Impacts of Conditional Cash Transfers on Women's Educational Time Investments: Evidence from the Indian Time Use Survey*

Sneha Lamba† Prabal K. De‡

December 8, 2025

Abstract

Human capital formation among adolescent girls is frequently constrained by socioeconomic norms that favor early marriage, household labor, and reduced schooling. We study the impacts of a large-scale conditional cash transfer (CCT) program in India—the *Kanyashree Prakalpa*—that incentivizes girls' education and delays school dropout through financial incentives. Using time-use data from a national survey and exploiting cross-state policy variations, we estimate the program's intent-to-treat effects on educational time investments at home and at school. Our estimates indicate that the program raised girls' time devoted to educational activities at home and to homework by about 3.5 percent and 9 percent, respectively, relative to the sample mean. This was accompanied by an substantial reduction in time spent on domestic work. By contrast, we detect no statistically significant changes in school attendance or time spent in school at either the extensive or intensive margin. We also find long-term effects: women exposed to the program exhibit higher educational attainment and greater investment in educational activities in early adulthood, sometimes well after program eligibility has expired. These findings contribute to the growing evidence on the role of CCTs in reshaping intra-household time allocation and generating persistent gains in human capital formation for women.

Keywords: Time use survey; Kanyashree; Conditional Cash Transfer; India

JEL Classification: I20; I28; O53

*Work in progress. Please do not cite without permission.

†lambasneha@iitd.ac.in, Indian Institute of Technology Delhi

‡Corresponding author: pde@ccny.cuny.edu, City College and The Graduate Center, CUNY

1 Introduction

Many developing countries have historically experienced gender imbalances in educational attainment (King and Mason, 2001). In India, although the enrollment gap between boys and girls has narrowed (Jain, 2019), substantial disparities persist in outcomes such as test scores, particularly in rural areas (Das and Singhal, 2023). These disparities constrain human capital formation and perpetuate gendered economic outcomes, including lower female labor market participation. In response, governments worldwide have increasingly implemented policies that target girls' enrollment and retention through conditional cash transfers (CCTs).

CCT programs provide financial incentives to eligible households contingent on meeting conditions such as school attendance, delayed marriage, or immunization compliance for girls. India has implemented several such initiatives. *Apni Beti Apna Dhan* (ABAD), launched in Haryana in 1994, offered a INR 25,000 bond redeemable when a girl reached 18 years of age and remained unmarried, thereby attempting to counter entrenched gender norms and improve girls' status within families (Krishnan et al., 2014). The *Ladli* scheme (Delhi, 2008) (Government of Delhi, 2023), the *Dhanlakshmi* pilot program (Government of India, 2008) (Sekher, 2012), and Andhra Pradesh's *Bangaru Thalli* scheme (2013) (Government of Andhra Pradesh, 2013) extended these efforts by linking cash transfers to schooling and health milestones.

Introduced in 2013 by the Government of West Bengal, the *Kanyashree (Prized Daughter) Prakalpa* is a CCT program designed to empower adolescent girls by incentivizing school enrollment while discouraging dropouts and early marriage. A growing literature has examined the program's effects on human capital formation and early-marriage outcomes. Empirical research using household and administrative data generally finds that Kanyashree has significantly increased secondary-school attendance and retention among adolescent girls relative to comparable states (Dutta and Sen, 2020). Using difference-in-differences methods, these studies document improvements in enrollment and grade progression, particularly for less-educated and rural households. Evidence on learning outcomes is more mixed: Das and Sarkhel (2023) finds that while schooling increases, impacts on test scores are weaker, highlighting complementarities between access-

oriented transfers and investments in school quality. Other work documents declines in child marriage, particularly among girls just below the legal threshold of 18, indicating that the marriage condition binds in economically meaningful ways (Dasgupta, 2024; Dey and Ghosal, 2021). The latter study reports that exposure to Kanyashree Prakalpa reduces the likelihood of early marriage by 6.7 percentage points and raises the probability of completing secondary or higher education by about 6 percentage points. Similarly, (Sen and Thamarapani, 2023) find that program-eligible girls in poorer households are roughly 12 percent more likely to enroll in secondary school and 7 percent more likely to complete higher secondary education, gaining an average of five additional months of schooling. However, whether higher enrollment has translated into improved learning outcomes remains unclear (Das and Sarkhel, 2023). Moreover, heterogeneous implementation and administrative capacity across districts appear to moderate program effectiveness (Mandal, 2025).

This paper investigates the effect of the Kanyashree Prakalpa on girls' educational time investment using novel time-use data. We combine individual time-diary data with cohort and location information to estimate intent-to-treat effects for eligible girls in West Bengal. Time-use surveys capture gender differences in work, education, leisure, and unpaid labor—domains often overlooked in traditional demographic or labor surveys. Because the survey was administered by a national agency independently of the program, timing bias is minimized. Importantly, our analysis helps reconcile a puzzling observation in the literature: while enrollment has increased, test scores have often declined. These outcomes are consistent with a scenario in which students enroll but allocate insufficient time to studying outside school.

Time-use surveys provide important advantages over labor force surveys and administrative data in measuring educational—and non-educational—activities such as leisure and unpaid work (Hirway, 2010). Because information is collected through detailed time-use diaries, typically covering the preceding 24 hours, these data allow researchers to observe explicit trade-offs across activities under a binding time constraint. In doing so, they reveal dimensions of behavior that are often obscured or mis-measured in conventional survey instruments and administrative records. For example, two students may be enrolled in the same school, yet one may devote substantially

more time to studying at home while the other spends more time in unpaid household labor. Standard enrollment measures, which are widely used in education research, are unable to capture such heterogeneity in effort and time allocation. More broadly, the omission of unpaid and informal activities, performed disproportionately by women, leads to systematic underestimation of women's contributions to the economy. By directly measuring how time is allocated across market and non-market activities, time-use data enable more accurate assessment of policy impacts and yield a more precise understanding of economic behavior.

Our conceptual framework builds on Becker's household production and time-allocation model. Time, a fixed endowment for each individual, can be allocated among four broad activities: leisure, market work, non-market home production, and human-capital formation (e.g., study time in school or at home) (Becker, 1965). Time invested in education constitutes a key input in human capital accumulation. CCTs can shift intra-household equilibria through two channels: (i) an income effect that expands the household's budget set, and (ii) a substitution effect that lowers the opportunity cost of schooling. Together, these effects may yield a new equilibrium in which girls allocate more time to education. In reduced-form terms, our testable hypothesis is that the targeted CCT increases girls' educational time investment.

We employ a difference-in-differences identification strategy comparing West Bengal (program state) with neighboring states, contrasting eligible girls with ineligible boys. Analyzing time-allocation patterns offers valuable insights into behavioral responses to policy interventions. Empirical evidence consistently shows that women disproportionately shoulder non-market production and invest less in their own human capital. Time-use data highlight such gendered patterns—particularly differences between time spent on domestic chores and study among school-age children. For low-income households, schooling often competes with income-generating work, suggesting heterogeneity in gender gaps by socioeconomic status.

Our findings show that girls exposed to the Kanyashree Prakalpa were significantly more likely to continue and complete their education. They were 6 percentage points more likely to finish middle school and 6 percentage points more likely to complete secondary education than unexposed

counterparts. Beyond attainment, program exposure increased study intensity: girls were 2 percentage points more likely to have studied in the past 24 hours and devoted an average of twelve additional minutes to study. These gains were concentrated in study time outside school—homework or private tuition—rather than during school hours.

Overall, these results add to the literature on gender-targeted CCTs and provide new evidence on the Kanyashree Prakalpa. While our findings confirm previous results on enrollment, they also highlight the importance of understanding intra-household time allocation and opportunity costs. Time-use data illuminate broader welfare and behavioral effects, including study habits, non-market work, and the persistence of educational gains after financial incentives expire.

2 Background

In India, gender norms dictate girls' human capital investments, including schooling. Adolescent girls in particular are disproportionately responsible for unpaid household work including sibling care, which directly impacts time available for schooling and homework (Eswaran et al., 2013). Social norms also shape parental perceptions of returns to education: boys are more often viewed as future economic providers, whereas investments in daughters' education are perceived to yield lower returns—reflecting both gender stereotypes about academic ability and marital norms under which women typically co-reside with their husband's family after marriage.

The Kanyashree Prakalpa is a CCT scheme launched by the Government of West Bengal in 2013 with the explicit objective of promoting girls' schooling and delaying marriage. The program emerged in a context of persistent gender disadvantage in eastern India, where early marriage, school dropout, and low female labor force participation have historically remained high relative to national averages. According to Census 2011 and the National Family Health Survey, more than half of young women in West Bengal were married before reaching the legal age of 18, and gender gaps widen sharply after the primary-school level (Government of West Bengal, 2014; International Institute for Population Sciences (IIPS), 2017). Together, these socioeconomic forces reduced both

educational investments and long-term economic opportunities for women.

The scheme has two flagship components. The first (K1) provides an annual transfer of INR 1,000 to unmarried girls aged 13–18 who are enrolled in secondary or higher-secondary education. The second (K2) provides a one-time transfer of INR 25,000 upon reaching age 18, conditional on remaining unmarried and continuing in education or training (Government of West Bengal, 2018). Eligibility is largely means-tested, targeting families below specified income thresholds and excluding those already covered by comparable social schemes. Roll-out has been statewide from the outset, covering all districts of West Bengal, but with substantial variation in baseline educational attainment and child-marriage prevalence across districts (Government of West Bengal, 2019; UNICEF India, 2022). Figure 1 shows the number of beneficiairies in terms of the annual transfer (K1) and those in terms of the one-time transfer (K2). In the year of inception, around 1,844,620 K1 transfers were sanctioned and 138,262 K2 grants were sanctioned. These numbers peaked in the years 2020-2021 when more than 2,500,000 K1 transfers and 500,000 K2 were sanctioned.

