and caste category of the household the woman belongs to. In equation (1) we also account for time-fixed effects (γ_t) and district fixed effects (θ_d). In an alternate estimation strategy, we control for district-by-year fixed effects to account for time-specific unobserved variables that may influence the outcome. We cluster the standard errors at the state-year level.

5 Results

5.1 Main Results

We present the main results, the estimates of equation (1) in Table 2. Columns (1) to (3) present the estimates of DiD model with district fixed effects and time fixed effects. Columns (4) to (6) present the estimates of the DiD model with district-by-year fixed effects. For the two DiD models that compare the contractual arrangement of working women across establishments and non-establishments, we consider three different specifications that control for different variables. The first model is most parsimonious with no individual or household controls. Then we introduce individual controls and finally we include household controls. The results reported in Columns (3) and (6) include all the control variables and therefore are our most preferred estimates.

The main result shows that the maternity leave extension has a negative and significant effect on being employed as a regular salaried employee in the afermath of MBAA, 2017. We first discuss the results in columns (1) to (3). In the specification without individual and household controls we find that the estimated coefficient is -0.049. Inclusion of individual controls reduces the coefficient to -0.061 and household controls lead to an estimate of -

0.059. The results show that the adverse effect of the reform on contractual arrangements increase when we control for individual and household characteristics. When we account for district-by-year fixed effects (in columns 4 to 6), we find that the estimates are smaller is absolute value than those reported in columns (1) to (3). The time-specific unobserved variables accounted by the district-by-year fixed effects control for the prevalent labour market conditions within the districts. These factors may drive the estimates downward. However, the estimated coefficient of our interest still remain negative and significant. In the model without controls the effect is -0.032, but this estimate is less precise. Inclusion of individual and household controls increase the precision of the estimates. In the model with all the control variables, we observe that post reform, the probability of being employed as a regular salaried employee reduces by 4.6 percentage points in establishments vis-a-vis non-establishments. The results from the model with all controls confirm that individual and household characteristics also matter in determining the effect of MBA, 2017 on the contractual arrangements of women. These results show that the implementation of MBAA, 2017 have affected working women by changing the nature of contractual arrangement they have with their employers.

5.2 Threats to validity and robustness checks

We can claim the results reported in Table 2 as causal if the outcomes of the treatment group and control group would have followed the same trends had the law not been amended and implemented. This assumption is also essential to substantiate that women working in non-establishments provide an appropriate counterfactual, had the women working in establishments not being treated. This is the parallel pre-trends assumption. It could be violated if other factors unrelated to MBAA 2017 affect the outcomes of the treatment and control groups over time. Hence, we test the parallel pre-trends assumption for the period 2004-05 to 2011-12. We introduce a placebo reform and analyze the effect of this fake reform on contractual arrangements of working women by estimating equation (1). Here observations from 2004-05 constitute the pre- fake treatment observations and 2009-12 constitute the post fake treatment observations. Columns (1) and (2) of Table 3 reports the results. We find that the fake treatment has no significant effect on the contractual arrangements of working women in the treated group prior to the actual extension of the paid maternity leave.

Even though we do not reject the null hypothesis of parallel trends, it is not sufficient to rule out that other policies related to the labour market or working conditions at the time have not influenced our outcome. It is possible that the results reported in Table 2 is due to other policies and not specifically due to MBAA 2017. To assuage this potential threat to our identification strategy, we estimate equation (1) but restrict the sample to employed males only. If other policies are expected to influence the contractual arrangement, then male employees should also be affected by such an intervention. The extension of paid maternity leaves is expected not to affect working men. Columns (1) and (2) in Table 4 report the estimated results corresponding to working males. We find that there is no significant impact on the contractual arrangement of the male employees in establishments post MBAA 2017. The magnitude of the estimated coefficient is also close to zero. Further, we also examine the effect of the fake treatment on male workers. Columns (3) and (4) in Table 4 report these results. Here too, we find no significant effect of the fake treatment on the contractual arragengement of male workers in the pre-treatment period. Hence, we are confident that the results reported in Table 2 are due to the extension of paid maternity leave and not due to other policies.

