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Long Term Labor Market Consequences of Keeping Girls in School: Evidence from a Conditional Cash Transfer in India ^{*}

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Abstract

Gendered socio-cultural norms resulting in institutionalization of gendered specializations in home production is a leading cause for low and stagnant female labor force participation rates in developing countries. This paper examines a unique Conditional Cash Transfer (CCT) program for education of girls implemented in the Indian state of West Bengal in 2013. Though the primary objective of the program was to keep girls in schools, we explore if such a demand-side intervention affects long run labor market outcomes. Exploiting cohort specific eligibility rules and timing of program implementation, we employ a quasi-experimental empirical framework to find that urban women exposed to this program are 4.6 percentage points more likely to be employed as a salaried or regular-wage worker. We also find a 3.0 percentage points increase in women being available for work. More women find employment in high return sectors such as manufacturing, explained by an increase in completion of technical diplomas. Our results also indicate gendered norm change among the rural women.

Keywords: Conditional Cash Transfer Program, Kanyashree Prakalpa, Female workers, Remunerative employment

JEL: J24, J33

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1 Introduction

Trends in Female Labor Force Participation (FLFP) rates across the world generally suggest a U-shaped pattern with the middle income countries usually having the lowest FLFP rates.¹ Globally, India has one of the lowest FLFP rates, ranking only above other low-income countries like Pakistan and a few Arab countries which although rich have very skewed social and cultural norms (Andres et al., 2017). India is an outlier for the developing world in this context due to two facts. First, despite being one of the fastest growing economies of the world with sustained GDP growth at around 8% consistently, India has low FLFP rates (Andres et al., 2017; Afridi et al., 2018; Fletcher et al., 2019). Second, while this generally could mean that commensurate job opportunities have not been created with higher economic growth leading to higher reservation wages for women (Verick, 2014), it could also imply that preferences of women outside the labour force is not aligned with the jobs available. Fletcher et al. (2019) show that in 2011-12 a large share of women not employed but willing to work, preferred part-time or occasional employment, but among employed women, a large proportion were engaged in full time work. This indicates a potential excess demand for part-time work and a mismatch of demand and supply of jobs preferred by women. India is also characterized by a stagnant FLFP rate in urban areas for a long time, reflecting a dominating income effect potentially arising out of rising male education and employability and consequent withdrawal of females from the labor force (Klasen & Pieters, 2015). Even though the FLFP both in urban and rural areas are increasing in recent years, this increase has not been accompanied by an increase in remunerative jobs or earnings (Deshpande, 2025).

Like most other countries with low FLFP rates, India's low and stagnant FLFP can also be tied down to gender norms associated with marriage, child care and unpaid household labour (Barigozzi et al., 2018; Casarico et al., 2023; Pande & Roy, 2021; Finlay, 2021). Therefore, a natural policy response would be to create interventions to relax these norms and encourage higher FLFP rates. In this paper, we essentially study this question from

¹See this report here for further details and statistics: <https://ourworldindata.org/female-labor-supply>

the lens of a conditional cash transfer (CCT) program for education and gendered social norm change and analyze whether this encouraged women to work more in remunerative employment or employment with social security?

Studying the impact of cash transfers on labor market outcomes is not new. There exists a literature which has looked at the role of unconditional transfers on household labor supply decisions (Salehi-Isfahani & Mostafavi-Dehzoee, 2018), child labor (Churchill et al., 2021), and that of CCTs on labor force participation rates (Skoufias & Di Maro, 2008; Baird et al., 2018), including female labor market outcomes (Garganta et al., 2017) and gender inequality in labor market opportunities (Ludeña, 2019). However, our context, as discussed above, is to study the potentially binding constraints of social norms leading to lower participation in the labor market or more specifically, remunerative employment. The literature on this aspect is limited with a few studies looking at the impact of CCT interventions in the long run on schooling and work (Behrman et al., 2011), and medium term outcomes of scholarships on graduation outcomes (Filmer & Schady, 2014). Most targeted transfers would alter the household budget set and affect how contributions to the household public good are made. For instance, Bertrand et al. (2003) study resource allocation within extended families and show that increase in pension, reduces weekly labor supply of prime age individuals.

In similar vein, the impact of a targeted CCT made to women on FLFP may be confounded by the potential withdrawal from the labor market due to substantial income effects, as discussed above, and lead to substitution of labor supply within households. The program we study, Kanyashree Prakalpa (KP), stands out in this regard in terms of its design and impact. Implemented in the state of West Bengal(WB) in 2013, the KP has two components - first, an annual cash transfer made to adolescent girls conditioned on remaining enrolled in school and not getting married; second, a lump sum transfer on attaining the age of 18 conditioned on remaining unmarried but most importantly also on concurrent status of either continuing education or engaging in occupational pursuit. Clearly, the second component distinguishes the KP from other similar CCTs which mostly include only the first component and/or have the second component of lump sum transfer not conditioned on con-

current status. Consequently, our hypothesis is that KP’s institutional setting allows it to relax the binding constraint we discussed above by incentivizing the women to seek gainful employment even after attaining the legal marriage age of 18.

Understandably and as a result, KP has drawn significant attention from academicians and policymakers worldwide. For instance, it has received the United Nations Public Service Award (UNPSA) and well as the UN sponsored World Summit on Information Society (WSIS) award.² Additionally, it has also received national recognition through various private and public sector citations and awards. In terms of empirical academic evidence on first-stage outcomes, it has been shown that KP reduces under-age marriage, leads to higher enrollment and grade completion (Dey & Ghosal, 2021; Das & Sarkhel, 2023; Sen & Thamara-pani, 2023). Importantly, for our context, Sen & Banerjee (2024) show that KP has actually led to changes in social norms through mobility and tolerance with respect to gender-based outcomes such as intimate partner violence, etc. This strand of literature largely motivates our research question given that there already exists evidence of potential relaxations of our hypothesized binding constraint of gendered social norms leading to lower engagement in remunerative employment. We take advantage of the fact that girls exposed to KP in the early years since 2013 are now old enough to be in the labor market and this allows us to study our question of interest by looking at labor market outcomes and consequently our paper is also the first long-term study of the impacts of KP.

We exploit the institutional features of implementation of the KP to identify causal effects of the program on our outcomes of interest. We use two rounds of Employment and Unemployment Survey (EUS) data from the National Sample Survey (NSS) of India spanning the years 2009-10 to 2011-12 for the pre-treatment period and six rounds of Periodic Labour Force Survey (PLFS) data from 2017-23 for post-treatment data. Even though the PLFS replaced the NSS data on EUS, the PLFS is comparable to the NSS in geographical coverage, survey design and variables on which data is collected. Moreover, the usual principal activity status’ (UPS) is comparable across the two surveys. We focus on the outcomes primarily

²See the UN post on the program here: <https://publicadministration.un.org/unpsa/innovation-hub/Winners/2017-Winners/Kanyashree-prakalpa>

in urban areas as the outcome of interest is mostly relevant in urban areas with rural India presenting very few opportunities for remunerative formal employment, especially for women (Chatterjee et al., 2015; Deshpande & Singh, 2024). However, we also examine the effect of KP on employment outcomes in rural areas. We compare adult women above the age of 18 and not enrolled in education, in WB who were exposed to KP to similar cohorts of women in neighboring states, before and after the program, using repeated cross-sections of the NSS data to get Intent-to-treat (ITT) estimates of the impact of KP on employment. Our ITT estimates can be bench-marked to existing literature, validating our identification strategy and we find that exposure to KP has led to higher levels of employment for women in salaried jobs and a reduction in engagement as domestic workers. We observe these positive effects both before and after the income bar has been removed from the scheme eligibility. We also find that more women find employment in high return sectors such as manufacturing. These results are explained by an increase in obtaining technical diploma and not by a decline in the likelihood of getting married by the cohort exposed to KP.