Please insert Figure 1 about here

Administratively, Kanyashree is implemented by the Department of Women and Child Development and Social Welfare and is conceived as both a social protection scheme and a gender empowerment program (Government of West Bengal, 2014). It is organized through a multi-tiered structure that links schools, blocks, districts and the state secretariat. At the base level, each recognized institution (school, madrasa, college, vocational center) designates a nodal teacher or officer responsible for identifying eligible girls, collecting and verifying application forms, and entering data into the online portal. [1] At the next level, block development offices or subdivision offices

[1] It is widely described as a "cash-plus" initiative that combines financial incentives with digital governance, beneficiary tracking, and communication interventions aimed at adolescents and their families. A defining feature is that all payments are transferred directly to bank accounts in the name of the girl child, reinforcing financial inclusion while reducing leakage and administrative discretion (UNICEF India, 2019). The program has been internationally recognized as an innovative model of gender-targeted social policy, including by the United Nations Public Service Awards.

host data managers who verify applications from institutions in their jurisdiction, resolve documentation issues, and coordinate with local banks(Government of West Bengal, 2019, 2014).

Overall, Kanyashree Prakalpa stands as one of the largest gendered CCTs in the world. Its combination of financial incentives and norm-based interventions has made it a widely cited case study in debates on gender-targeted development policy. Qualitative evidence complements these findings. Interviews and field studies report changes in aspirations, greater parental willingness to invest in daughters, and increased perceived value of girls' education (UNICEF India, 2019; Landesa Rural Development Institute, 2018). Nonetheless, researchers caution that cash incentives cannot, by themselves, overcome structural barriers such as limited labor-market opportunities for educated women and uneven school quality across districts (Mandal, 2022; UNICEF India, 2022).

3 Data and Variables

3.1 Data

Our data comes from the Indian Time Use Surveys (ITUS) conducted in the years 2019 and 2024 by the National Sample Survey Office, Ministry of Statistics and Program Implementation. The ITUS 2019 is the first nationally representative time use survey in the country, prior to which a pilot time use survey was carried out in six Indian States in 1998-99 (Ministry of Statistics and Programme Implementation (MoSPI), Government of India, 2019). In 2019, 518,744 individuals aged six years and older, residing in 138,799 households completed the survey. In 2024, 4,54,192 individuals aged six years and older, in 139,489 households completed the survey. Although the survey was designed to have household members self-report their time allocation, proxy reporting by other household members was permissible [2]. Information was collected using time use diaries for the 24 hour period from 4:00 am on the day before the interview to 4:00 am on the day of the interview. 24 hours were divided into 48 time slots of 30 minutes each. Respondents were asked

[2]Sharma et al., 2025 find that in 36% of cases individuals were not able to self-report their time use and had other household members report on their behalf

to report at most three activities carried out in the 30 minute time slot, within which one activity was designated as a major activity based on the respondents' subjective preference (Sharma et al., 2025). [3] The activities were then coded according to the International Classification of Time Use Statistics (ICATUS) three-digit classification. The ICATUS consists of ten major divisions at the one-digit level for classifying activities which are then disaggregated at the two-digit and three-digit levels. Interviews were carried out all seven days of the week and interviews were spread over all months between January to December, with interviews taking place in four phases. In addition to time use diaries, the survey collected data on individual level characteristics including employment status, gender, age, marital status, highest level of education attained, and relationship to the head of the household. Household level characteristics such as the religion, caste, land ownership, monthly consumption expenditure, and source of fuel for lighting and cooking were also collected. We also use the 2024 round (Ministry of Statistics and Programme Implementation (MoSPI), Government of India, 2024)

3.2 Variables

3.2.1 Outcome Variables: Educational Attainment

We used the usual principal activity status of each individual in our sample to create a binary measure of whether an individual is currently attending an educational institution. We use the highest educational attainment of each individual to create separate binary measures of whether an individual completed primary school, completed middle school, completed secondary school, completed higher secondary school, and completed college (undergraduate studies). We measured whether an individual completed secondary school only for those who are 15 years and older. We measured whether an individual completed higher secondary school only for those individuals who are 17 years and older. We measured whether an individual completed college only for those individuals 21 years and older.

[3] For the purpose of this paper, we consider only the major activity performed in the 30 minute time period.

3.2.2 Outcome Variables: Time Investments

We follow the major one-digit divisions of the ICATUS in the ITUS time use diary data to compute the time spent by each individual on *educational activities* (ICATUS one-digit code 6 for "Learning") for our primary dependent variable. We use the two-digit divisions to compute the time spent by each individual *in school* (ICATUS two-digit code 61 for formal education which includes school/university attendance, extra-curricular activities in school and breaks in place of formal education, and self-study for distance education courses). Further, we compute the time spent by each individual on *homework and tuition* (ICATUS two-digit code 62 which includes homework, being tutored, and course review related to formal education).

While educational time investments are our primary outcome variable of interest, we study how time was reallocated from other activities towards education. To do this, we additionally compute: (i) the time spent by each individual on *leisure* (ICATUS one-digit code 7 for "Socializing and communication, community participation, and religious practices" and code 8 for "Culture, leisure, mass-media and sports practices"), (ii) time spent by each individual on *unpaid work* (ICATUS one-digit code 3 for "Unpaid domestic services for household members" and code 4 for "Unpaid caregiving services for household members"), (iii) time spent by each individual on *paid work* (ICATUS one-digit code 1 for paid work), and (iv) time spent by each individual on *sleep and self-care* (ICATUS one-digit code 9 for self-care which includes sleep and related activities, eating and drinking, and personal hygiene and care).

While minutes of time spent on each of the above activities measure time use at the intensive margin, we also compute time use outcome variables at the extensive margin. To do this, we compute binary variables of whether or not each individual spent any time in the last 24 hours on each of the activities considered above.

3.3 Sample Selection

We include all individuals who reside in West Bengal and its neighboring States (Assam, Bihar, Jharkhand, Odisha, and Sikkim) with which it shares borders. Our main analyses in this paper

consider 13 to 18 year old individuals, the age-group which is currently eligible for the Kanyashree Prakalpa program in both survey years of 2019 and 2024. Our main analyses are based on 23168 individuals. We consider 19-24 year old women in 2019 and 19-29 year olds in 2024 who were exposed to the program in the past in our analyses of long-term effects. Our analyses of long-term effects are based on 35,170 individuals.

3.4 Program Exposure

Figure 2 explains our strategy for measuring exposure to the program. We consider females between the ages of 13-18 residing in West Bengal to be currently exposed to the program. In contrast, males between the ages of 13-18 residing in West Bengal and neighboring States (Assam, Bihar, Jharkhand, Odisha, and Sikkim) are unexposed to the program. We consider 19-24 year old females residing in West Bengal in the survey year 2019 to be exposed to the program in the past, and 19-24 year old males residing in West Bengal or neighboring States to have never been exposed to the program. Similarly, we consider 19-29 year old females residing in West Bengal in the survey year 2024 to be exposed to the program in the past, and 19-29 year old males residing in West Bengal or neighboring States to have never been exposed to the program.

Please insert Figure 2 about here

4 Estimation and Identification

The primary aim of this paper is to examine the impact of the Kanyashree program on educational time investments made by individuals. We use variation across genders, and state of residence in a difference-in-difference specification. Equation (1) below estimates standard two-way-fixed-effects difference-in-differences (DID) models for the effect of the Kanyashree program on educational time investments for the sample by comparing males and females and those who reside in West Bengal compared to those who reside in neighboring states of West Bengal in 2019.

$$\mathbf{Y}_{ih} = \beta_0 + \beta_1 Female_{ih} * WB_{ih} + \beta_2 WB_{ih} + \beta_3 Female_{ih} + X'_{ih}\gamma + H_{ih}\kappa + e_{ih} \text{.....} (1)$$

where, Y_{ih} is the time spent by an individual on educational activities in the main analyses. $Female_{ih}$ is a dummy which captures whether the *i*th individual under consideration is female (0 otherwise). WB_{ih} is a dummy indicating that the individual resides in West Bengal (0 if they reside in neighboring states). X_{ih} is a vector of individual level characteristics such as the age of the individual in years, dummies for marital status of the individual, dummies for the highest education attained by the individual, dummies for the day of week the survey interview was carried out, and dummy for the whether the day was unusual. H_{ih} are household characteristics such as the caste, religion, type of house dwelling, monthly consumption expenditure. And e_{ih} is the idiosyncratic error term. β_1, the coefficient on the interaction between *Female* and *West Bengal* is the DID estimate which captures the intention-to-treat (ITT) effect of the program expousre. And is our coefficient of interest.

Our key parameter of interest, β_1, is the reduced form effect of Kanyashree on the outcome of interest. This inten-to-treat estimate is identified from the between-states (treatment state West Bengal and geographically contiguous neighboring states) variations in the program implementation. There was no such program in these states during the period under consideration. The main condition is the 'parallel trends' assumption that requires that outcomes in the treated state and control states evolved similarly prior to Kanyashree (and would have continued to do so had there been no policy intervention), so any change in outcome can be attributed to the policy and not pre-existing trends. We pursue several strategies to assess the credibility of the parallel trends assumption underlying our DID design. First, we examine raw outcome trends to assess whether West Bengal was already outperforming neighboring states in women's educational outcomes prior to the program. Although descriptive, this provides an important visual diagnostic for differential pre-trends. Second, we assess the robustness of our estimates to alternative control groups by re-estimating the models using different subsets of neighboring states, following an approach similar

to Das and Sarkhel (2023). Third, we conduct a placebo test by estimating the same model for children aged 6-11 who are not covered by the program. An insignificant coefficeint would strongly suggest that the significant effects are not spurious. Finally, we try to perform a more formal tests for potential pre-trends by testing for treatment effects during pre-policy years and verifying that no statistically significant "effects" emerge.

5 Results

5.1 Descriptive Statistics

Table 1 presents summary statistics for adolescents aged 13–18 by gender and by state group (West Bengal versus all control states–Assam, Bihar, Jharkhand, Odisha, and Sikkim). These children belong to the age group eligible for the Kanyashree Scheme. Several patterns emerge. In control states, enrollment and educational attainment are nearly identical for boys and girls. In West Bengal, by contrast, girls are significantly more likely to be enrolled and to reach key educational milestones. Girls in West Bengal are more likely than boys to complete middle school by 6.0 percentage points and secondary school by 6.2 percentage points. These gender differences are economically large relative to the means.

