IMPACT OF FEMALE SECONDARY SCHOOL STIPEND PROGRAM ON ENROLLMENT, MARRIAGE and FERTILITY OUTCOMES IN RURAL PUNJAB

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ABSTRACT

We study the effects of Female Secondary School Stipend Program (FSSSP), a component of Punjab Education Sector Reform Program (PERSP) on school enrollment, middle and high school completion, marriage and fertility outcomes for eligible girls in rural areas of stipend recipient districts. The relevant control groups in this study include elder sisters and/or cousins in stipend districts, girls of similar age, their elder sisters and/or cousins in non-stipend districts. This paper uses triple difference-in-difference analyses to show the effects of program after ten years of implementation. Girls exposed to the program were more likely to remain in school if we look at a short (2003-2006) or medium (2003-2009) span of time, but were less likely to complete middle or high school. There is suggestive evidence that girls exposed to the program were engaged in early marriages and subsequently are younger at the birth of first child. These findings provide critical information for policy makers in assessing efficiency and effectiveness of such developmental programs.

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1. Introduction

Increasing human capital investment in our youth is considered to be one of the most effective ways of promoting growth and alleviating poverty in developing countries (UNESCO 2012). Education can help provide opportunities to deprived and marginalized classes of society, transforming them into active players in the economic growth process. At the Rio Conference held in Brazil in 2012, the United Nations declared the education gap to be a key difference between developed and developing worlds. An important concern prevailing in South Asian countries regards gender disparity in education, making achievement of Education for All (EFA) and the Millennium Development Goals (MDGs) for gender equality and women's empowerment critical.

Policy makers in Pakistan have often set targets regarding education; however this sector faces numerous difficulties in terms of policy implementation. Following passage of 18th amendment to the Constitution of Pakistan (pertaining to the decentralization of governmental powers), responsibility for public education has been devolved from the federal to provincial level. However, only around 2 percent of GDP is spent on this sector which is considered to be one of the lowest levels among developing countries (World Bank, 2011). The predominance of a patriarchal social structure in Pakistani culture is also an obstacle in achieving the Millennium Development Goals (MDGs) especially in rural areas where female labour force participation rate is as low as 19.3 percent (Pakistan Bureau of Statistics, 2013). 60.5 percent of the recorded female labour force measured by government statistics are "contributing family workers," in other words, unpaid family labour. Moreover, Pakistan stands second to last in the world on the Global Gender Gap Index. (Global Gender Gap Report, 2014)

The focus of current study is Punjab, the largest and wealthiest province of Pakistan, home to about 60 percent of country's population, with higher literacy and enrollment rates and lower gender discrimination as compared to other provinces. A comparison of male and female literacy rates in Punjab shows improvement in both over time (2004-2012) however, the gender gap has persisted (see Figure 1). Moreover, analyzing female gross enrollment rates at different schooling levels indicate that girls are more likely to drop out after completing the primary grades, but those who continue to middle school mostly continue on to secondary school and complete their secondary schooling locally known as a Matriculation degree (see Figure 2). Male middle school gross enrollment rates have remained fairly stagnant while female enrollment experienced a substantial increase from year 2006-2008 but decreased the following year and then picked again from 2009-2012 (see Figure 3). Matric or secondary gross enrollment rates show a greater increase in female participation though male enrollment levels are persistently higher (see Figure 4). The gap between male and female matric enrollments remain, however it is narrowing down due to a rise in girls' middle school enrollments over time (Habib, 2013). Apart from gender disparities at different academic levels, Punjab has faced a number of problems in terms of insufficient allocation of resources to this sector, poor performance of schooling system in terms of quality, access, governance and inadequate management (Chaudhury and Parajuli, 2006).

To address these issues, a reform program was initiated by the Government of Punjab in 2003, called Punjab Education Sector Reform Program (PESRP). It was financed through World Bank lending and emphasized improvements in quality, access and governance of education system.