5.3 Event-study estimates

To further examine the robustness of our findings we extend the difference in difference model by estimating the following event study specification:

$$Y_{it} = \alpha + \sum_{s \neq 2011-12} \beta_s (Treatment_{it} \times Year_s) + \delta X_{it} + \pi Treatment_{it} + \gamma_s + \theta_d + \epsilon_{it} \qquad (2)$$

where $s = \{2004-05, 2009-10, 2017-18, 2018-19\}$ and the reference year is $2011-12$.

We use the same set of controls and include district fixed effects and year fixed effects. We cluster the standard errors at the state-year level.

If the results reported in Table 2 are robust, we would expect $\beta_{2017-18}$ and $\beta_{2018-19}$ to be negative and statistically significant. $\beta_{2017-18}$ and $\beta_{2018-19}$ represent the difference of being employed as salaried worker between the workers in establishments and non-establishments between 2004-05 and 2017-18 and 2018-19 respectively. $\beta_{2004-05}$ represents the difference of means of being employed as salaried worker between the workers in establishments and non-establishments in 2004-05 and 2011-12. Similarly, $\beta_{2009-10}$ represents this difference between the years 2009-10 and 2011-12. This model also confirms whether the parallel pre- treatment trend holds. If the parallel pre-trends hold, the estimated coefficient $\beta_{2004-05}$ and $\beta_{2009-10}$ would either be close to zero or be statistically insignificant.

Figure 3 reports the event study estimates of equation (2) for both female and male workers. It presents detailed evidence of the dynamic effects of MBAA 2017. We observe that the coefficients for pre-treatment years for working women is not statistically significant. However, the estimated betas for working women become negative and significant in the post-treatment period. The negative impact is marginally greater in 2018-19 compared to 2017-18. The extension of the duration of maternity benefit causes changes in contractual arrangements for working women with their employers in the establishments more relative to those employed in the non-establishments. For the male workers, the coefficients for the pre treatment years is statistically insignificant. Further, the coefficient of beta in the post treatment years is also statistically insignificant for the working males. These results confirm that our main finding is unlikely to be driven by some other policy that may have influenced the outcome.

The evidence presented so far shows that the contractual arrangement of women in establishments change due to MBAA 2017. However, if the observed negative impact is due to the extension of maternity leave benefit and not due to other factors affecting women employees in general, then we expect younger married women to get affected more than the others. Ideally, women with less than two children should be affected because the leave extension applies only to them. But data on number of children for individual women is not provided by NSS. However, due to the societal expectations and prevalent social norms, young married women are expected to avail maternity leave more than the others. Hence, young married women are more likely to face the motherhood penalty.

We present the event study plots based on age groups for both men and women in Figure 4. The coefficients here represent the estimates of equation (2) for a specific age cohort. We classify the sample into age cohorts of 18-30, 31-40 and 41-59 years males and females respectively. We find that there is negative and significant effect of working women being employed as regular salaried person in both the years post the amendment for 18-30 year old women. For women in 31-40 year cohort, while effect is not significant in 2017-18, it is negative and significant for 2018-19. Hence, the results shows a delayed onset of the effect of MBAA 2017 for older women. One reason could be due to the extension of maternity leave for surrogate and adopted child. However, for the older women in the age group 41-59, we observe no significant changes in the contractual arrangements over time. For men in different age cohorts, the contractual arrangements also do not change over time due to this intervention.

In figure 5 we present the event study estimates of equation (2) for working women of different age cohorts , on the basis of their marital status. Beacuse married women in the young age cohort are expected to be in the high-fertility cohort, they are more likely to be adversely affected if the extension of maternity leave drives our main results. Figure 5 confirms that the younger cohort, that is, 18 to 30 years married women is adversely affected in the aftermath of the reform. Even though unmarried women too are in the high-fertility cohort of women, their marital status is likely to drive the perception that they would not avail maternity leave immediately. The adverse effect for 31-40 year old working women is also observed in case of married women. In case of not currently married women in the age cohort 31-40, we observe an immediate adverse effect of the reform in 2017-18 but this effect becomes insignificant in 2018-19. We observe no significant changes for either married or not married women in the age cohort of 41-59 years.

5.4 Change in contractual arrangement or self employment?

The reference category for regular salaried employment includes wage labour and unpaid labour in household enterprises and self employed. The results reported so far show that post MBAA, 2017, women working in establishments are less likely to work as regular salaried employees. However, this may not be disadvantageous to women if it encourages women to start their own business such that they employ others. On the contrary, if wage labour increases or unpaid labour in household enterprises increase, then we can say that the implementation of MBAA, 2017 has led to a detrimental outcome for the women in the treated group. We examine these aspects in this section.