Please insert Table 1 about here

Time-use metrics mirror these attainment differences. Girls in West Bengal are 6.7 percentage points more likely than boys to have spent any time on education in the previous 24 hours, compared with no substantive gender gap in control states. This difference is concentrated entirely in homework and private tuition rather than classroom attendance. While boys and girls attend school at similar rates and for similar durations, girls in West Bengal devote over 20 additional minutes per day to out-of-school study. This is understandable because the amount of time spent in school is often not a choice for children and their families.

These patterns suggest that program-induced changes may operate primarily through time investments made at home. The insignificant difference in time spent in school confirms that the differences are structural rather than driven by changes in school attendance.

5.2 Program Impacts on Educational Attainment

Table 2 reports difference-in-differences (DID) estimates for school attendance and completion among adolescents aged 13–18. Estimates were obtained using ordinary least squares. The coefficient on the interaction term *Female* $\times$ *West Bengal* captures the intention-to-treat (ITT) effect of program exposure. We use five measures of educational attainment, beginning with binary attendance and progressing to higher levels of educational completion.

Please insert Table 2 about here

The estimates indicate substantial gains in schooling outcomes. Exposure to Kanyashree increases school attendance by 9.5 percentage points. The program also raises the probability of completing middle school by 6.0 percentage points and secondary school by 5.9 percentage points. Effects for primary school completion are smaller but statistically significant, while estimates for higher secondary completion are positive but imprecise, reflecting that many individuals in the sample have not yet reached this stage.

These magnitudes are large relative to the existing literature on educational conditional cash transfers and are consistent with earlier evidence on Kanyashree for enrollment and grade progression. The results confirm that the program significantly increased educational attainment among targeted cohorts.

5.3 Program Impacts on Educational Time Investment

While school completion is an important educational outcome, educational inputs such as time spent on learning activities at home are also critical and can only be measured using time-use surveys. Table 3 examines whether the program altered how girls allocate time to education.

Please insert Table 3 about here

Panel A reports extensive-margin effects on whether any educational activity was undertaken in the prior 24 hours, while Panel B reports intensive-margin effects on minutes spent. Program exposure increases the probability of engaging in any educational activity by 2.0 percentage points relative to a baseline mean of 81 percent. The effect is concentrated entirely in homework and private tuition, for which the estimate is 3.3 percentage points. There is no statistically significant effect on school attendance on the diary day.

Similarly, the program increases total study time by approximately 12 minutes per day, driven by an increase of 13 minutes in homework and private tuition. In contrast, time spent in school declines slightly and is statistically insignificant. This pattern suggests that school schedules are relatively inelastic, while after-school study time responds directly to policy incentives.

5.4 Reallocation of Time Across Activities

Table 4 examines how increased educational time affects other activities. Girls exposed to Kanyashree are significantly less likely to engage in unpaid domestic work, with a reduction of 8.8 percentage points. On the intensive margin, they spend approximately 28 fewer minutes per day on unpaid labor. This reduction almost exactly offsets the increase in educational time, indicating that the program primarily reallocates time away from household production rather than leisure or sleep.

Please insert Table 4 about here

Paid work increases modestly and leisure declines slightly. Importantly, time spent on sleep and personal care is unchanged, indicating that increased educational investment does not come at the expense of rest or physical well-being. These findings suggest that the binding constraint on girls' educational investment is household labor demand rather than biological time needs.

This pattern is consistent with Becker–Lewis-style household production models, in which children's time is allocated jointly among household production, market work, and human capital investment. By increasing the returns to girls' schooling, Kanyashree appears to have shifted

household labor allocation decisions, reducing unpaid work and enabling greater educational investment.

5.5 Robustness

To assess robustness, we examine whether results depend on the choice of control states. Although the comparison group is geographically defined, it is possible that one or two states are particularly similar to West Bengal and account for the observed effects. We therefore re-estimate the models from Tables 2–4 using each neighboring state individually as a control group.

Please insert Figures 3-6 about here

Figures 3-6 display the results. Across specifications, point estimates remain stable, positive, and mostly statistically significant. Confidence intervals are tight, and estimates for homework and total study time are robust across all comparisons. The consistency of effects across alternative control groups strengthens the interpretation that the findings reflect program impacts rather than differential state-specific trends.

6 Threats against identification

6.1 Placebo tests

To assess whether estimated effects capture spurious regional trends, Table 5 replicates the analysis for children aged 6–11, who are not eligible for the program. If state-specific confounders were driving results, similar patterns would emerge for this younger cohort. We find no evidence of program effects for primary-aged children. Interaction terms are small, not statistically significant, and often near zero. This supports the assumption that differential trends between West Bengal and comparison states are not responsible for the main findings for adolescents.

Please insert Table 5 about here

6.2 Parallel trends tests

To assess the assumption of parallel trends, that is, the assumption that without the Kanyashree Prakalpa program educational outcomes in West Bengal and neighboring States would have followed similar trajectories, we carry out two tests. First, we provide simple visual representations of the proportion of females between ages 13-18 who completed primary education (Figure 7) and the average number of years of education for females between the ages of 13-18 (Figure 8) in pre-Kanshyree and post-Kanyashree periods. We do this over the survey years of the Indian Demographic and Health Surveys (National Family Health Survey or NFHS) from 1998-99 to 2019-21. In the pre-Kanyashree periods of 1998-99 and 2005-06, we see that a lower proportion of females had completed primary schooling in West Bengal compared to the neighboring states in Figure 7. Similarly, we see a lower average years of education among females in the pre-Kanyashree period in Figure 8. We also see an almost parallel trajectory between 1998-99 and 2005-06 in both Figures 7 and 8. The trajectory for females in West Bengal starts to change (become steeper) sometime between 2005-05 and 2015-16 (Kanyashree started in 2013). By 2019-21, females in West Bengal have higher averages than females in neighboring states. Unfortunately, we cannot test this assumption for time use related variables because the ITUS 2019 is the first even nationally representative time use survey which covered West Bengal.

Please insert Figures 7 and 8 about here

We then carry out a formal test by running the same DID estimation as our main analyses using data from household roster in the NFHS 2005-06 - which is the most recent year we have before 2013. As in our main analyses, we consider only 13-18 year old individuals. In Table 6, we consider the binary outcome variables of completing primary education (13-18 year olds) and completing secondary education (15-18 year olds). We also consider the continuous variable of years of education. We do not find significant coefficients for the interaction term of *Female* $\times$ *West Bengal*. These results further bolster our argument that we are indeed observing the true effects of Kanyashree Prakalpa program rather than for instance different social norms of educating

girls in West Bengal compared to control states.

Please insert Table 6 about here

7 Long-Run Impacts

Although prior research demonstrates improvements in outcomes for Kanyashree participants, evidence on whether these gains translate into improved economic outcomes in adulthood, after individuals no longer qualify for the program, remains limited. Because these programs are explicitly designed to enhance long-run economic prospects, evidence on later-life outcomes is essential for evaluating their full welfare impacts.

Please insert Table 7 and 8 here about here

Tables 7 and 8 examine whether program effects persist into adulthood for individuals aged 19–29. Table 7 shows substantial gains in completed education. Exposure to Kanyashree increases the probability of completing secondary school by 9.7 percentage points, higher secondary school by 5.9 percentage points, and college by 5.5 percentage points. These effects are remarkable given the low baseline rate of college completion in the sample, indicating that the educational gains are not merely transitory.

Table 8 documents persistent time-use effects. Women exposed to the program are 2.3 percentage points more likely to engage in educational activity as young adults and spend approximately nine additional minutes per day studying. Effects are observed for both attendance at educational institutions and time spent on homework. Although smaller than adolescent estimates, these results indicate durable behavioral change in learning effort.

Taken together, the evidence supports three central conclusions. First, Kanyashree significantly increased female educational attainment. Second, it raised the intensity of educational investment by reducing girls' involvement in unpaid domestic work. Third, these effects persist into adulthood, resulting in higher educational attainment and continued investment in learning.

8 Discussion

This paper provides new evidence on the concurrent and long-run effects of the Kanyashree Prakalpa in West Bengal. The program offers cash incentives to families of adolescent girls to encourage school continuation and delay marriage until age 18. Using time-use data and a difference-in-differences strategy that exploits the program's implementation in West Bengal but not in neighboring states with similar cultural and gender norms, we document several clear findings. Some are consistent with existing evidence, albeit using different data, while others are novel and provide new insights into both contemporaneous and longer-term impacts. Together, these results contribute to the global evidence base on education- and gender-focused conditional cash transfer programs.

We find that exposure to Kanyashree reduced girls' time spent on unpaid household work and increased study time almost one-for-one. This is a critical finding, as other estimates suggest that a three-quarter of the total amount of such work is performed by women across the world (Addati et al., 2018)This reallocation indicates that the program relaxed a gender-specific constraint on educational investment—the expectation that girls' primary contribution lies in domestic labor rather than human capital accumulation. In effect, cash transfers appear to have functioned as a partial substitution for girls' labor within the household, lowering the opportunity cost of schooling.

Importantly, the gains were concentrated in out-of-school study rather than classroom attendance. This suggests that even when girls could physically attend school, gendered time constraints limited learning intensively rather than extensively. Kanyashree mitigated this constraint by enabling households to reduce girls' domestic burden, providing a concrete pathway for translating enrollment into educational effort.

The results suggest that the program operated not only through financial support, but by shifting household priorities, time use, and expectations about girls' roles. In doing so, Kanyashree altered the economic calculus of schooling for girls in a social context where adolescent girls have historically faced strong pressure to contribute to household work and to exit school early into marriage.

A defining feature of Kanyashree is its explicit linkage to marriage decisions. Girls become eligible for the largest transfer only upon reaching age 18 unmarried, directly confronting a central institutional barrier to female education in India—early marriage (Field and Ambrus, 2008). Our long-run results, showing persistent gains in educational attainment and continued learning into early adulthood, are consistent with this design. Postponing marriage extends the window for secondary and tertiary schooling and reduces the immediate pressure to specialize into domestic roles. By delaying marriage, the program effectively lengthened the horizon over which returns to education are realized, strengthening incentives for both girls and parents to invest in learning.