Our paper makes two important contributions. First, to the best of our knowledge, this is the first paper which provides causal evidence of the impacts of a program aimed at increasing the demand for education and human capital investments among women, on their later life labor market equilibrium matches. We show that the KP which led to higher enrollment and grade completion also affects the likelihood of women being in formal salaried employment in later life. Second, in the context of lower FLFP rates in countries like India, social and cultural norms appear to play a major role. We are able to identify a policy which directly attempts to relax these norms and potentially improves labor market outcomes in the medium to long run. Consequently, our results speak to policymakers by way of pointing out the importance of design of incentives in cash transfer or demand-stimulating policies that target these restrictive social and cultural norms and can help women break out of these norms.

2 Policy background: Kanyashree Prakalpa and its link to labour market outcomes

KP, introduced in WB in October 2013 is targeted to girls in the age group of 13-18 years. KP has two components, K1, which is an annual cash transfer that was initially fixed at INR 500, and was raised to INR 700 in 2015-16 and subsequently to INR 1000 since 2018-19. This amount is paid to girls studying in the 8th standard equivalent or above for every year that they remained in education and remain unmarried since they turn 13 and up to the age of 18. The second component of KP, K2, is a lump-sum amount of INR 25000 paid to a girl after she turns 18, provided she is engaged in education or occupational pursuit and is unmarried. For the purpose of the program, education includes secondary, higher secondary as well as vocational, technical and sports courses. The policy was initially targeted to households with annual income less than INR 120,000. However, since 2018, this income bar has been lifted.

Across countries several cash transfers conditional on education, such as Progressa in Mexico, Bono de Desarrollo Humano in Ecuador, Universal Child Allowance for Social Protection in Argentina have been implemented. However, these cash transfers are mostly targeted to households or women conditional on their child being in education. The objective of these government transfers is to encourage parents to invest in their child's education. However, CCT on education may not always lead to improved labour market outcomes. While Behrman et al. (2011) show that Progressa delayed the entry of younger youth in the labour force, the hours of work increased for older girls, and employment shifts from agricultural to non-agricultural sector. Filmer & Schady (2014) however, do not find any significant changes in earnings as the learning outcomes do not improve but delay into labour force entry implies less experience and result in reduced earnings.

Several Indian states such as Andhra Pradesh, Delhi, Gujarat, Haryana, Bihar, Madhya Pradesh and Maharashtra have introduced CCTs for reducing female foeticide, increasing years of education and reducing child marriage. However, KP is unique in design. First,

KP does not specify grade completion criteria to be eligible for receiving the CCT benefits.³ This reduces the problem of selection into the program due to dropping out of education due to non-completion of preceding grades. Moreover, KP includes all types of education including vocational training and technical education. The beneficiaries are also eligible if they are unmarried but engaged in any occupation. In contrast, the Mukhya Mantri Kanya Utthan Yojana in Bihar extends the CCT benefits only to those who complete higher secondary(intermediate) education. Moreover, unlike Chief Minister Sukanya Scheme in Jharkhand, KP extends to all girls in the age group of 13-18 and not based on ration entitlements of parents or enrollment in the electoral rolls.⁴ KP also differs from most CCT schemes in its design as it does not depend on grade completion. Another feature of KP that differentiates it from other CCTs are that the cash incentives are transferred to the beneficiary girl child's bank account directly instead of that of the parents.

The program has been successful in reducing under-age marriage (Dey & Ghosal, 2021). Evidence shows that KP has also improved enrollment (Das & Sarkhel, 2023) and grade completion (Sen & Thamarapani, 2023) among the cohort of girls exposed to the program. Sen & Banerjee (2024) shows that KP is also contributing towards social norms change through mobility and tolerance towards domestic violence. Exposed women show higher mobility outside home and lower tolerance towards domestic violence. This is consistent with the findings of Roychowdhury & Dhamija (2021) that delaying age of marriage reduces physical violence significantly. But women in employment may also face higher intimate partner violence due to male backlash (Dhanaraj & Mahambare, 2022). However, how KP is likely to effect the labour market outcomes of the targeted group seems ambiguous and less obvious. KP can influence the labour market outcomes of women through increasing their educational attainment, potentially increasing their labour force participation. A higher grade completion may also raise the aspirations of women who may look for better quality

³Mukhya Mantri Kanya Utthan Yojana introduced in 2018 in Bihar and Mukhya Mantri Sukanya Yojana introduced in Jharkhand in 2020 are CCTs based on grade completion. Similarly, the Chief Minister's Bicycle program in Bihar is conditional on grade completion, that provides bicycles to girls who are enrolled in class 9. The Mukhya Mantri Sukanya Yojana provides financial assistance to a couple of girl/clients in the holdings of the pink grain scheme cards (pink juice ration cards) purggari – oil ration cards (white color ration cards)

⁴<https://simdega.nic.in/en/social-welfare/>

or dignified jobs, rather than any job. Delaying the age of marriage for girls also frees them up from domestic responsibilities of child care and improving mobility outside home. Ideally this should enable women to access more jobs and better quality of jobs. However, as shown by Das & Sarkhel (2023), an increase in enrolment due to KP has not led to an improvement in educational outcomes. Hence, whether the quality of female labour has improved due to KP remains unclear. Concurrently, delaying the age at marriage may not always lead to improvement of labour market outcomes (Dhamija & Roychowdhury, 2020). The backlash the older brides are likely to face compared to the newer brides, seems to offset the potential positive labour market effects from delaying marriage. A possible channel through which KP could improve the labour market outcomes for women is through improved education or enrollment in technical courses that can lead to better jobs. Jobs with better terms of employment could counter the backlash faced by working women by increasing the opportunity cost of not engaging in paid work. Given this context, we examine empirically the effect of KP on the nature of employment that women engages in. In particular, we examine whether women are getting into more remunerative jobs, particularly salaried jobs, formal jobs with paid leave and other employment benefits such as healthcare and maternity leaves.

3 Empirical Framework

In this section, we describe our dataset and the main strategy for estimating causal effects of KP on the nature of employment. We exploit the timing of the program and that it is restricted to girls in WB to identify causal effects of KP on the nature of employment.

3.1 Data

We use data collected by NSS on Indian labour markets. We use a difference in difference methodology to estimate the effect of KP on labour market outcomes. Since difference in difference method involves comparing changes in outcomes between the treated and con-

trol cohorts, pre and post the policy change, we include data from pre-treatment and post-treatment periods in the analysis. The pre-treatment period data is from the 66th, and 68th Rounds of the EUS corresponding to the time periods July 2009-June 2010 and July 2011-June 2012 respectively. We use data from the PLFS of July 2017- June 2018 up to July 2022- June 2023 for the post-treatment period. These surveys collect detailed employment data for all individuals in a household. The data includes information about individual and household characteristics. Since each of these data sets comprises cross-sectional data, we have a repeated cross-section sample.

The PLFS replaced the NSS data on EUS. The PLFS is comparable to the NSS in geographical coverage, survey design and variables on which data is collected. The NSS EUS and PLFS, both, follow a two-stage sampling design, where the first stratum is district in rural areas and towns/cities in the urban areas. In rural areas, within a district, villages are randomly picked which form the Primary Sampling Unit. In urban areas, urban blocks form the Primary Sampling Units. When villages or urban blocks are large, they are divided into hamlet groups which form the First Stage Units for selecting the households. One-fourth of the sample is surveyed in each quarter from the First Stage Units, to ensure equal representation of households across the year. Even though in the PLFS, households in villages and urban blocks are additionally stratified based on general education level of household members, we use sampling weights to get population estimates. Since in each period different households are surveyed, each round of EUS or PLFS comprises of cross-section data. We combine these data over time to get a repeated cross-section data.

We obtain the employment status of individuals from the ‘usual principal activity status’ (UPS). 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 are attending educational institutions, are renters, pensioners, or unable to work. Further following (Goldar & Aggarwal, 2023), to ensure the comparability across EUS and PLFS, our outcome variables are obtained from UPS and not Usual Principal and Subsidiary Activity Status (UPSS).