First, we estimate equation (1) with employment as wage labour or unpaid labour as the dependent variable separately for female workers and male workers. The results are reported in Table 5. Columns (1) and (2) report the results corresponding to females. We find that women in treated group in the post reform period are 5.3 percentage points more likely to be employed as casual or unpaid workers. However, from the results in columns (3) and (4) we find that for the male workers this probability does not change significantly. Hence, only the female workers get affected. Had this not been due to MBAA, 2017, the contractual arrangement of males would also have changed. But that is not the case. Table 6 reports the estimates of equation (1) but with ownership of business as the dependent variable. Columns (1) and (2) report the estimated coefficients for females and columns (3) and (4) report the results corresponding to working males. Neither for the female workers nor for the male workers we find any significant change in the probability of being business owners among those working in establishments in the post reform period. The results reported in Tables 5 and 6 provide evidence that women workers in establishments are indeed adversely affected by MBAA, 2017 and they receive disadvantageous terms of employment from their employers.

6 Conclusion

In this paper we examine the effect of extension of paid maternity leave from 12 weeks to 26 weeks on the contractual arrangements of working women. Unlike many other countries such as China, South Africa or Brazil, the cost of maternity leave in India is borne entirely by the employers. Hence, the extension of paid maternity leave imposes additional costs to companies, which may adversely affect women working in firms entitled to give paid maternity leave to its women employees.

We exploit the features of the law, which applies only to women working in establishments, that is, enterprises with 10 or more employees to identify the treatment and control groups. Using difference-in-differences methodology on multiple rounds of NSS data, we provide causal evidence that MBAA, 2017 has led to a decline in employment of women as regular salaried workers in establishments by 4.6 percentage points, vis-à-vis those working in non-establishments in the post reform period. Simultaneously, we show that there is an increase in the employment of women as unpaid and wage labourers in establishments during this period. The effects are significant for younger and married women, providing evidence that the maternity benefit reforms have caused disadvantage to the women in the labour market.

Even though we are unable to provide empirical evidence on the mediating channels that drive our results, the results suggest that to protect the interests of new mothers or potential new mothers, in the labour market, the extension of maternity benefit leaves need to be complemented with subsidies or tax incentives to firms to reduce their financial burden. In absence of such incentives, women may receive a poor bargain in the labour market.

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Table 1: *Summary statistics*

	2004-12		2017-19	
	Control	Treatment	Control	Treatment
Regular salaried employees	0.31	0.84	0.42	0.89
	(0.46)	(0.37)	(0.49)	(0.31)
Casual or unpaid worker	0.406	0.145	0.265	0.089
	(0.491)	(0.352)	(0.442)	(0.018)
Business owner	0.288	0.019	0.318	0.018
	(0.453)	(0.138)	(0.466)	(0.133)
Age	36.75	35.46	39.32	36.59
	(12.61)	(10.66)	(12.00)	(10.84)
Age Squared	1509.20	1370.74	1690.28	1455.98
	(1013.78)	(810.17)	(1022.32)	(864.18)
Marital status: Married	0.64	0.61	0.68	0.64
	(0.48)	(0.49)	(0.47)	(0.48)
Self household head	0.16	0.19	0.17	0.15
	(0.37)	(0.39)	(0.38)	(0.36)
Spouse of household head	0.51	0.44	0.54	0.45
	(0.50)	(0.50)	(0.50)	(0.50)
Child of household head	0.17	0.20	0.14	0.22
	(0.37)	(0.40)	(0.34)	(0.42)
Spouse of household head's child	0.08	0.10	0.09	0.13
	(0.27)	(0.31)	(0.28)	(0.33)
Education: Secondary	0.08	0.08	0.09	0.06
	(0.27)	(0.27)	(0.28)	(0.24)
Education: Higher Secondary	0.05	0.08	0.06	0.07
	(0.23)	(0.27)	(0.24)	(0.25)
Education: Graduate	0.08	0.28	0.11	0.32
	(0.28)	(0.45)	(0.31)	(0.47)
Education: Above Graduate	0.03	0.18	0.06	0.24
	(0.18)	(0.38)	(0.23)	(0.43)
Household size	4.78	4.28	4.34	4.19
	(2.31)	(1.99)	(1.96)	(1.87)
Hindu	0.81	0.83	0.82	0.84
	(0.39)	(0.38)	(0.38)	(0.36)
Muslim	0.12	0.06	0.11	0.05
	(0.33)	(0.23)	(0.32)	(0.22)
ST	0.05	0.04	0.04	0.03
	(0.22)	(0.20)	(0.20)	(0.18)
SC	0.18	0.17	0.18	0.15
	(0.39)	(0.38)	(0.38)	(0.36)
OBC	0.45	0.33	0.45	0.40
	(0.50)	(0.47)	(0.50)	(0.49)
Observations	29,230	8,002	16,198	7,132