This result parallels findings from Bangladesh, where stipend programs that delayed marriage led to increased secondary school enrollment among girls (Hahn et al., 2018). In India, marriage is not only a demographic event but an institutional transition that permanently alters women's access to education and labor markets. Kanyashree's effectiveness thus derives in part from intervening precisely at this transition point.

The results contribute to the global literature on conditional cash transfers by highlighting a mechanism that is rarely directly observed: reallocation of girls' time away from domestic labor. Evaluations of PROGRESA in Mexico and Bolsa Família in Brazil document strong enrollment effects but weaker achievement gains, in part because classroom quality remains unchanged (Behrman et al., 2005; Glewwe and Kassouf, 2012). Cash transfers in Malawi and Colombia have similarly reduced child labor and increased school participation (Baird et al., 2009, 2014; Attanasio et al., 2010), . Our results help reconcile this pattern by showing that CCTs operate heavily through time investment rather than instructional quality. Additionally, few studies examine time use with the granularity available here. The persistence of effects into adulthood places Kanyashree among a smaller group of CCTs with evidence of long-run impacts, akin to PROGRESA's effects on earnings and schooling (Parker and Vogl, 2023).

From a policy perspective, these findings imply that programs targeting girls are most effective when they directly confront gendered production roles within households. Where norms assign domestic responsibility disproportionately to girls, programs that relax time constraints may deliver

larger educational payoffs than those focused only on enrollment. However, such programs are unlikely to succeed without supply-side interventions. On the one hand, more and better-quality schools are needed to increase the returns to educational time investment. At the household level, complementary policies that reduce the need for domestic unpaid work typically performed by women are needed. These include access to childcare, labor-saving household technologies, or tutoring access. The preponderance of evidence, including from this study, shows that publicly valuing girls' education and linking it to economic incentives can influence household decision-making, resulting in the reallocation of time investment for adolescent girls and women and leading to higher human capital accumulation.

References

Addati, L., Cattaneo, U., Esquivel, V., and Valarino, I. (2018). *Care Work and Care Jobs for the Future of Decent Work*. International Labour Office (ILO), Geneva.

Attanasio, O., Fitzsimons, E., Gomez, A., Gutierrez, M. I., Meghir, C., and Mesnard, A. (2010). Children's schooling and work in the presence of a conditional cash transfer program in rural colombia. *Economic Development and Cultural Change*, 58(2):181–210.

Baird, S., Chirwa, E., McIntosh, C., and Özler, B. (2009). Schooling, income, and sexual behavior: The design, implementation, and short-term impacts of a cct program for schooling in malawi. Technical report, World Bank, Washington, DC.

Baird, S., Ferreira, F. H., Özler, B., and Woolcock, M. (2014). Conditional, unconditional and everything in between: A systematic review of the effects of cash transfer programmes on schooling outcomes. *Journal of Development Effectiveness*, 6(1):1–43.

Becker, G. S. (1965). A theory of the allocation of time. *The Economic Journal*, 75(299):493–517.

Behrman, J. R., Sengupta, P., and Todd, P. E. (2005). Progressing through progresa: An impact assessment of mexico's school subsidy experiment. *Economic Development and Cultural Change*, 54(1):237–275.

Das, U. and Sarkhel, P. (2023). Does more schooling imply improved learning? evidence from india's kanyashree prakalpa. *Economics of Education Review*, 97:102–118.

Das, U. and Singhal, K. (2023). Solving it correctly: prevalence and persistence of gender gap in basic mathematics in rural india. *International Journal of Educational Development*, 96:102703.

Dasgupta, A. (2024). Effect of kanyashree prakalpa programme on child marriage and fertility outcomes. *Economic and Political Weekly*, 59(36):58—64.

Dey, S. and Ghosal, T. (2021). Can conditional cash transfer defer child marriage? impact of kanyashree prakalpa in west bengal, india. Warwick Economics Research Paper 1333, Warwick University — Department of Economics. Accessed on December 8, 2025.

Dutta, A. and Sen, A. (2020). Kanyashree prakalpa in west bengal, india: Justification and evaluation. Technical report, International Growth Centre.

Eswaran, M., Ramaswami, B., and Wadhwa, W. (2013). Status, caste, and the time allocation of women in rural india. *Economic Development and Cultural Change*, 61(2):311–333.

Field, E. and Ambrus, A. (2008). Early marriage, age of menarche, and female schooling attainment in bangladesh. *Journal of Political Economy*, 116(5):881–930.

Glewwe, P. and Kassouf, A. L. (2012). The impact of the Bolsa Família program on children's schooling and labor in brazil. *Journal of Development Economics*, 97(2):505–517.

Government of West Bengal (2014). Kanyashree prakalpa: Conditional cash transfer scheme for adolescent girls. Technical report, Department of Women and Child Development and Social Welfare, Kolkata.

Government of West Bengal (2018). Kanyashree prakalpa: Updated guidelines and operational framework. Technical report, Department of Women and Child Development and Social Welfare, Kolkata.

Government of West Bengal (2019). Status of district wise data from 2013–14 to 2018–19: Kanyashree prakalpa. Technical report, Department of Women and Child Development and Social Welfare, Kolkata. Retrieved from https://www.wbkanyashree.gov.in/kp_dashboard_report.php.

Hahn, Y. et al. (2018). Stipend programs and marriage decisions among adolescent girls. *Journal/Working Paper (update details)*. Please update journal, volume, and pages.

Hirway, I. (2010). Estimating workforce using time use statistics in india and its implications for employment policies. In Antonopoulos, R. and Hirway, I., editors, *Unpaid Work and the Economy: Gender, Time Use and Poverty in the Global South*. Palgrave Macmillan.

International Institute for Population Sciences (IIPS) (2017). National family health survey (nfhs-4), 2015–16: West bengal.

Jain, C. (2019). Analysing changes in gender differences in learning in rural india over time. *Journal of Quantitative Economics*, 17(4):913–935.

King, E. M. and Mason, A. D. (2001). *Engendering Development Through Gender Equality in Rights, Resources, and Voices: Summary*. World Bank, Washington, DC.

Krishnan, A., Amarchand, R., Byass, P., Pandav, C. S., and Ng, N. (2014). No one says "no" to money: A mixed methods approach for evaluating conditional cash transfer schemes to improve girl children's status in haryana, india. *International Journal for Equity in Health*, 13(1):11.

Landesa Rural Development Institute (2018). An evaluation of the sabla–kanyashree program in six districts of west bengal, india. Technical report, Landesa, Seattle. Prepared by Elizabeth "Cedar" Louis, Niketa Kulkarni and Cathrin Anderson.

Mandal, T. (2022). Sustainability of educational conditional cash transfers in india: Evidence from kanyashree. *Journal of Development Policy and Practice*, 7(2):201–223.

Mandal, T. (2025). Assessing the sustainability of government educational reform: The case of kanyashree prakalpa. *Springer Educational Review*.

Ministry of Statistics and Programme Implementation (MoSPI), Government of India (2019). Time use survey (tus), 2019: Unit-level data.

Ministry of Statistics and Programme Implementation (MoSPI), Government of India (2024). Time use survey india, 2023–24. Technical report, National Statistical Office, MoSPI, New Delhi.

Parker, S. W. and Vogl, T. (2023). Do conditional cash transfers improve economic outcomes in the next generation? evidence from mexico. *The Economic Journal*, 133(655):2775–2806.

Sen, G. and Thamarapani, D. (2023). Keeping girls in schools longer: The kanyashree approach in india. *Feminist Economics*, 29(4):36–64.

Sharma, D., Swaminathan, H., and Lahoti, R. (2025). Does it matter who you ask for time use data? *The World Bank Economic Review*. Published 21 February 2025.

UNICEF India (2019). Ending child marriage in west bengal: The kanyashree prakalpa case study.

UNICEF India (2022). Leveraging large-scale sectoral programmes to prevent child marriage: The kanyashree prakalpa case study. Technical report, UNICEF.

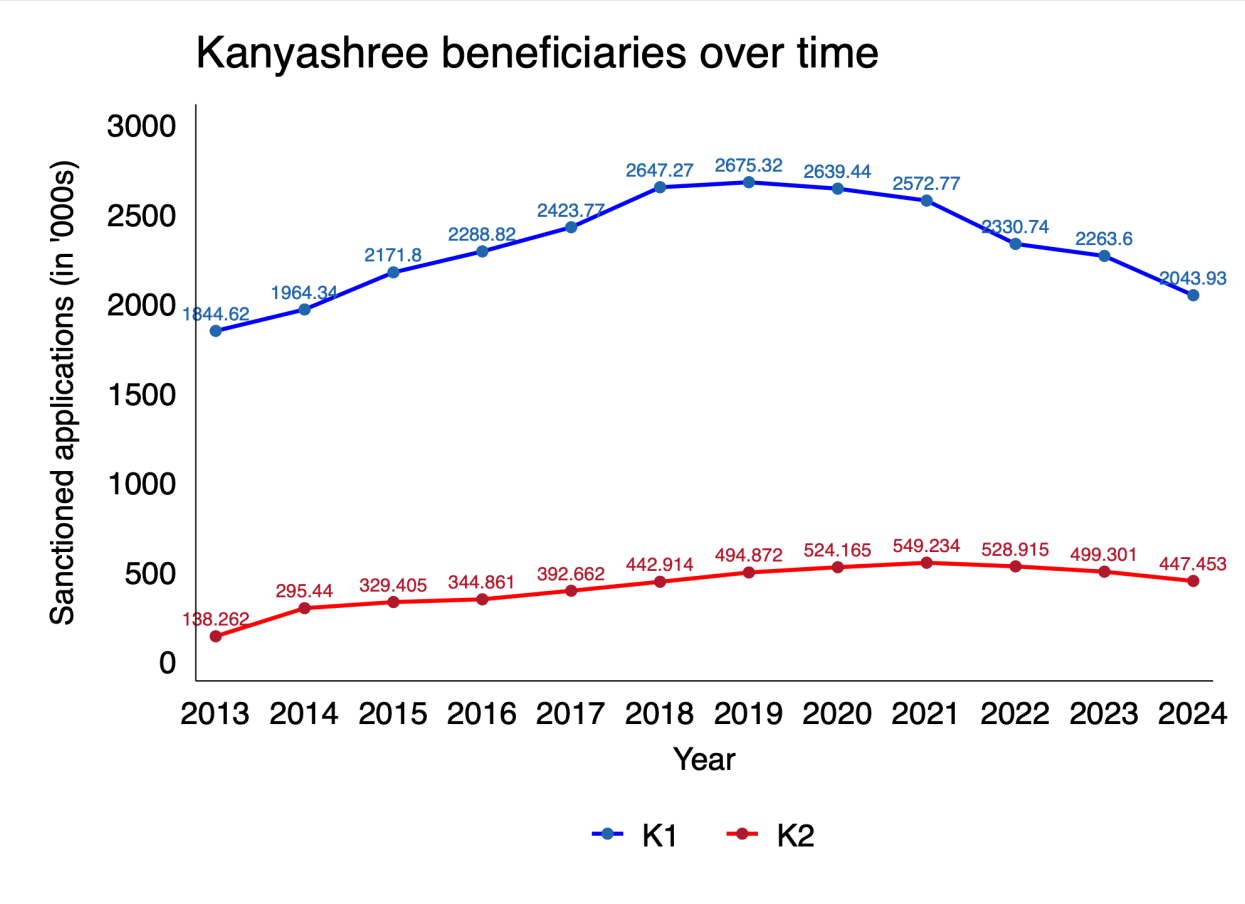


Figure 1: Number of Kanyashree Prakalpa beneficiaries (in thousands) between 2013-2024