We carry out the analysis separately for urban and rural areas. However, since the employment opportunities in the non-farm sector is more in urban areas, we focus primarily on the results obtained from the urban areas. We restrict the sample to the age cohort that has been exposed to the policy. Since the programme was started in 2013 and the girls aged between 13 and 18 years are exposed to the programme, different age-cohorts comprise the treatment group in the post-treatment period. This leads to different cohorts of women in the age group of 18-28 years who are included in our sample from the post-treatment period. Table A1 summarises the age cohorts from different survey rounds that we include in our sample. For the pre-treatment period, we consider women in the age group 18-28 years. Further, we consider observations from WB as the treated group and compare their outcomes with those of individuals from the neighbouring states of Jharkhand and Bihar. So women from WB comprise the treatment group while women from Jharkhand and Bihar are included in the control group. We use Jharkhand and Bihar as control states as West Bengal share its longest borders with Jharkhand and Bihar. Bihar and Jharkhand till 2000 were part of the same state and West Bengal share social, cultural and economic similarities. However, to check the robustness of our results, since West Bengal shares borders with Assam and Odisha, we consider these as control states in alternate specifications.

3.2 Variables

We are interested in whether the quality of employment improves for women exposed to KP. The main outcome variable of our interest is the nature of employment, specifically, whether the individual is in regular wage or salaried employment. The surveys also collect information on other individual characteristics such as educational attainment, marital status, relation with household head and household characteristics such as household size, religion, caste category and household land holding.

Table 1 reports the summary statistics for urban women in the treatment and control states before and after the implementation of KP. From Table 1 we find that the proportion of women engaged in salaried or regular employment has increased in the post treatment

period in both the treatment and control states. However, this increase is much higher in West Bengal. We also see that there has been an increase in employment of women with paid leave, health benefits, maternity benefits in WB post the implementation of KP. We also find that the proportion of women working in private limited companies has increased in WB in the post-reform period. We also observe that the proportion of women who have completed higher secondary education has increased more in the West Bengal than in Bihar and Jharkhand. However, the decrease in women with no technical education is larger in the control states than in WB. We find from Table 1 that the educational outcomes of completing higher secondary education, not having technical education, distribution of individuals across religion and age between WB and control states are not significantly different in the pre-treatment period.

3.3 Identification Strategy

We compare the employment outcomes of women in WB with those of women in Jharkhand and Bihar. Since KP was implemented in WB, the women in WB are considered to be in the treatment group, and women in Bihar and Jharkhand are in the control group. Both Bihar and Jharkhand have introduced CCT in 2018 and 2020 respectively. However, as discussed in Section 2, the design of KP differs in design and scope. Additionally, the year fixed effects in the regression equation takes into account any changes in the incentive structure that may have taken place due to the introduction of CCT in Bihar and Jharkhand.

In the ideal scenario, to estimate the causal effects of KP on the outcomes of interest, we would require a sample of women to be randomly exposed to KP and compare their results with those not exposed. However, since KP was introduced all across the state of WB simultaneously, such an experiment is infeasible. As a result, we use a quasi-experimental design to identify causal effects of KP on several employment outcomes. Using repeated cross-sections of data, we compare the employment outcomes of women in WB with that of women in Jharkhand and Bihar, included the sample, before and after the implementation

Table 1: *Summary statistics*

	West Bengal		Bihar & Jharkhand		Difference
	Pre-KP 2008-2012	Post-KP 2017-23	Pre-KP 2008-2012	Post-KP 2017-23	WB & Control states Pre-KP
Proportion of women:					
Nature of employment:					
Salaried/regular wage	0.081	0.111	0.026	0.044	.055***
Paid leave	0.042	0.052	0.016	0.017	0.026**
Health benefits	0.025	0.027	0.009	0.011	.016**
Maternity benefits	0.025	0.028	0.010	0.011	0.015*
PF and pension	0.001	0.006	0.002	0.002	-0.001
Establishments	0.048	0.042	0.014	0.018	0.033**
Government/public sector	0.017	0.009	0.014	0.009	0.003
Private limited company	0.014	0.034	0.003	0.012	0.011**
Other characteristics:					
Household size	5.002	4.482	5.667	5.583	-0.665**
Married	0.713	0.625	0.822	0.626	-0.109**
Self household head	0.011	0.013	0.030	0.014	-0.020
Spouse of household head	0.382	0.274	0.444	0.286	-0.062
Child of household head	0.252	0.345	0.173	0.348	.079**
Spouse of child of household head	0.288	0.311	0.300	0.287	-0.012
Relation with head: others				0.017	
General education: Not literate	0.114	0.037	0.231	0.117	-0.117***
General education: Below secondary	0.475	0.389	0.312	0.294	0.163***
General education: Secondary	0.142	0.153	0.194	0.168	-0.051**
General education: Higher secondary	0.097	0.204	0.113	0.193	-0.016
General education: Graduate	0.126	0.171	0.119	0.197	0.007
General education: At-least Post-graduate	0.041	0.037	0.027	0.026	.014
At-least Higher Secondary	0.269	0.418	0.264	0.418	0.005
No Technical education	0.976	0.958	0.978	0.978	0.001
Technical diploma	0.011	0.016	0.020	0.002	-0.009
Technical Graduate diplomadegree	0.013	0.023	0.002	0.016	0.010**
Hindu	0.800	0.740	0.852	0.809	-0.052
Muslim	0.194	0.252	0.126	0.165	0.068
General	0.687	0.610	0.231	0.156	0.456***
OBC	0.063	0.139	0.550	0.593	-0.486***
SC	0.232	0.230	0.173	0.184	0.060
ST	0.017	0.021	0.046	0.067	-0.028*
	Mean (sd)	Mean (sd)	Mean (sd)	Mean (sd)	
Age	23.641 (3.009)	22.614 (2.856)	23.766 (3.089)	22.509 (2.813)	-0.125
Observations	1647	3726	1413	3656	

Note:*** p< 0.01, ** p< 0.05 and * p< 0.1

of KP. Since KP was implemented in WB, the women in WB are considered to be in the treatment group and women in Bihar and Jharkhand are in control group. Since we do not have data on KP participation, our estimates are Intent-to-Treat(ITT) similar to Sen & Thamarapani (2023) and Das & Sarkhel (2023). This method allows us to overcome the potential endogeneity problem associated with selection into the program due to age and household income criteria. Since the some characteristics of women across treatment and control states are different, we control for their characteristics to avoid bias in the estimates.

Formally, we estimate the following model for employed woman i in year t :

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

where $Y_{idt} = 1$ if woman i in district d at time t is employed as a regular salaried employee and zero otherwise. $WB_{it} = 1$ if woman i is living in WB and zero otherwise. $Post_{it} = 1$ if the observation i is from the post the implementation of KP, that is 2017-23, and zero otherwise. X_{ist} is the vector of control variables, which includes 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. Since we do not have panel data, we cannot include individual fixed effects that would have taken into account the time invariant characteristics of women that would explain the preferences or other unobserved factors that may affect the individual's labour supply choice. To overcome this problem, we include year and district fixed effects. γ_t is the time fixed effects to account for time specific trends that may influence the labour market outcomes of women. In equation (1) θ_d is the district fixed effects. Since district boundaries have changed between 2009 and 2022-23, we recode the district identifiers to match with the boundaries in 2009. We cluster the standard errors at the state-age level. β_3 is the causal ITT of the impact of KP on the employment outcomes.

We restrict our sample to women above the legal age of marriage, that is, above 18 years. We also do not include women who are currently in education in the analysis. The covariates especially those pertaining to social groups allow us to account for various welfare

schemes targeted to specific groups such as Sikshasree in West Bengal targeted to SC students studying in standard 5 to 8, that may affect the outcomes in our analysis. Further, the district fixed effects also account for welfare schemes such as SABLA targeted to specific districts across treated and control states.