Table 2: ***Difference-in-difference estimates for the effect of maternity leave extension on regular salaried employment of women***

	Dependent variable: Regular Salaried Employment					
	(1)	(2)	(3)	(4)	(5)	(6)
Post=1 × Treatment=1	-0.049**	-0.061***	-0.059***	-0.032 *	-0.048**	-0.046**
	(0.017)	(0.017)	(0.017)	(0.018)	(0.018)	(0.018)
Post=1	0.117***	0.112***	0.109***			
	(0.011)	(0.011)	(0.010)			
Treatment=1	0.481***	0.398***	0.391***	0.463***	0.389***	0.383***
	(0.015)	(0.016)	(0.015)	(0.015)	(0.016)	(0.015)
Individual controls	No	Yes	Yes	No	Yes	Yes
Household controls	No	No	Yes	No	No	Yes
District FE	Yes	Yes	Yes	No	No	No
Time FE	Yes	Yes	Yes	No	No	No
District × Time FE	No	No	No	Yes	Yes	Yes
Observations	60562	60562	60562	60562	60562	60562
R^2	0.297	0.339	0.346	0.349	0.384	0.390

Note: *** $p< 0.01$, ** $p< 0.05$ and * $p< 0.1$. Individual controls include age, square of age, marital status, relation with household head, general educational level of individual women. We also control for household size, religion and caste category of the household the woman belongs to. Standard errors are clustered at the state-year level and reported in the parenthesis.

Table 3: ***Difference-in-difference estimates for the effect of maternity leave extension on regular salaried employment of women with fake treatment***

	Dependent variable: Regular Salaried Employment	
	(1)	(2)
Fake-Post=1 × Treatment=1	0.017	0.019
	(0.027)	(0.028)
Fake-Post=1	-0.027*	
	(0.010)	
Treatment=1	0.346***	0.352***
	(0.020)	(0.021)
Individual controls	Yes	Yes
Household controls	Yes	Yes
District FE	Yes	No
Time FE	Yes	No
District × Time FE	No	Yes
Observations	37232	37232
R^2	0.375	0.417

Note: *** p< 0.01,** p< 0.05 and * p< 0.1. If the year of survey is 2009-10 or 2011-12, then it is in a fake-treatment period. The sample is restricted to the pre-amendment period of the original sample of data. Individual controls include age, square of age, marital status, relation with household head, general educational level of individual women. We also control for household size, religion and caste category of the household the woman belongs to. Standard errors are clustered at the state-year level and reported in the parenthesis.

Table 4: ***Difference-in-difference estimates for the effect of maternity leave extension on regular salaried employment of men***

	Dependent variable: Regular Salaried Employment			
	All males		Fake treatment on males	
	(1)	(2)	(3)	(4)
Post=1 × Treatment=1	-0.002	0.004	-0.005	-0.013
	(0.012)	(0.012)	(0.014)	(0.015)
Post=1	0.051***		-0.025**	
	(0.008)		(0.009)	
Treatment=1	0.483***	0.479***	0.476***	0.482***
	(0.009)	(0.009)	(0.010)	(0.011)
Individual controls	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes
District FE	Yes	No	Yes	No
Time FE	Yes	No	Yes	No
District × Time FE	No	Yes	No	Yes
Observations	255040	255040	157627	157627
R^2	0.312	0.327	0.306	0.321

Note:*** p< 0.01, ** p< 0.05 and * p< 0.1. Columns (3) and (4) report the results pertaining to fake treatment. If the year of survey is 2009-10 or 2011-12, then it is in a fake-treatment period. The sample is restricted to the pre-amendment period of the original sample of data. Individual controls include age, square of age, marital status, relation with household head, general educational level of individual women. We also control for household size, religion and caste category of the household the woman belongs to. Standard errors are clustered at the state-year level and reported in the parenthesis.