Notes: The graph above uses data downloaded from the https://www.wbkanyashree.gov.in/kp_dashboard_report.php accessed on 7th December 2025. We show the number of sanctioned annual transfers (K1) and number of one-time transfers (K2) over time.

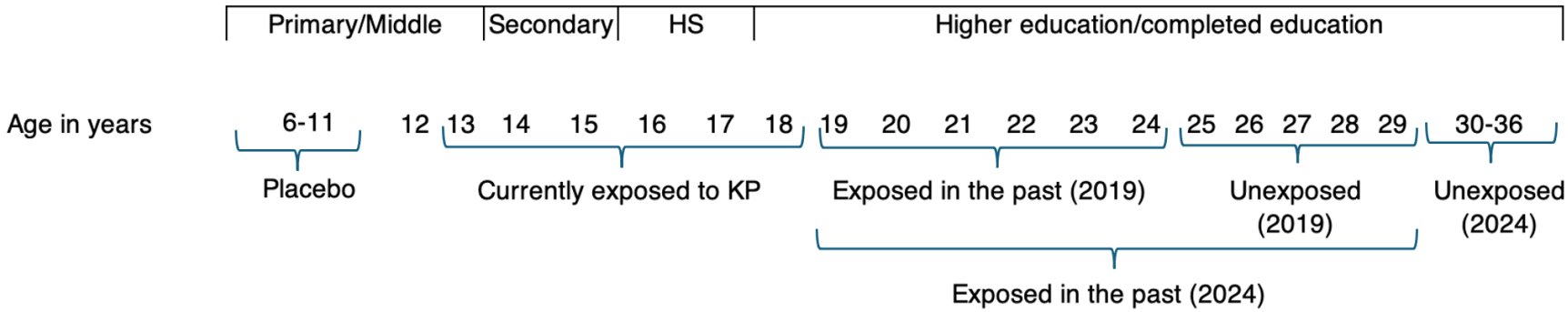


Figure 2: Measuring exposure to Kanyashree Prakalpa by age and survey year

Notes: The figure above explains our measurement of exposure to the Kanyashree Prakalpa program. 6-11 were never exposed, 13-18 are considered currently exposed, 19-24 were exposed in the past in 2019, and 19-29 were exposed in the past in 2024.

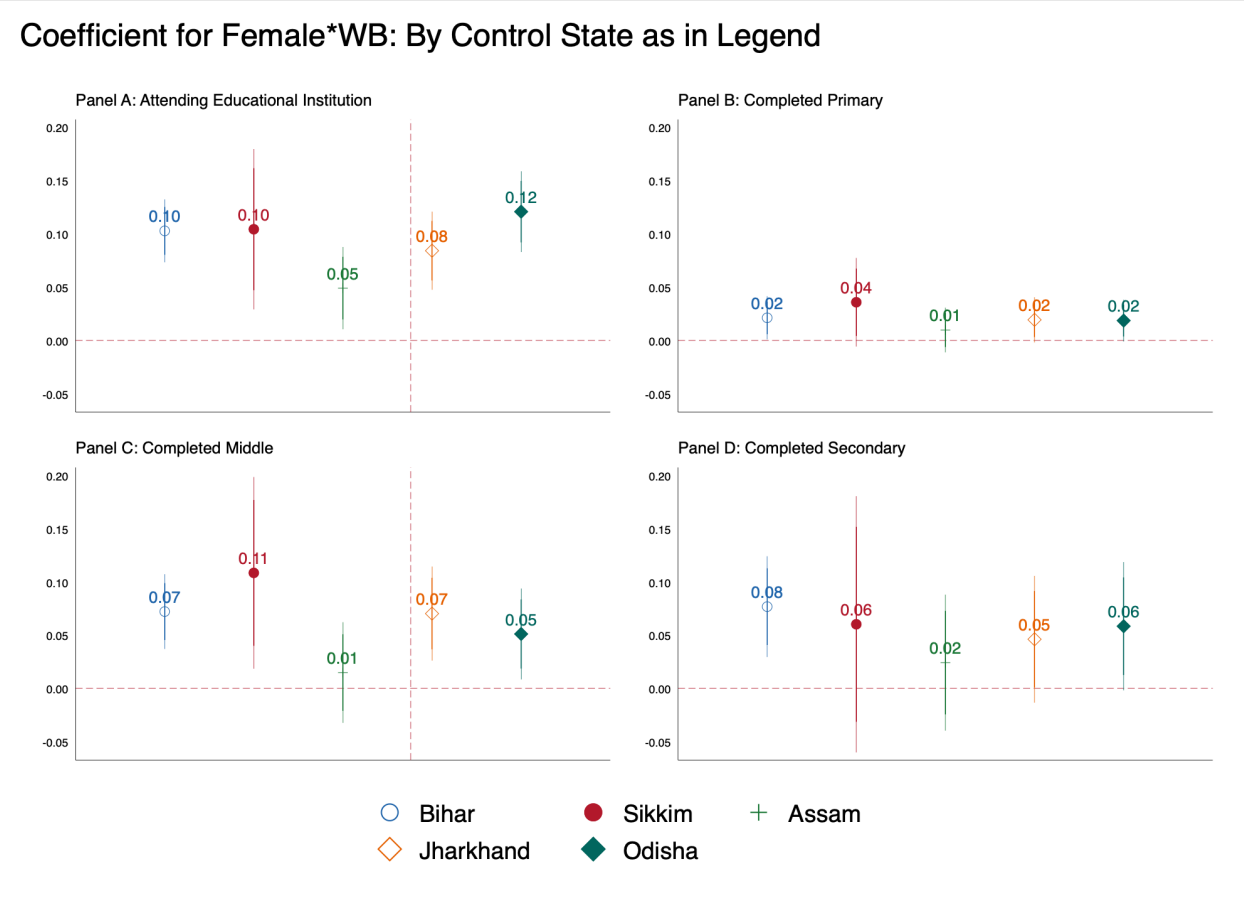


Figure 3: Robustness to alternative control groups

Note 1: Figure above show the DID estimate for the effect of KP on each outcome variable taking one neighboring state as control at a time. For example, exposure to KP increased the probability of completing middle school by 7.0 percentage points when using Bihar as a control state.
Note 2: 95% and 99% confidence intervals displayed.