4 Results

4.1 Main Results

For the main results, we focus on the employment outcomes of urban women, as urban areas offer greater opportunities for accessing more remunerative employment. The primary outcome of interest is the probability that a woman is employed as a regular wage or salaried (RWS) employee as against employment as self-employed, in casual wage work, available for work but not employed, engaged in domestic work. We focus on RWS employment as it involves continuous employment and workers are compensated in a monthly basis. In contrast, casual wage work involves irregular work requiring low education and skills, and compensation on daily basis. Hence, casual wage workers also lack social security. The earnings from self-employment is lower than that from RWS employment. Moreover, self employment in India is dominated by Own Account Enterprises and small firms and hence social security of workers in these firms is negligible.

We report the main results, the estimates of equation (1) in Table 2. The sample includes urban women from WB, Bihar and Jharkhand. Column (1) reports the regression results with district and time fixed effects as controls. The results in columns (2) and (3) report the estimates by sequentially adding individual characteristics and household characteristics respectively. Since KP was implemented at the state level and the eligibility is based on age, we cluster the standard errors at the state-age level. The results show that the implementation of KP has a statistically significant positive effect on the nature of employment of urban women. We find that post the implementation of KP, women in WB are more likely to be employed as RWS workers in comparison to women in Jharkhand and Bihar. In the most

parsimonious model with district and year fixed effects, the effect of KP on being employed as a RWS worker by small and statistically insignificant. However, as we include individual control variables the estimated effect increases to 4.1 percentage points. Our most preferred specification includes individual and household controls as well as year and district fixed effects. The estimates of this model show that post the implementation of KP, women in WB are 4.6 percentage points more likely to be employed as RWS workers.

A reason for increase in regular salaried employment could be due to an increase in FLFP. In column (4) we report the estimated coefficient of the effect of KP on labour force participation among the treated cohort in West Bengal in comparison to those in the control states. The results show that FLFP increases by 3.8 percentage points post the implementation of KP among the treated cohort, but this increase is not statistically significant. The results reported in Table 2 indicate that even though the implementation of KP lead to a statistically significant increase in employment as RWS workers, it fails to increase FLFP significantly. The results show a shift in the nature of jobs towards RWS employment among women as an effect of KP.

These results indicate a shift in women’s preference from part-time jobs or occasional work towards salaried or regular wage work. As a result it relaxes the constraint of matching the supply of jobs with the jobs women are willing to do. The results show that KP provides incentives to women to seek gainful employment even after they attain the legal marriage age of 18, thus showing that a CCT for education and gendered norms change also leads to changes in women’s labour market outcomes. We further examine the robustness of these results using Placebo tests, event studies and employment of males as RWS workers in the next section.

4.2 Robustness checks

4.2.1 Placebo treatment

We can attribute causal interpretation to the results reported in Table 2 if the employment outcomes of women in WB and the control states follow similar trends prior to the imple-

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

	Dependent variable:			
	Regular	Salaried	Employment	LFP
	(1)	(2)	(3)	(4)
Post $\times$ WB	0.009 (0.011)	0.041** (0.015)	0.046** (0.015)	0.038 (0.052)
Post	0.100*** (0.027)	0.037 (0.024)	0.032 (0.027)	-0.071 (0.043)
Individual controls	No	Yes	Yes	Yes
Household controls	No	No	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	7345	7345	7345	7345
R^2	0.222	0.484	0.501	0.518

This table reports the DiD estimates for the effect of KP on employment as regular wage or salaried workers. The sample for these estimates are all women in the treated cohort. We use women in Bihar and Jharkhand as the control group. Sampling weights are applied. The pre-KP data is drawn from NSS 64th Round (2009-10) and NSS 68 Round (2011-12). The post KP data is drawn from five PLFS rounds from 2017-23. Standard errors are reported in the parenthesis. Individual controls include age, marital status, relation with household head, general educational level of individual women. Household control variables include household size, religion and caste category of the household the individual belongs to. The standard errors are clustered at the state-age level.*** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$.

mentation of KP in WB. Hence we carry out a pre-trend analysis for employment in salaried or regular wage employment. To check whether the pre-parallel trends hold, we consider a pseudo reform that affects WB, and assume it to have taken place between 2011 and 2012. We restrict the sample to the pre-KP time period and check whether this pseudo reform has any impact on the employment outcomes of women in WB. The statistical significance of the interaction term of WB and fake-treatment would indicate the violation of pre-parallel trends. We report the results corresponding to this pseudo reform with the outcome that women are employed as regular wage or salaried worker in Table 3. The standard errors clustered at the state-age level. Since the estimated coefficients of the interaction between WB and fake-treatment across different models are not statistically significant, we cannot reject the null hypothesis of pre-parallel trends. This holds even when we do not include any individual or household characteristics as covariates. Even though there is imbalance in the covariates in the pre-treatment period between WB and the control states, the unconditional parallel trends holds, hence the main identifying assumption holds. Further, once we control for individual and household characteristics and include district and year fixed effects, we find that the coefficients are small in magnitude. So, we cannot reject the null-hypothesis of pre-parallel trends for LFP of women. Hence, can reasonably be confident that the results reported in Table 2 are causal and not spurious. The increase of women’s employment as regular wage or salaried workers in WB can be attributed to KP and not to other factors. Similarly, we cannot reject the null hypothesis of no significant changes in FLFP among the treated cohort in the pre-treatment period.

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

	Dependent variable:			
	Regular	Salaried	Employment	LFP
	(1)	(2)	(3)	(4)
Pseudo Post $\times$ WB	0.032 (0.026)	0.020 (0.023)	0.019 (0.022)	0.049 (0.031)
Pseudo post	0.017 (0.014) (0.014)	0.024 (0.017) (0.017)	0.029 (0.018) (0.018)	-0.034 (0.031) (0.031)
Individual controls	No	Yes	Yes	Yes
Household controls	No	No	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	3060	3060	3060	3060
R^2	0.076	0.195	0.205	0.353

This table reports the DiD estimate for the effects of the placebo experiment of fake KP on employment as regular wage or salaried employee. The sample for these estimates are women in the age group 18 to 28 years. We use women in Jharkhand and Bihar as the control group. Sampling weights are applied. The sample is restricted to the pre-KP period of the original sample of data, that is, between 2009 and 2012. If the year of survey is 2012, then it is in a fake-treatment period. Individual controls include age, marital status, relation with household head, general educational level of individual women. Household control variables include household size, religion and caste category of the household the individual belongs to. The standard errors are clustered at the state-age level. *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$.

4.2.2 Event study plots

To further assess the robustness of our findings, we estimate a difference-in-differences event-study specification. We estimate the following event study specification:

$$Y_{it} = \alpha + \sum_{s \neq 2009} \beta_s (TreatedCohort_{it} \times WB_{it}) + \delta X_{it} + \pi_1 TreatedCohort_{it} + \pi_2 WB_{it} + \gamma_s + \theta_d + \epsilon_{it} \quad (2)$$

where $s = \{2010, 2011, 2012, 2017, 2018, 2019, 2020, 2021, 2022\}$ and the reference year is 2009. We use the same set of controls and include district fixed effects and year fixed effects. We cluster the standard errors at the state-age level. The coefficients β_j gives the average difference between the treated and control groups with respect to 2009. The parallel trends

assumption will get strengthened if β_{2010} , β_{2011} , β_{2012} are statistically insignificant, while our main result will get validated if at least some of the estimates of $\beta_{2017}, \beta_{2018}, \beta_{2019}, \beta_{2020}, \beta_{2021}, \beta_{2022}$ are positive and statistically significant. Figure 1 plots the event study estimates of equation (2) corresponding to the employment outcomes of women along with the 95% confidence intervals of the coefficients clustered at the state-age level.