Table 5: ***Difference-in-difference estimates for the effect of maternity leave extension on casual or unpaid labour employment***

	Dependent variable: Casual or unpaid labour employment			
	Females		Males	
	(1)	(2)	(3)	(4)
Post=1 × Treatment=1	0.068***	0.053**	-0.007	-0.017
	(0.020)	(0.022)	(0.011)	(0.011)
Post=1	-0.103***		-0.037***	
	(0.011)		(0.010)	
Treatment=1	-0.127***	-0.113***	-0.070***	-0.060***
	(0.017)	(0.018)	(0.008)	(0.008)
Individual controls	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes
District FE	Yes	No	Yes	No
Time FE	Yes	No	Yes	No
District × Time FE	No	Yes	No	Yes
Observations	60562	60562	255017	255017
R^2	0.229	0.285	0.160	0.182

Note:*** p< 0.01, ** p< 0.05 and * p< 0.1. Individual controls include age, square of age, marital status, relation with household head, general educational level of individual women. We also control for household size, religion and caste category of the individuals. Standard errors are clustered at the state-year level and reported in the parenthesis.

Table 6: ***Difference-in-difference estimates for the effect of maternity leave extension on business ownership***

	Dependent variable: Business ownership			
	Females		Males	
	(1)	(2)	(3)	(4)
Post=1 × Treatment=1	-0.009	-0.007	0.009	0.013
	(0.012)	(0.014)	(0.012)	(0.012)
Post=1	-0.005		-0.014*	
	(0.010)		(0.007)	
Treatment=1	-0.264***	-0.270***	-0.413***	-0.419***
	(0.012)	(0.013)	(0.008)	(0.008)
Individual controls	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes
District FE	Yes	No	Yes	No
Time FE	Yes	No	Yes	No
District × Time FE	No	Yes	No	Yes
Observations	60562	60562	255017	255017
R^2	0.179	0.228	0.238	0.252

Note:*** p< 0.01, ** p< 0.05 and * p< 0.1. Individual controls include age, square of age, marital status, relation with household head, general educational level of individual women. We also control for household size, religion and caste category of the individuals. Standard errors are clustered at the state-year level and reported in the parenthesis.