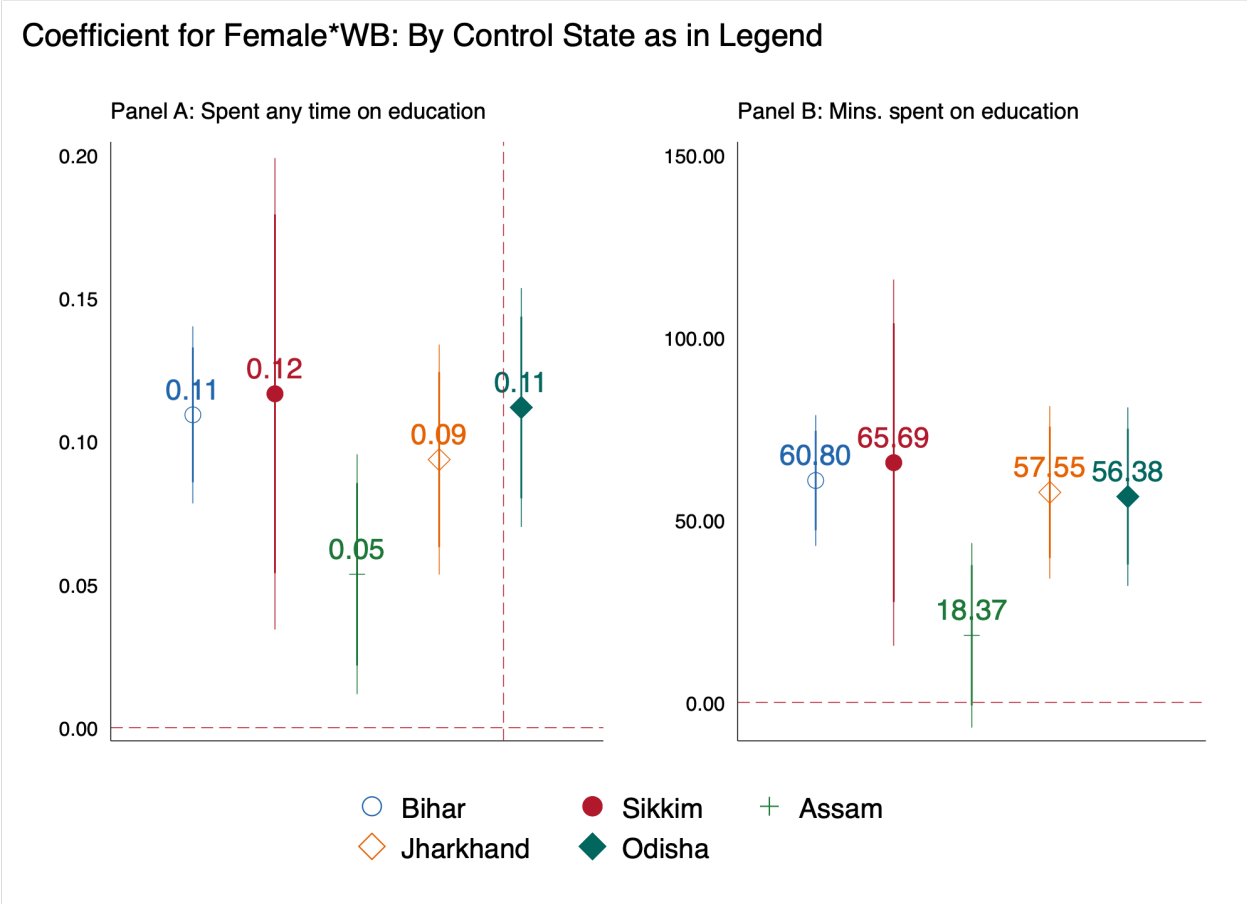


Figure 4: Robustness to alternative control groups

Note 1: Figure above show the DID estimate for the effect of KP on each outcome variable taking one neighboring state as control at a time. For example, exposure to KP increased time spent on educational activity in the last 24 hours by 60.8 minutes when using Bihar as a control state.
Note 2: 95% and 99% confidence intervals displayed.

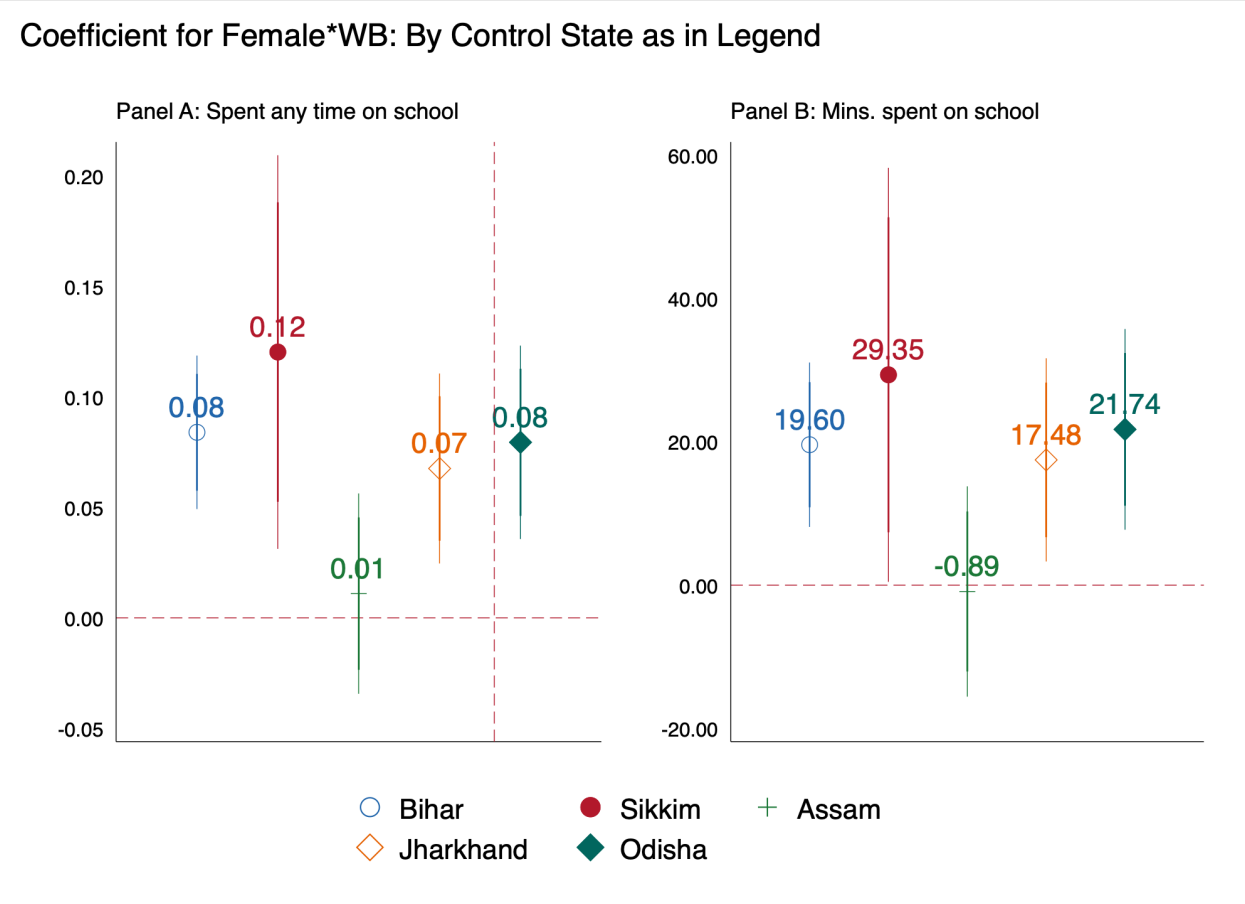


Figure 5: Robustness to alternative control groups

Note 1: Figure above show the DID estimate for the effect of KP on each outcome variable taking one neighboring state as control at a time. For example, exposure to KP increased the time spent in school by 19.6 minutes when using Bihar as a control state.
Note 2: 95% and 99% confidence intervals displayed.

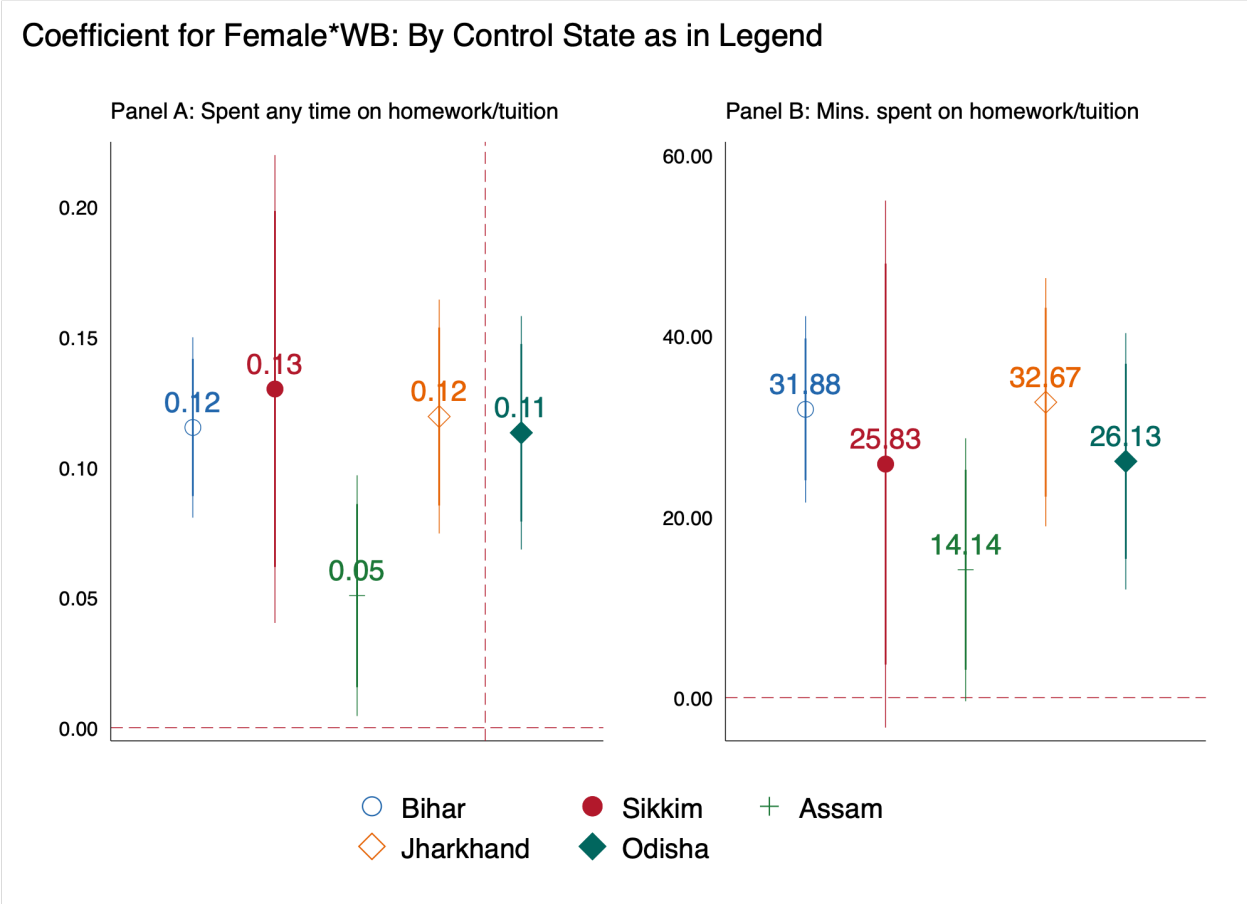


Figure 6: Robustness to alternative control groups

Note 1: Figure above show the DID estimate for the effect of KP on each outcome variable taking one neighboring state as control at a time. For example, exposure to KP increased the time spent on homework/tuition by 31.9 minutes when using Bihar as a control state.
Note 2: 95% and 99% confidence intervals displayed.