The Female Secondary School Stipend Program (FSSSP) was introduced as a component of PESRP in 2003, structured to improve female enrollments in public secondary schools by

addressing demand-side constraints of affordability and distance. The emphasis on public secondary schools highlighted on the initial public focus of this reform agenda. 15 out of Punjab's 34 districts with literacy rates below 40 percent according to Population Census, 1998 were selected (see Table 1). Girls in grades 6 to 8 were awarded a cash transfer of PKR 600 every three months if they met the criterion of 80 percent school attendance. Since distance is also considered a significant demand-side constraint, parents under this program were encouraged to spend on transportation to schools. The stipend funds were transferred directly to each girl's household via postal money order from Education District Office (EDO), which has a special account at Provincial Program Monitoring and Implementation Unit (PMIU) of the Education Department. In the third quarter of 2005, this program was further extended to cover secondary schooling, (i.e. grades 8-10) and there was also a raise in the amount of stipend provided.

Punjab Education Sector Reform Program (PESRP) comprises of other components apart from distributing stipend to girl students, for example provision of free textbooks, reward program for schools improving test scores, teacher training, hiring on fixed contracts for teachers, school councils, improvements in auditing, increased monitoring of schools etc.

The main focus of this study is to assess the impact of the Female Secondary School Stipend Program (FSSSP) of the Punjab Education Sector Reform Program (PESRP) on middle and high school enrollment and completion for eligible girls as compared to the non-eligible girls in both the stipend and non-stipend districts. It also tries to assess impact of stipend program on non-schooling outcomes related to marriage and fertility of stipend eligible girls as opposed to the non-eligible girls in both the stipend and non-stipend districts

2. Literature Review

Conditional cash transfer (CCT) programs have become a popular tool in not just facilitating education but also in attempting to change the mindsets of local population regarding positive externalities attached to them. These programs intend to address alleviation of short-term poverty and reduce intergenerational transmission of poverty. Gender targeted programs have come to be preferred over means-tested CCTs to attenuate intra-household disparities in human capital investment. A substantial increase has been experienced in the number of CCT programs and a parallel rise in impact evaluations assessing their results in the past decade. These programs vary in scale, conditionalities, transfer size, eligibility and implementation features (see Table 2). For example, the average household transfer is about 3 percent of household expenditure in Pakistan while it is about 20 percent in Mexico after accounting for differences in purchasing power among countries (Fiszbein and Schady, 2009). A recent review of impact evaluations of safety net programs show that all CCTs evaluated increased consumption of participating households and 87 percent increased school enrollment and attendance of their children (World Bank, 2010). The evidence is thin regarding indirect effects of such programs on siblings, peers and on outcomes such as marriage and fertility having long-term implications on the welfare of recipients. Moreover, some countries also complement supply-side interventions with these programs in form of provision of school grants, teacher bonuses, textbook provision etc. to address potential educational resource constraints (Saavedra and Garcia, 2012).

The wave of CCTs began after a large-scale anti-poverty program in Mexico, called Oportunidades (formerly known as Progresa) introduced in 1997 with the objective of providing monetary transfers to households conditional on children's regular attendance at schools and health centers. A comparison of girls and boys in the absence of intervention provides a rationale

for greater monetary transfers to girls at secondary school level. This is due to the fact that even though girls were progressing better than boys in the primary grades, they later dropped out and did not reenter school for higher grades. Evaluations based on randomized design have shown positive impacts on short-term outcomes in form of higher school enrollment, less grade repetition and lower dropout rates. Primary school impacts of program are similar by gender; however, result in a higher enrollment for boys in second and third years of secondary school as compared to girls (Behrman, Sengupta and Todd, 2002).

Osorio and Bertrand (2008) carried out a similar randomized experiment in Colombia at the child level allowing for variation of enrollments within schools, households and social networks. An instrumental variable approach was also adopted in this study to estimate externalities generated by treatment within families and social networks. Negative spillover effects of the program were found on the education of children within a household who were registered but not selected for treatment, and this was especially strong for girls. In contrast, strong positive externalities were generated across peer groups as a result of the treatment provided.

Several studies have on the other hand, particularly highlighted effects of gender-targeted CCTs on school enrollment and attendance to address disparities in human capital investments. For example, the Female Stipend Program (FSP) of Bangladesh initiated in 1994, aimed to improve rural enrollment at secondary school level, labour force participation and wages exclusively for females. Quasi experimental methods of difference in difference, triple difference and regression discontinuity resulted in showing an increase of school attainment by one year, likelihood of female labour force participation by 4 percent and earning 14 percent higher wages than their male counterparts (Shamsuddin, 2013). Another important study applied similar empirical strategy of triple difference to estimate impact on girls' enrollment eligible for FSP compared to

boys in 1994 after gender gap in enrollment growth among younger, stipend non-eligible children had been differenced out. Household fixed effects were incorporated to compare eligible recipients to their non-targeted siblings. There was no evidence that program eligible girls' enrollment increased with respect to male siblings of similar age or younger siblings not eligible for the program (Heath and Mobarak, 2012).