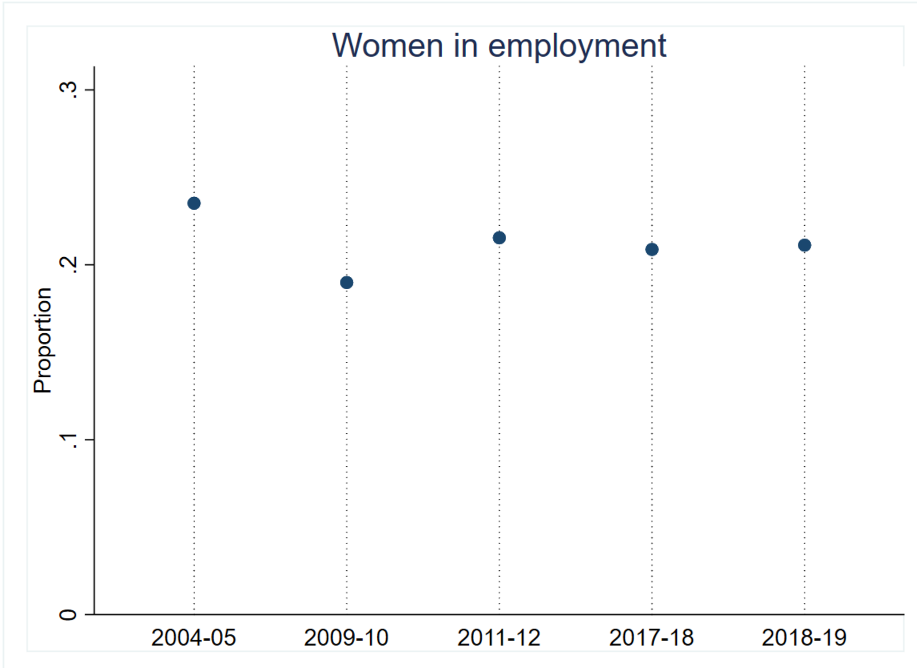

Figure 1: ***Share of employed women in urban India***

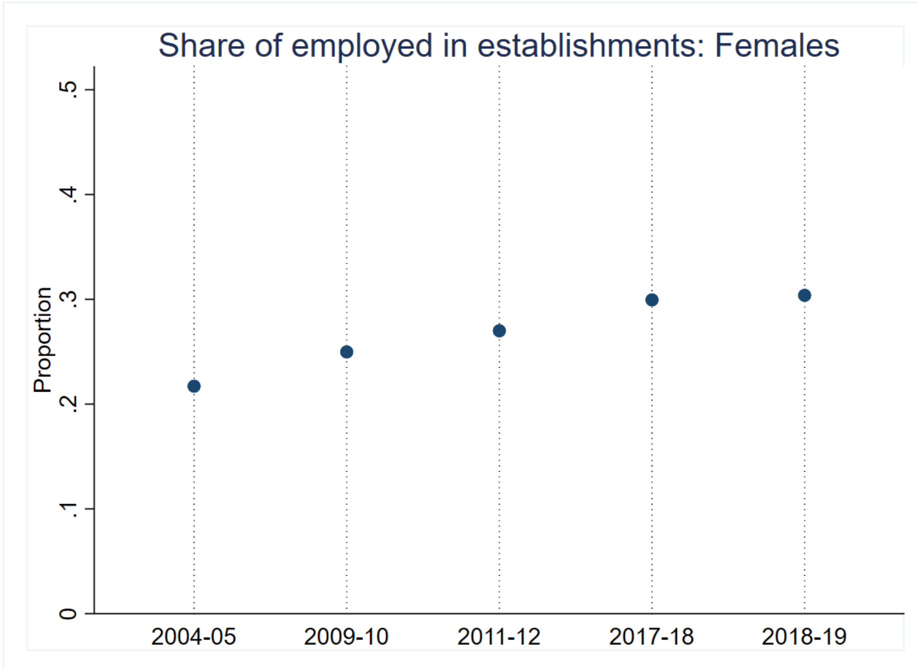

Figure 2: ***Share of women employed in establishments***

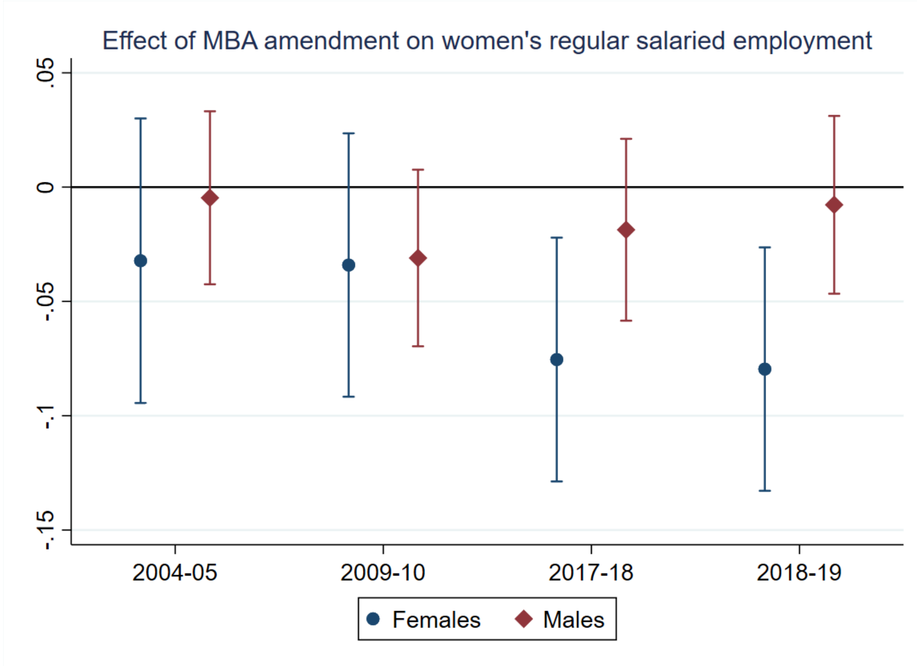

Figure 3: ***Event study estimates for men and women***