Figure 1 shows the effect of KP on salaried or regular wage employment for each year included in our sample with 2009 as the reference year. It plots the event study results with Bihar and Jharkhand as control states. To further ensure that our results are not biased by the choice of control states, we estimate the dynamic effects as given by equation 2 by including all major neighbouring states of West Bengal, namely, Bihar, Jharkhand, Odisha, Assam as control states. From Figure 1 we find that women from WB in the pre-treatment period are not more likely to be employed as regular salaried workers as the coefficients β_{2010} , β_{2011} , and β_{2012} are statistically insignificant. Hence the event study supports the parallel pre-trends assumption. More specifically, it shows that the employment outcomes of women in WB and the control states are not statistically different prior to the implementation of KP. However, we find that the coefficient β_{2017} , β_{2020} and are positive and statistically significant. Moreover, when we consider all the neighbouring states the coefficients corresponding to β_{2022} is also statistically significant. The results support the main result that the KP positively affected the employment of women as RWS workers since the implementation of the programme. To ensure that our results are not biased, we further report the event study results for Jharkhand, Odisha and Assam respectively in Figure 2. The main results hold. We exclude Bihar from the analysis as Bihar has devised schemes targeted towards empowering girl students and introduced conditional transfers to encourage grade completion. Hence, we want check the robustness of our main results by excluding Bihar. We find that our main results hold when we consider all the neighbouring states of West Bengal, Jharkhand, Odisha and Assam as control states respectively.

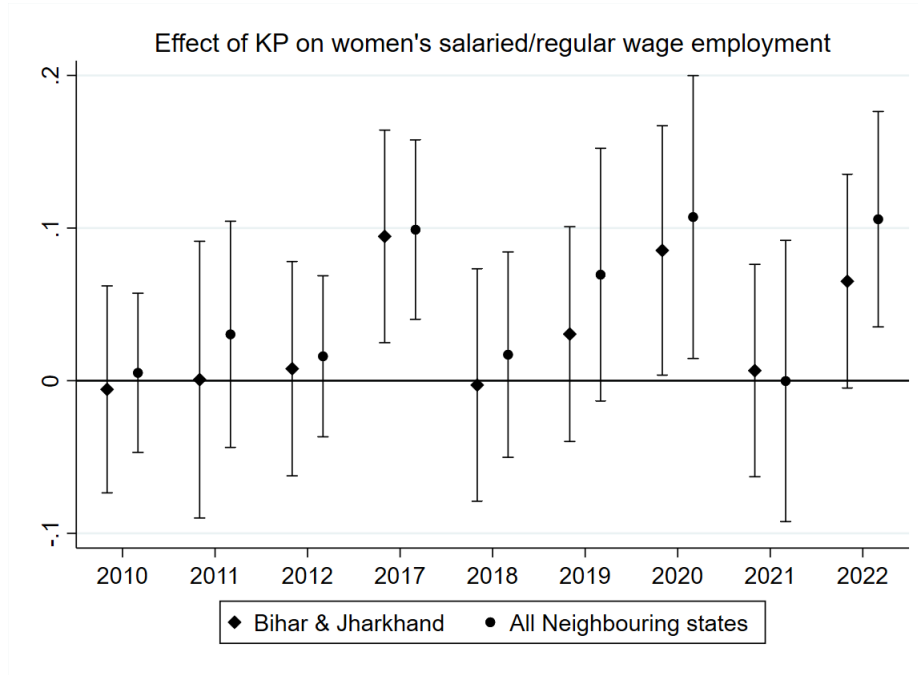


Figure 1: *Event study estimates for effect of KP on regular wage and salaried employment in urban areas. (Note: The standard errors are clustered at the state-age cohort level. The treatment group includes urban women in West Bengal. The models controls for individual, household covariates and include district fixed effects. Individual controls include age, marital status, relation with household head, general educational level of individuals. Household control variables include household size, religion and caste category of the household the individual belongs to. The model 'All districts' include individuals across all districts in the treatment and control states in the sample.)*

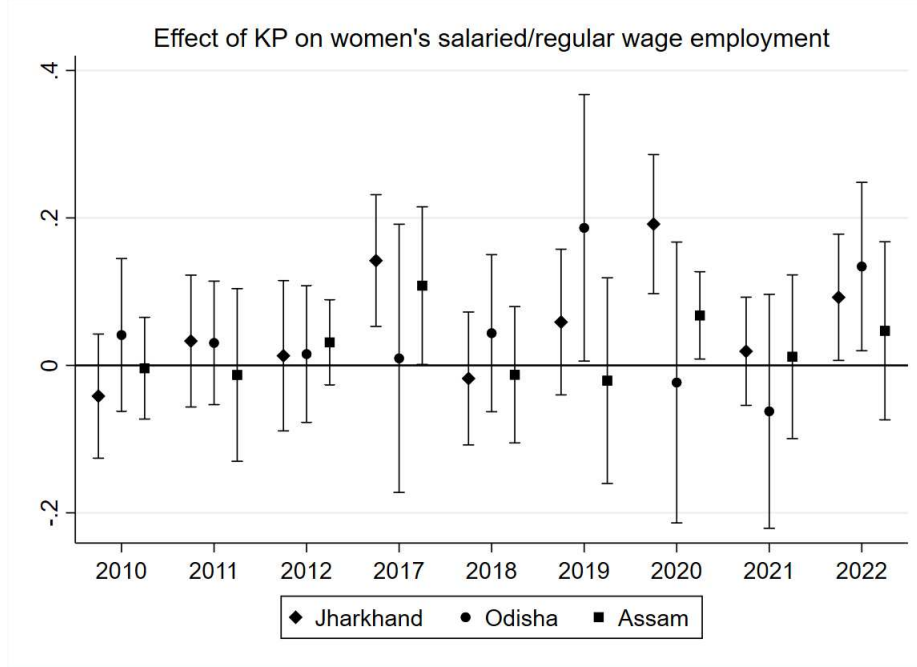


Figure 2: *Event study estimates for effect of KP on regular wage and salaried employment in urban areas. (Note: The standard errors are clustered at the state-age cohort level. The treatment group includes urban women in West Bengal. The models controls for individual, household covariates and include district fixed effects. Individual controls include age, marital status, relation with household head, general educational level of individuals. Household control variables include household size, religion and caste category of the household the individual belongs to. The model 'All districts' include individuals across all districts in the treatment and control states in the sample.)*

4.2.3 Other Robustness checks

Exclusion of Border districts: We exclude the districts that share a common border with WB from our sample. The neighbouring districts may be similar in terms of economic conditions, social norms and other factors that may influence the employment outcomes. Moreover, we cannot rule out migration for jobs across the borders. By excluding the border districts, we can separate out the effects of KP on the employment outcomes. The results are reported in Table 4. We find that when we exclude the border districts, and restrict the sample to Bihar and Jharkhand, the coefficients are positive but statistically significant at 10% level of significance. However, when we consider all the neighbouring states, the coefficients are positive and statistically significant.

Table 4: *Difference-in-difference estimates for the effect of KP on regular salaried employment of women: Border districts excluded*

Dependent variable:				
Regular Salaried Employment				
	Bihar & Jharkhand		All neighbouring states	
	(1)	(2)	(3)	(4)
Post $\times$ WB	0.036*		0.072**	
	(0.019)		(0.032)	
Post	0.043		0.023	
	(0.036)		(0.030)	
Pseudo Post $\times$ WB		-0.011		0.005
		(0.029)		(0.028)
Pseudo Post		0.051*		0.032
		(0.023)		(0.021)
Individual controls	Yes	Yes	Yes	Yes
Household controls	Yes	No	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	4742	2013	7029	3144
R^2	0.595	0.238	0.792	0.240

This table reports the DiD estimate for the effects of the placebo experiment of fake KP on employment as regular wage or salaried employee. The sample for these estimates are women in the age group 18 to 28 years. We use women in Jharkhand and Bihar as the control group. Sampling weights are applied. The sample is restricted to the pre-KP period of the original sample of data, that is, between 2009 and 2012. If the year of survey is 2012, then it is in a fake-treatment period. Individual controls include age, marital status, relation with household head, general educational level of individual women. Household control variables include household size, religion and caste category of the household the individual belongs to. The standard errors are clustered at the state-age level.

*** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$.

Male employment as RWS workers: To assess the credibility of our findings and ascertain whether the increase in RWS in West Bengal is attributable to KP, we conduct an additional falsification test by estimating Equation (1) using a sample restricted to men. We examine whether males are more likely to be employed as RWS workers post the implementation of KP. If the changes in employment are driven by KP, we expect no changes in the likelihood of being employed as RWS worker among the males. We report the results in Table 5. We find no significant changes in employment as RWS workers in the urban areas among males in the treated cohorts both when we consider men in Bihar and Jharkhand as control group. These results give us confidence that the increase in RWS employment

among urban women in WB is indeed due to KP and not because of other factors that may influence the employment outcomes in general.

Table 5: *Difference-in-difference estimates for the effect of KP on employment of men*

Dependent variable: Regular Salaried Employment						
	(1)	(2)	(3)	(4)	(5)	(6)
Post $\times$ WB	0.081 (0.054)	0.076 (0.040)	0.037 (0.042)			
Post	0.077 (0.051)	0.128** (0.042)	0.167** (0.049)			
Pseudo Post $\times$ WB				-0.018 (0.062)	-0.036 (0.058)	-0.014 (0.056)
Pseudo Post				-0.015 (0.049)	0.005 (0.047)	-0.004 (0.048)
Individual controls	No	Yes	Yes	No	Yes	Yes
Household controls	No	No	Yes	No	No	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6400	6400	6400	2847	2847	2847
R^2	0.323	0.407	0.432	0.050	0.104	0.133

This table reports the differences in differences estimates for the effect of KP on employment in different sectors. The sample for these estimates are all men in the treated cohort. In the first specification Columns (1) and (2)), we use men in Bihar and Jharkhand as the control group. In the second specification Columns (3) and (4)), we use men in all the neighbouring states as the control group. Sampling weights are applied. The pre-KP data is drawn from NSS 66th Round (2009-10) and NSS 68 Round (2011-12). The post KP data is drawn from five PLFS rounds from 2017-23. Standard errors clustered at state-age level are reported in the parenthesis. Individual controls include age, marital status, relation with household head, general educational level of individual men. Household control variables include household size, religion and caste category of the household the individual belongs to. Columns(1) to (3) report the results based on the caste groups. Columns (4) to (6) report the results of fake-treatment for the three social groups respectively, where we restrict the sample to the period before the implementation of KP and examine the effect of a pseudo reform in between 2008 and 2011. *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$.

Randomization Inference: Next, we conduct a randomization inference test to assess the effect of KP on women’s employment as RWS workers. This exercise involves carrying out 500 iterations in which the districts in WB, Jharkhand and Bihar were randomly assigned treatment status. Figure 3 presents the results from the randomization inference. The distribution of the coefficients from the randomization is centered around zero. We observe that the density of estimated coefficients that are larger than the actual coefficient is low.

Hence, Figure 3 shows that the main results reported in Table 2 is not due to random chance.



Figure 3: *The figure presents the results of the randomization inference test for the effects of KP on employment as RWS workers among urban females. We carry out 500 iterations where the treatment variable is randomly shuffled among the districts in WB, Bihar and Jharkhand. The red line represents the coefficient obtained from the regression using the actual KP data.*

4.3 Change in nature of employment

We estimate equation (1) with alternate types of employment as outcome variables to examine whether there is a change in the other forms of employment or engagement among women who have been exposed to KP. If indeed KP is increasing RWS employment, and therefore changing the nature of employment, we should also observe a simultaneous change in other forms of employment. In particular, we examine whether there is a change in self-employment, engagement in casual wage work, domestic work and availability for work among urban women changes due to KP.

We report the estimated results in Table 6. In Panel A we report the estimates for equation 1, with domestic work, self-employment, engagement in casual wage work, and availability for work as outcome variables respectively. Panel B reports the results of the pseudo-treatment, that tests the pre-parallel trends by restricting the observations to the pre-treatment period. The results show a 3.0 percentage points increase in the probability of being available for work among the treated cohort in WB post KP, relative to those in Bihar and Jharkhand. However, even though the coefficients are negative, we do not find a significant decrease in

self-employment, employment as casual wage worker or engagement in domestic work. We also do not see a significant change in the likelihood of being available for work. The results from Panel B show that we cannot reject the null hypothesis of no change in employment patterns in the pre-treatment period between the treated and control states. These results show that the increase in RWS employment is also accompanied by an increase in women being available for work. These results suggest that KP has changed the social norms related to the nature of work women are willing to do. The positive coefficients on availability for work suggest that the availability of additional RWS employment opportunities could further increase women's participation in remunerative employment.

4.4 Sectoral change in employment of women

Our main results show that post KP, there is a change in the type of employment in WB vis-a-vis women in Bihar and Jharkhand. As a consequence, there may be a shift in the sectors where women are working. We use equation (1) to estimate this equation with the outcome variables being employment in manufacturing, services and primary sectors. We report the results in Table 7. Columns (1)-(3) report the regression results for employment in manufacturing, services and primary sector respectively. In Columns (4)-(6) the corresponding results for checking the validity of pre-parallel trends assumptions are reported. From the results reported in Table 7 we find that the employment in manufacturing sector is increasing significantly. There is a 5.3 percentage point increase in the employment of women in the manufacturing sector in WB post the implementation of KP. However, we do not see any statistically significant change in employment in services sector. Women's employment in the primary sector decreases, even though the coefficients are significant at 10% level of significance. These results indicate shift in the composition of the female labour force in the urban areas towards employment in the manufacturing sector, post the KP reform in WB.

Table 6: *Difference-in-difference estimates for the effect of KP on other types of employment*

Panel A				
	Dependent variable:			
	Domestic Work	Self Employment	Casual Wage	Available for Work
	(1)	(2)	(3)	(4)
Post $\times$ WB	-0.046 (0.049)	-0.033 (0.045)	-0.005 (0.011)	0.030** (0.014)
Post	0.106* (0.042)	-0.014 (0.036)	-0.007 (0.009)	-0.083*** (0.021)
Individual controls	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	7345	7345	7345	7345
R^2	0.573	0.409	0.050	0.618
Panel B: Pseudo reform				
	Dependent variable:			
	Domestic Work	Self Employment	Casual Wage	Available for Work
Pseudo Post $\times$ WB	-0.050 (0.031)	0.021 (0.030)	0.023 (0.018)	-0.013 (0.021)
Pseudo Post	0.038 (0.031)	0.001 (0.013)	-0.005 (0.012)	-0.058* (0.022)
Individual controls	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	3060	3060	3060	3060
R^2	0.356	0.085	0.139	0.267

Panel A reports the DiD estimates for the effects of the KP on alternative employment outcomes. The sample for these estimates are women in the age group 18 to 28 years. We use women in Jharkhand and Bihar as the control group. Sampling weights are applied. Individual controls include age, marital status, relation with household head, general educational level of individual women. Household control variables include household size, religion and caste category of the household the individual belongs to. The standard errors are clustered at the state-age level. Panel B reports the estimates of placebo experiment of pseudo KP reform on employment as regular wage or salaried employee. The sample is restricted to the pre-KP period of the original sample of data, that is, between 2009 and 2012. If the year of survey is 2012, then it is in a fake-treatment period. *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$.