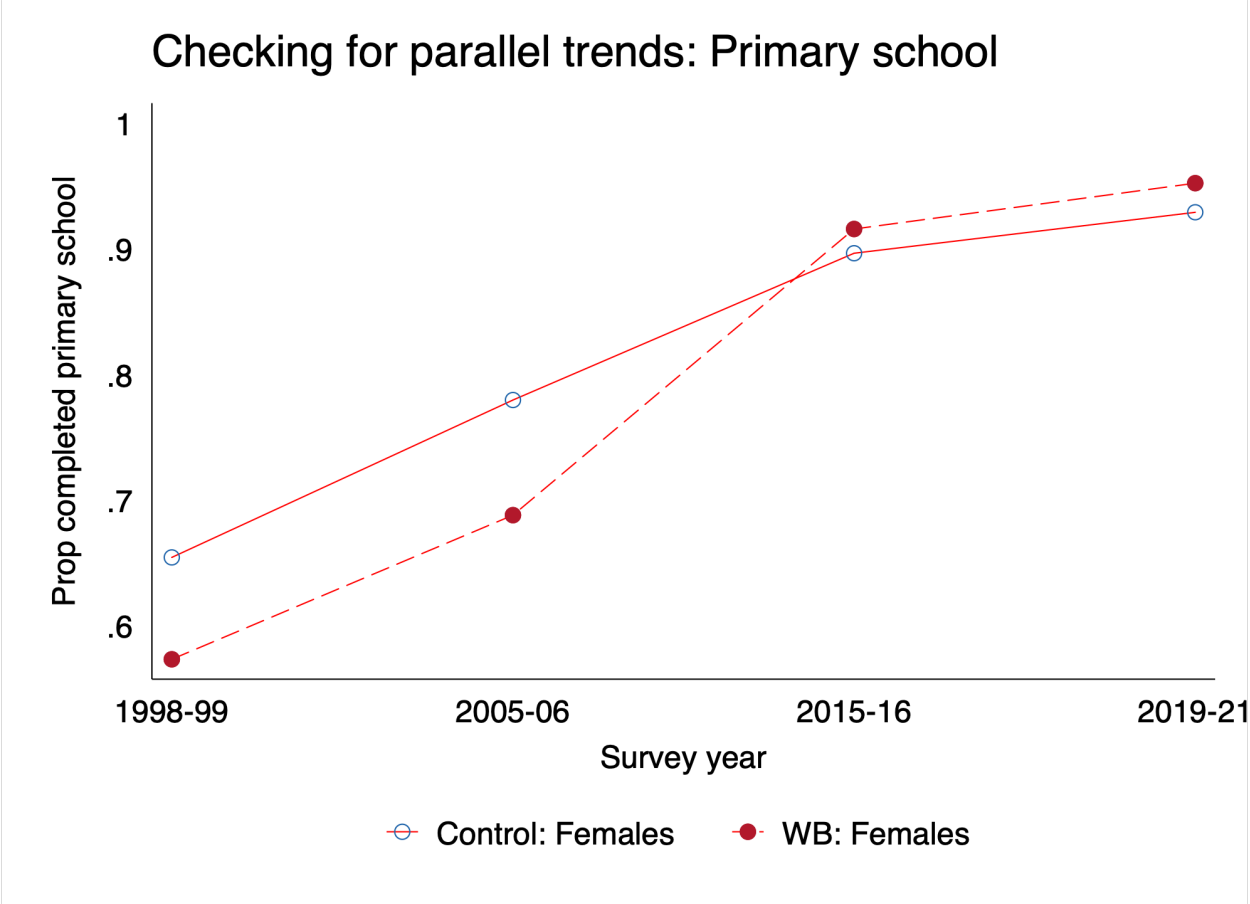


Figure 7: Trends in completion of primary school among 13-18 year old females

Notes: The graph above uses household roster data from the National Family Health Survey carried out in 1998-99, 2005-06, 2015-16, and 2019-21. We plot the proportion of females between the ages of 13-18 years of age who completed primary school education. We plot this for females residing in West Bengal and those residing in control (neighboring) states of Assam, Bihar, Jharkhand, Odisha, and Sikkim separately. Kanyashree Prakalpa began in 2013 which is between the survey years of 2005-06 and 2015-16.

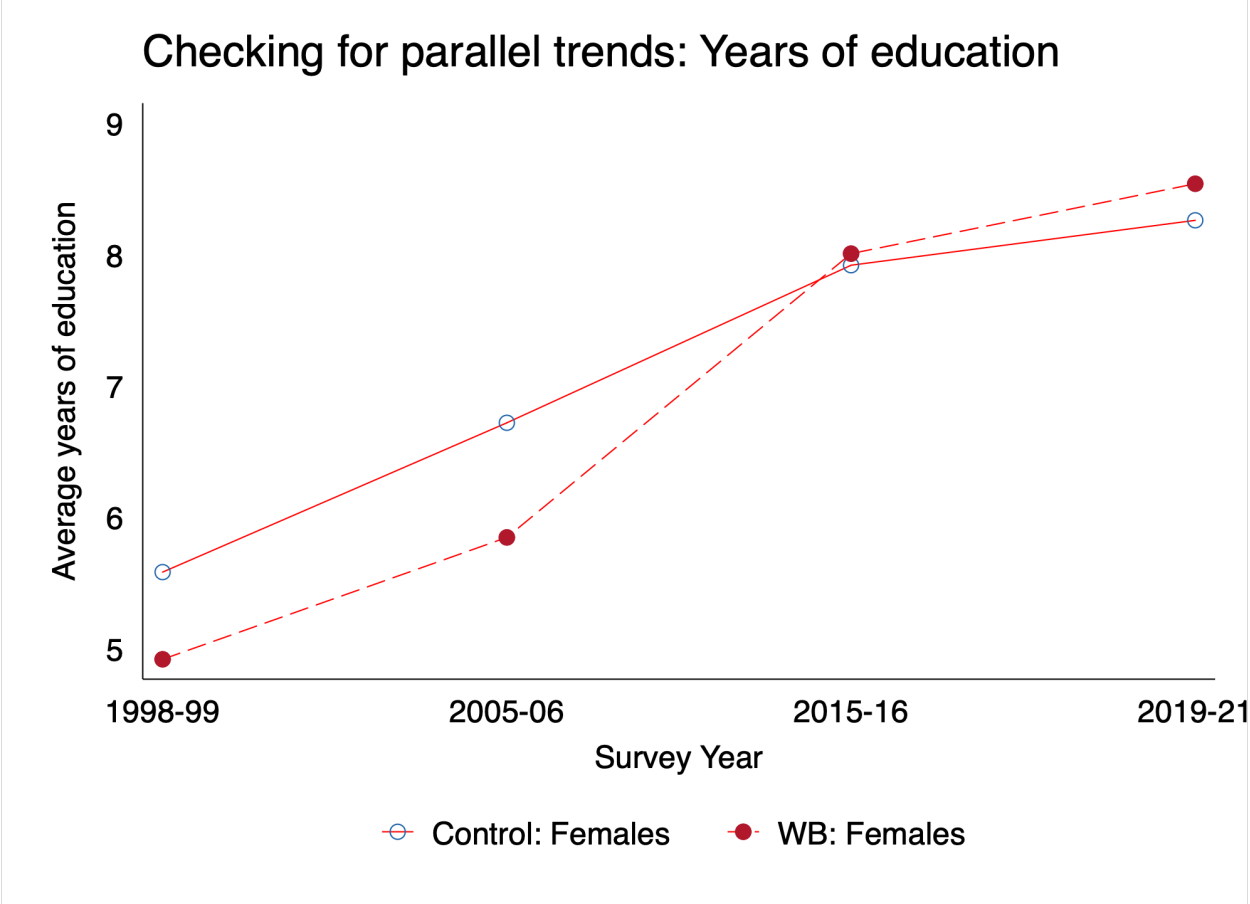


Figure 8: Trends in the Raw Data: Average years of education among 13-18 year old females

Notes: The graph above uses household roster data from the National Family Health Survey carried out in 1998-99, 2005-06, 2015-16, and 2019-21. We plot the average years of education among females between the ages of 13-18 years of age. We plot this for females residing in West Bengal and those residing in control (neighboring) states of Assam, Bihar, Jharkhand, Odisha, and Sikkim separately. Kanyashree Prakalpa began in 2013 which is between the survey years of 2005-06 and 2015-16.

Table 1: Summary statistics by state and gender for 13-18 year old children in 2019 and 2024

	Control states			West Bengal		
	Females	Males	Difference	Females	Males	Difference
Attending educational institution	0.835	0.838	-0.002	0.851	0.792	0.059***
Completed primary school	0.950	0.946	0.004	0.977	0.958	0.019***
Completed middle school	0.778	0.771	0.007	0.816	0.755	0.060***
Completed secondary school	0.513	0.494	0.019*	0.514	0.453	0.062***
Completed higher secondary school	0.226	0.201	0.025*	0.203	0.167	0.036*
Spent any time on educational activity	0.819	0.815	0.003	0.825	0.758	0.067***
Spent any time in school	0.614	0.618	-0.004	0.552	0.529	0.023
Spent any time on homework/tuition	0.744	0.744	-0.000	0.793	0.721	0.073***
Mins. spent on an educational activity	371.738	372.484	-0.746	401.813	372.124	29.689***
Mins. spent in school	190.932	191.343	-0.411	162.580	158.701	3.878
Mins. spent on homework/tuition	136.302	135.225	1.077	191.099	169.046	22.053***
Observations			17209			5960

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

NOTES: The table show means for outcome variables of interest for males and females in control states and West Bengal.
Difference in means and t-test of difference in means between males and females in control states and West Bengal are also presented.

Table 2: DID Estimates: Effect of Kanyashree on **Educational Outcomes** of 13-18 year olds

	Attending Educ Inst	Completed Primary	Completed Middle	Completed Secondary	Completed H. Secondary
Female	0.012*	0.006+	0.020***	0.037***	0.038***
	(0.005)	(0.003)	(0.006)	(0.008)	(0.010)
WB	-0.041***	0.012*	-0.021*	-0.044***	-0.029*
	(0.007)	(0.004)	(0.008)	(0.011)	(0.014)
Female X WB	0.095***	0.020**	0.060***	0.059***	0.031
	(0.010)	(0.006)	(0.012)	(0.016)	(0.019)
Mean of Y	0.832	0.953	0.777	0.497	0.204
N	23169	23169	23169	15614	8007
Included Ages	13-18	13-18	13-18	15-18	17-18

Standard errors in parentheses

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

NOTES: The outcome variable in the first column is a binary variable which takes value 1 for those who are currently attending an educational institution. Similarly, outcome variables in following columns are binary variables that take the value 1 for completing primary, middle, secondary, and higher secondary school. We present estimates from running difference-in-difference regressions using ordinary least squares. Individual and household controls included in all specifications include age, dummies for marital status, dummies for categories of monthly per capital expenditure, caste dummies, religion dummies, dummies for day of week interview was carried out, and a dummy was whether the interview was carried out on an unusual day.