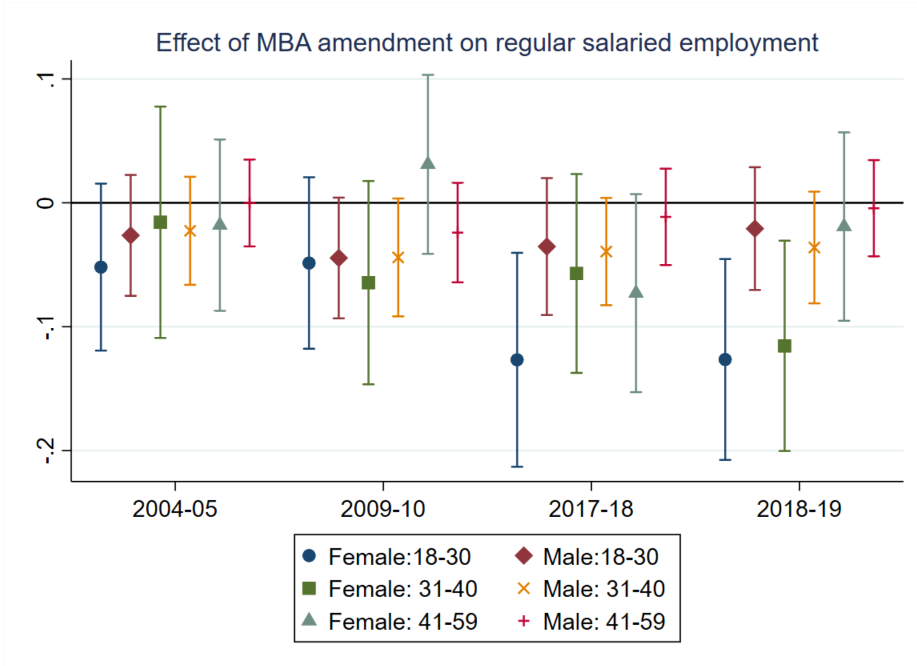

Figure 4: ***Event study estimates for men and women across age groups***

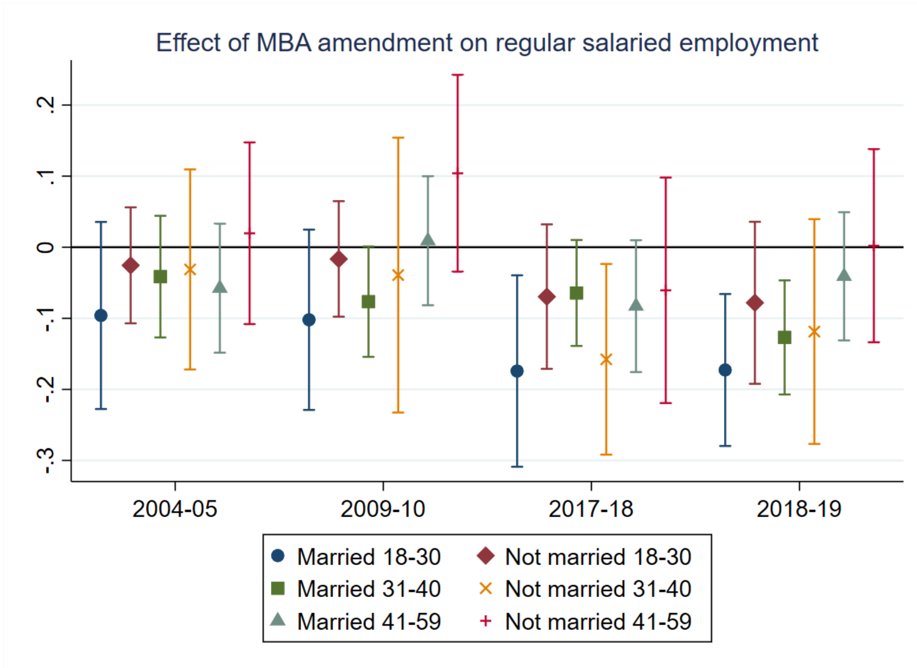

Figure 5: ***Event study estimates for women across age groups and marital status***