Table 7: *Difference-in-difference estimates for the effect of KP on employment of women in different sectors*

	Dependent variable: Employment in					
	Manufacturing		Services		Primary	
	(1)	(2)	(3)	(4)	(5)	(6)
Post $\times$ WB	0.053** (0.024)		-0.002 (0.039)		-0.049 (0.026)	
Post	-0.606*** (0.032)		-0.092* (0.034)		-0.094* (0.036)	
Pseudo Post $\times$ WB		0.058 (0.040)		0.001 (0.023)		0.037 (0.033)
Pseudo Post		-0.616*** (0.038)		-0.105*** (0.022)		-0.100*** (0.024)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7345	3060	7345	3060	7345	3060
R^2	0.366	0.472	0.513	0.175	0.449	0.135

This table reports the differences in differences estimates for the effect of KP on employment in different sectors. The sample for these estimates are all women in the treated cohort. We use women in Bihar and Jharkhand as the control group. Sampling weights are applied. The pre-KP data is drawn from NSS 66th Round (2009-10) and NSS 68 Round (2011-12). The post KP data is drawn from five PLFS rounds from 2017-23. Standard errors clustered at state-age level are reported in the parenthesis. Individual controls include age, marital status, relation with household head, general educational level of individual women. Household control variables include household size, religion and caste category of the household the individual belongs to. Columns(1) to (3) report the results based on the caste groups. Columns (4) to (6) report the results of pseudo-treatment for the three social groups respectively, where we restrict the sample to the period before the implementation of KP and examine the effect of a pseudo reform in between 2008 and 2011. *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$.

4.5 Mechanism: Marriage or education?

The KP targets to change gendered social norms by providing a CCT for keeping girls in education as well as keeping them unmarried. The K2 component of KP can potentially reduces the financial constraint faced by households in educating the girls. As a result, girls could enroll and complete a higher educational degree or complete a technical degree in subjects such as agriculture, engineering etc. Such a degree may enable women exposed to the program to acquire skills and therefore get better jobs. While KP aims to reduce under-age marriage, it may or may not reduce marriage of women above 18 years. However,

previous studies (Andres et al., 2017) show that in urban areas, unmarried women are more likely to work as married women are expected to be the primary care giver in the family and conform to the stigma attached with working outside homes. KP can lead to a decline in the proportion of married women by keeping them in education for longer duration. Both these channels could potentially explain the shift in the nature of employment observed as a consequence of KP. Hence, we examine which of these two channels work.

First, we examine whether KP leads to a change in marital status of women. The outcome variable of interest is whether a woman is married. These results are reported in Table 8. We find that KP has not had significant effect on the marital status of women above the age of 18. We also find no significant changes in completion of higher secondary education among women above 18 due to this CCT.

However, from the summary statistics we find that there has been a decline in proportion of women with no technical degree post KP in WB. We examine whether this change is due to KP and whether it is statistically significant. These results are reported in Table 9. The results show statistically significant increase in the proportion of women with technical education in WB post KP. Since technical education can be of different types, we examine whether there has been an increase in women with technical training with graduate degree or a technical diploma. We find that there is an increase in technical diploma among the women post the implementation of KP, but no significant increase in technical graduate degree. We find a 3.6 percentage point reduction in the women with no technical degree along with a 4.4 percentage point increase in women with technical diploma in WB post the implementation of KP. These results also explains the increase manufacturing jobs due to KP.

Data from NSSO 75th Round on consumption expenditure of education shows that for the year 2017-18, the average annual expenditure on tuition fees for girls enrolled in graduate degree program in urban areas is INR 10253 while that for any technical graduate degree is INR 56005 and technical diploma is INR 29871. The duration of diploma courses are shorter than that of graduate diploma and degree courses. Hence, the K2 component probably relaxes the budget constraint faced by the households, which leads to an increase in women

Table 8: *Difference in differences estimates for the effect of KP*

	Dependent variable:			
	Completed HS education		Married	
	(1)	(2)	(3)	(4)
Post $\times$ WB	0.0001 (0.000)		0.044 (0.022)	
Post	0.000 (0.000)		-0.059 (0.039)	
Pseudo Post $\times$ WB		-0.000 (0.000)		0.000 (0.000)
Pseudo Post		-0.000 (0.000)		-0.000 (0.000)
Individual controls	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	7345	3060	7345	3060
R^2	1.000	1.000	0.799	1.000

This table reports the DiD estimate for the effects of the KP on marital status of women in the treated cohort. Sampling weights are applied. In Column (2) the sample is restricted to the pre-KP period of the original sample of data, that is, between 2008 and 2012. If the year of survey is 2011-12, then it is in a fake-treatment period. Standard errors, clustered at the state-age level are reported in the parenthesis. Individual controls include age, marital status, relation with household head, general educational level of individual women. Household control variables include household size, religion and caste category of the household the individual belongs to. The standard errors clustered at the state-age-cohort level. *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$.

Table 9: *Difference-in-difference estimates for the effect of KP on technical education*

	Dependent variable: Technical education					
	No technical education		Graduate-diploma & degree		Diploma	
	(1)	(2)	(3)	(4)	(5)	(6)
Post $\times$ WB	-0.036** (0.010)		-0.007 (0.005)		0.044*** (0.011)	
Post	0.021 (0.020)		0.029 (0.020)		-0.050*** (0.010)	
Pseudo Post $\times$ WB		-0.007 (0.021)		-0.014 (0.012)		0.021 (0.014)
Pseudo Post		-0.012 (0.011)		0.014 (0.008)		-0.002 (0.007)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7345	3060	7345	3060	7345	3060
R^2	0.706	0.175	0.080	0.078	0.786	0.137

This table reports the DiD estimate for the effects of KP on technical education among women. The sample for these estimates are women in the treated cohort. We use women in Jharkhand and Bihar as the control group. Sampling weights are applied. In columns (2) and (4) the sample is restricted to the pre-KP period of the original sample of data, that is, between 2008 and 2012. If the year of survey is 2011-12, then it is in a fake-treatment period. Standard errors are clustered at the state-age level and reported in the parenthesis. Individual controls include age, marital status, relation with household head, general educational level of individual women. Household control variables include household size, religion and caste category of the household the individual belongs to. *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$.

completing technical diploma. The increase in completion of technical diploma potentially reduces the mismatch in skills and education needed for the jobs available, thereby increasing remunerative employment. Further, since technical diploma is less specialized than a technical degree and is also less expensive, the reservation wages of women with technical diplomas is likely to be less than that of those with technical degrees. Hence women with technical diplomas are more likely to be in employment even in situations when demand side constraints are not relaxing in the labour market. A change in completion of technical education seems to drive the shift in the nature of employment towards regular wage or salaried work despite no significant decline in the likelihood of women being married due to KP. These findings are consistent with the findings of Fletcher et al. (2019) that women with vocational training are also the ones more likely to work.

Further, we examine whether educational attainment contributes to the heterogeneous effects of KP. The K2 component of KP is provided to girls upon attaining 18 years of age, conditional on their remaining unmarried at that age. This is also approximately the age at which girls complete higher secondary (HS) education. Moreover, HS education marks the first stage at which students can pursue specialized training (Kumar & Sahoo, 2024). We therefore examine whether the impact of KP on employment as RWS workers varies by completion of HS education. The results are reported in Table 10. The estimates indicate that the positive effect of KP on employment as an RWS worker is statistically significant among women who have completed HS education. In contrast, the estimated effect is not statistically significant among those who have not completed post-secondary education. These findings suggest that educational attainment may play an important role in determining women’s ability to benefit from the employment opportunities associated with KP.