Only those 15 (17) years old and older considered for the binary outcome variable of completing secondary (higher secondary).

Table 3: DID Estimates: Effect of Kanyashree on **Educational Time Use** of 13-18 year old girls

	Any educational activity	In school	Homework/tuition
	Panel A: Whether spent any time on activity in last 24 hours		
Female	0.005	-0.007	-0.001
	(0.003)	(0.005)	(0.005)
WB	-0.015**	-0.022***	0.014*
	(0.005)	(0.007)	(0.007)
Female X WB	0.020**	0.002	0.033***
	(0.007)	(0.009)	(0.009)
Mean of Y	0.810	0.596	0.747
N	23168	23168	23168
	Panel B: Mins spent on activity in last 24 hours		
Female	-0.874	-1.326	1.928
	(2.218)	(1.602)	(1.584)
WB	30.730***	-11.211***	38.992***
	(3.116)	(2.251)	(2.225)
Female X WB	12.085**	-4.012	13.080***
	(4.366)	(3.154)	(3.117)
Mean of Y	375.811	183.290	147.023
N	23168	23168	23168

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

NOTES: The outcome variables in Panel A are at the extensive margin. In first column of Panel A the outcome is a binary variable which takes value 1 for those who spent any time on an educational activity in the last 24 hours. Similarly, outcome variables in following columns are binary variables spending any time in the last 24 hours in school and on homework/tuition outside school. The outcome variables in Panel B are at the intensive margin. In first column of Panel B the outcome is the number of minutes spent on any educational activity in the last 24 hours. Similarly, outcome variables in the following columns are number of minutes spent in school and number of minutes spent on homework/tuition in the last 24 hours. We present estimates from running difference-in-difference regressions using ordinary least squares. Individual and household controls as listed in footnote of Table 2 included.

Table 4: DID Estimates: Effect of Kanyashree on **Non-educational Time Use** of 13-18 year olds

	Sleep and self care	Leisure	Unpaid work	Paid work
	Panel A: Whether spent any time on activity in last 24 hours			
Female	0.000	-0.012***	0.363***	-0.077***
	(.)	(0.003)	(0.006)	(0.004)
WB	0.000	-0.028***	-0.083***	0.004
	(.)	(0.004)	(0.009)	(0.005)
Female X WB	0.000	-0.017**	-0.088***	0.040***
	(.)	(0.005)	(0.012)	(0.007)
Mean of Y	1.000	0.969	0.324	0.090
N	23168	23168	23168	23168
	Panel B: Mins spent on activity in last 24 hours			
Female	2.119	-42.953***	76.434***	-36.431***
	(1.486)	(2.002)	(1.304)	(1.500)
WB	10.103***	-35.651***	-10.001***	7.270***
	(2.087)	(2.813)	(1.832)	(2.108)
Female X WB	3.941	1.608	-28.230***	9.751***
	(2.924)	(3.941)	(2.566)	(2.953)
Mean of Y	739.263	233.198	51.930	32.041
N	23168	23168	23168	23168

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The outcome variables in Panel A are at the extensive margin. In first column of Panel A the outcome is a binary variable which takes value 1 for those who spent any time sleeping and on self care in the last 24 hours. As the table shows, this is universal. Similarly, outcome variables in following columns are binary variables of spending any time in the last 24 hours on leisure, unpaid work, and paid work. The outcome variables in Panel B are at the intensive margin. In first column of Panel B the outcome is the number of minutes spent on sleep and self care in the last 24 hours. Similarly, outcome variables in the following columns are number of minutes spent on leisure, unpaid work, and paid work in the last 24 hours. We present estimates from running difference-in-difference regressions using ordinary least squares. Individual and household controls as listed in footnote of Table 2 included.

Table 5: **Placebo Test:** DID Estimates for Effect of Kanyashree on **Time Use of 6-11 year old girls**

	Any educational activity	In school	Homework/tuition
	Panel A: Whether spent any time on activity in last 24 hours		
Female	-0.003	-0.001	0.005
	(0.004)	(0.004)	(0.006)
WB	-0.001	-0.003	0.036***
	(0.006)	(0.007)	(0.010)
Female X WB	0.015+	0.010	0.002
	(0.008)	(0.009)	(0.014)
Mean of Y	0.963	0.738	0.903
N	10220	10220	10220
	Panel B: Mins spent on activity in last 24 hours		
Female	-0.764	0.443	-0.634
	(2.391)	(1.660)	(1.758)
WB	23.788***	-34.099***	50.725***
	(3.666)	(2.546)	(2.696)
Female X WB	6.349	0.592	5.785
	(5.150)	(3.576)	(3.787)
Mean of Y	400.289	219.440	137.683
N	10220	10220	10220

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

NOTES: We perform the same analysis as Table 3 for those who are between 6-11 years of age and hence unexposed to Kanyashree. The outcome variables in Panel A are at the extensive margin. In first column of Panel A the outcome is a binary variable which takes value 1 for those who spent any time on an educational activity in the last 24 hours. Similarly, outcome variables in following columns are binary variables spending any time in the last 24 hours in school and on homework/tuition outside school. The outcome variables in Panel B are at the intensive margin. In first column of Panel B the outcome is the number of minutes spent on any educational activity in the last 24 hours. Similarly, outcome variables in the following columns are number of minutes spent in school and number of minutes spent on homework/tuition in the last 24 hours. We present estimates from running difference-in-difference regressions using ordinary least squares. Individual and household controls as listed in footnote of Table 2 included.

Table 6: Testing for pre-trends: Educational Outcomes for **13-18 year old girls in WB in 2005-06** compared to control states

	Completed Primary	Years of Education	Completed Secondary
Female	-0.051***	-0.399***	0.016***
	(0.003)	(0.026)	(0.003)
WB	-0.121***	-1.111***	-0.051***
	(0.011)	(0.087)	(0.009)
Female X WB	0.021	0.124	-0.020
	(0.015)	(0.123)	(0.012)
Mean of Y	0.802	6.883	0.077
N	63935	63935	41621
Included Ages	13-18	13-18	15-18

Standard errors in parentheses

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

NOTES: We perform the same analysis as Table 2 for those between 13-18 using data from household rosters in the National Family Health Survey (NFHS) carried out in 2005-06 before the inception of the Kanyashree Scheme in West Bengal. NFHS categorizes educational attainment as having completed primary school, secondary school and higher. Binary outcome variables in columns (1) and (3) take value 1 for those who completed primary school and secondary school. The outcome variable in column (2) in the number of years of education undertaken by an individual. We present estimates from running difference-in-difference regressions using ordinary least squares. Household controls of caste dummies, religion dummies, and binary variable for below poverty line status of an individual are included.

Table 7: **Long-term Effects on School Completion:** DID Estimates for Effect of Kanyashree on **Educational Outcomes of 19-29 year old women**

	Completed Primary	Completed Middle	Completed Secondary	Completed H. Secondary	Completed College
Female	-0.029***	-0.009	0.038***	0.054***	0.042***
	(0.004)	(0.005)	(0.006)	(0.006)	(0.005)
WB	-0.001	-0.018*	-0.002	0.000	-0.034***
	(0.006)	(0.007)	(0.008)	(0.008)	(0.007)
Female X WB	0.086***	0.109***	0.097***	0.059***	0.055***
	(0.008)	(0.009)	(0.011)	(0.010)	(0.009)
Mean of Y	0.875	0.761	0.572	0.401	0.182
N	35170	35170	35170	35170	27386
Included Ages	19-29	19-29	19-29	19-29	21-29

Standard errors in parentheses

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

19-24 year old women in 2019 and 19-29 year old women in 2024 included.

NOTES: Outcome variables in each columns are binary variables that take the value 1 for completing primary, middle, secondary, higher secondary school, and college. We present estimates from running difference-in-difference regressions using ordinary least squares. Individual and household controls included in all specifications include age, dummies for marital status, dummies for categories of monthly per capital expenditure, caste dummies, religion dummies, dummies for day of week interview was carried out, and a dummy was whether the interview was carried out on an unusual day.

Only those 21 years old and above considered for the binary outcome variable of completing college (undergrad).

Table 8: **Long-term Effects on Time Use:** DID Estimates for Effect of Kanyashree on Educational Time Investments of 19-29 year olds

	Any educational activity	In school	Homework/tuition
	Panel A: Whether spent any time on activity in last 24 hours		
Female	-0.001	-0.013***	0.000
	(0.003)	(0.003)	(0.003)
WB	-0.024***	-0.017***	-0.003
	(0.004)	(0.004)	(0.004)
Female X WB	0.023***	0.014**	0.012*
	(0.005)	(0.005)	(0.005)
Mean of Y	0.204	0.120	0.149
N	35170	35170	35170
	Panel B: Mins spent on activity in last 24 hours		
Female	-7.333***	-3.550***	-1.533+
	(1.385)	(0.922)	(0.827)
WB	0.276	-3.011*	2.214*
	(1.838)	(1.223)	(1.097)
Female X WB	8.529***	2.794+	3.800**
	(2.434)	(1.620)	(1.453)
Mean of Y	81.891	33.629	30.272
N	35170	35170	35170

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

19-24 year olds in 2019 and 19-29 year olds in 2024 included.

NOTES: The outcome variables in Panel A are at the extensive margin. In first column of Panel A the outcome is a binary variable which takes value 1 for those who spent any time on an educational activity in the last 24 hours. Similarly, outcome variables in following columns are binary variables spending any time in the last 24 hours in school and on homework/tuition outside school. The outcome variables in Panel B are at the intensive margin. In first column of Panel B the outcome is the number of minutes spent on any educational activity in the last 24 hours. Similarly, outcome variables in the following columns are number of minutes spent in school and number of minutes spent on homework/tuition in the last 24 hours. We present estimates from running difference-in-difference regressions using ordinary least squares. Individual and household controls as listed in footnote of Table 2 included.