The results indicate elasticity of labour market outcomes to education subsidies designed to incentivize women towards seeking remunerative jobs. The results show a change in gendered social norm on two aspects: first, the increase in completion of a technical diploma and second, a shift towards regular and remunerative employment. These results also highlight

Table 10: *Difference-in-difference estimates for the effect of KP on regular salaried employment of women based on completing at higher secondary education*

		Dependent variable:			
		Regular Salaried Employment			
		HS and above	Below HS	HS and above	Below HS
		(1)	(2)	(3)	(4)
Post $\times$ WB		0.096** (0.033)	0.027 (0.015)		
Post		-0.043 (0.036)	-0.029 (0.017)		
Pseudo Post $\times$ WB				0.104 (0.076)	-0.011 (0.018)
Pseudo Post				0.007 (0.058)	-0.004 (0.015)
Individual controls	Yes	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations		2599	4746	803	2256
R^2		0.577	0.598	0.260	0.173

This table reports the differences in differences estimates for the effect of KP on employment as regular wage or salaried workers. The sample for these estimates are all women in the treated cohort. We use women in Bihar and Jharkhand as the control group. Sampling weights are applied. The pre-KP data is drawn from NSS 66th Round (2009-10) and NSS 68 Round (2011-12). The post KP data is drawn from PLFS 2017-23. Standard errors are clustered at the state-age level and reported in the parenthesis. Individual controls include age, marital status, relation with household head, general educational level of individual women. Household control variables include household size, religion and caste category of the household the individual belongs to. Columns(1) and (2) report the results based on completion of higher secondary education. Columns (3) and (4) report the results of fake-treatment, where we restrict the sample to the period before the implementation of KP and examine the effect of a pseudo reform in between 2005 and 2011. *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$.

that the effectiveness of KP in improving the labour market outcomes is driven by completing technical diploma and not only completing higher secondary education. However, CCTs that are focused on grade completion, but ignores vocational training or technical training may not translate to more remunerative labour market outcomes.

4.6 Evidence from rural areas

The main mechanism we highlight is through increasing female education, particularly through technical education. If technical education indeed is the channel which leads to better jobs, we should also see a rise in technical education among women in the rural areas. We estimate equation with RWS employment and completion of technical education as the outcome variables respectively. We report the plots of event study estimates in Figure 4. We find no significant changes in the employment of women as RWS workers in the rural areas. A possible reason could be the availability of jobs in the rural areas are limited. However, we find an increase in the completion of technical education. Like in the urban areas, we see a statistically significant increase in women with technical diploma. Similar to the case in urban areas, we do not see a change in obtaining technical graduate diploma or a technical degree. These results show that KP indeed is shifting gendered social norms through education, especially on technical education. However, in the rural areas, the effects on obtaining remunerative jobs are muted and it does not translate to more remunerative RWS jobs or jobs outside the primary sector, probably due to lack of sufficient and suitable employment opportunities (Deshpande & Singh, 2024; Mehrotra & Parida, 2017)

5 Conclusion

In this paper, we essentially study whether a CCT program for education and gendered social norm change can encourage women to work more in remunerative employment or employment with social security. We study the impact of KP implemented in the state of West Bengal in 2013. KP is a CCT having two components, an annual transfer given to

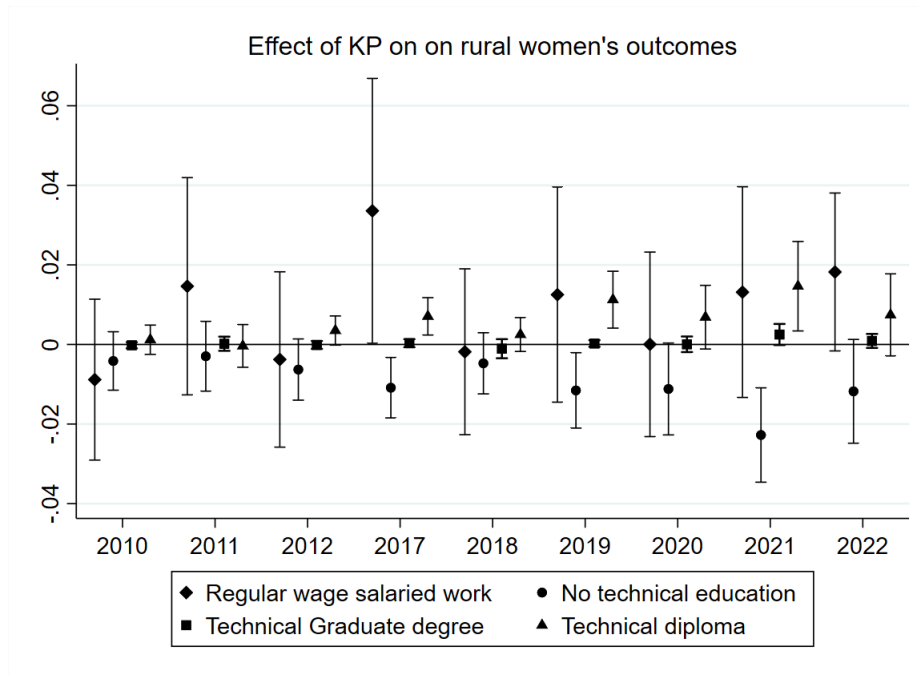


Figure 4: *Event study estimates for effect of KP on employment of rural women. (Note: The standard errors are clustered at the state-age level. The control group includes rural women in Bihar and Jharkhand. The models controls for individual, household covariates and include state fixed effects. Individual controls include age, marital status, relation with household head, general educational level of individuals. Household control variables include household size, religion and caste category of the household the individual belongs to.)*

girls above the age of 13 years, conditioned on being unmarried and enrolled in education. The second component of KP, a lump sum transfer is given girls on attaining the age of 18 conditioned on remaining unmarried and on concurrent status of either continuing education or engaging in occupational pursuit. This component is unique and can potentially relax the binding constraints of gendered social norms as well the liquidity constraints faced by households in investing in girls' education. This can lead to higher participation in the labour market or more specifically, higher participation in remunerative employment.

We exploit cohort specific eligibility rules and timing of the program implementation to employ a quasi-experimental empirical framework for identifying causal effects of the program. We use two rounds of EUS data and six rounds of PLFS data from NSS across Indian states of West Bengal, Bihar and Jharkhand, spanning the years 2009 to 2023. We find that urban women exposed to this program are 10 percentage points more likely to be employed as a salaried or regular wage worker. The program also has a positive impact on employment with paid leave and maternity benefits.

The shift in gendered norms is also reflected a statistically significant increase in women who are available for work. We also find an increase in employment in the manufacturing sector. These results are explained by an increase in completion of technical diploma by the cohorts exposed to KP, even though the marital outcomes do not change significantly. While we focus on the urban areas, the outcomes in the rural areas concur our main findings, especially on increase in women with technical education. We find support for the results of norm change through completion of technical diploma even in the rural areas. While employment in private sector and some social security benefits increase in the rural areas, the effect of KP does not show a significant increase in RWS jobs in the rural areas.

The results suggest a shift in gendered social norms surrounding women's education and a corresponding shift in preferences toward regular employment in urban areas. However, owing to data limitations, we are unable to determine whether exposure to the programme leads to longer working hours or higher earnings. Given the design of the policy, our analysis focuses on the extent to which KP relaxes gendered social norms and expands women's

access to employment opportunities. The labour market outcomes we observe, however, are equilibrium outcomes that may also reflect demand-side factors. Identifying how demand-side conditions interact with the relaxation of social norms would require examining policies or exogenous shocks that relax demand-side constraints specifically in West Bengal but not in the control states. Such an analysis is beyond the scope of the present paper.

The results in the paper show that the design of CCT assumes importance for translating to better jobs for women. Focusing only on grade completion and being in education may not be sufficient to improve the nature of women's employment. Through the analysis in this paper, we are able to identify a policy which directly relaxes gendered social norms and improves the labour market outcomes of women exposed to it in the medium to long run. More broadly, our findings underscore the importance of designing incentives in cash transfer schemes or demand-stimulating policies that target the restrictive gender norms and improve women's economic outcomes.

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Appendix

Table A1: *Age-cohorts from different NSS-EUS and PLFS survey rounds*

Survey year	Age cohort
2008-09	18-28 years
2011-12	18-28 years
2017-18	18-23 years
2018-19	18-24 years
2019-20	18-25 years
2020-21	18-26 years
2021-22	18-27 years
2022-23	18-28 years