Burde and Linden (2009) carried out a randomized evaluation in Afghanistan to assess the causal impact of distance on school enrollment. The results showed that enrollment fell by 16 percent points for every mile that children travelled to school. Girls were concluded to be more sensitive than boys to a change in distance to the nearest school. Moreover, UNESCO (2012) has also attempted to analyze impact of distance to school on girl's primary and secondary level of education especially in Malawi, Zambia, Uganda and Nigeria. The study concludes that distance to school adversely impacts both sexes but it becomes a serious barrier in girl's education especially at lower secondary level.

Another study in Indian state of Bihar, attempted to reduce gender gap in secondary school enrollment by facilitating girls with a bicycle who planned to continue their secondary education to improve access to school. Results from the triple difference approach with boys and neighbors as control groups, concluded that cohort exposed to Cycle program improved girl's enrollment by 32 percent points and interestingly this improvement was only experienced in villages that were 3-4 km far from the school (Muralidharan and Prakash, 2014). Some studies have also highlighted on the safety and cultural norms that might be a bigger concern than distance to school per se and have suggested appropriate chaperoning of young women (Chitrakar, 2009).

In an attempt to study effects of conditional and unconditional cash transfers on the educational and marriage outcomes, a randomized controlled trail was carried out in Malawi offering cash transfers to 88 out of 176 enumeration areas (EAs) conditional on maintaining 80 percent school attendance while the other group received monthly unconditional cash transfers. Intent-to-treat effects on schooling outcomes in each arm were estimated by using a simple reduced form linear probability model. Moreover, effects on marriage and fertility were estimated by using a panel regression with individual fixed effects. Overall, the CCT arm experienced large gain in enrollment of around 43 percent while the incidence of marriage and pregnancy were reduced by 34 percent and 48 percent in the UCT arm. Hence the study proposed a CCT program designed for young children that switched to an income support program once the girls attained a certain age (or grade) to minimize the tradeoff between human capital formation, delaying marriage and reducing fertility (Baird, McIntosh and Ozler, 2010).

Moving on to the literature on Pakistan, there have already been a number of studies evaluating effectiveness of the Female Secondary School Stipend Program (FSSSP), a component of the Punjab Education Sector Reform Program (PESRP). An analysis at the program's early stage, Chaudry and Parajuli (2008) performed a short-term impact evaluation on school enrollment by using combination of triple differencing (DDD) and regression discontinuity (RDD) empirical strategies. The results suggested that the stipend districts experienced a larger change in girls' school enrollment and the overall average impact between 2003 and 2005 was an increase of 9 percent in female enrollment. A World Bank study by Hasan (2010) on the FSSSP utilized a difference-in-difference empirical strategy by using longitudinal data from schools in treated and untreated districts. Enrollment levels of girls' in grades 6-8 increased substantially but those for the similarly aged male siblings also appeared to improve. This may be due to more resources

being available to stipend recipient households, or that boys were sent to school in order to accompany girls as a result of the conservative social and cultural environment prevailing in Punjab. Moreover, gains of the program were leaning towards urban schools. The amount of stipend was intended to cover transport costs but it may not be the right metric of assessment if the issue is ability to attend (access) i.e. attaining permission or completion of primary grades rather than ability to get to schools (transport) in rural areas.

The World Bank's Independent Evaluation Group (2011) performed a longer- term evaluation of the Female Secondary School Stipend Program (FSSSP) by again using quasi-experimental techniques of difference-in-difference (comparing change between baseline and follow-up, across treatment and control groups) and the regression discontinuity approach (using cutoff literacy rate for district eligibility) to address the selection bias induced by nonrandom placement of the program. There was a significant increase witnessed in girls' secondary (grades 6-8) enrollment due to a reduction in dropout rates after completion of primary school (between 2003-04 and 2009-10) ranging from 11-32 percent. Girls in eligible stipend districts were more likely to complete middle school by 3-6 percent points. Younger girls who were also exposed to a high-school stipend post 2005, benefitted from a greater likelihood of completing at least a high school degree. An interesting finding was that labour force participation decreased for eligible girls in stipend districts, by around 4-5 percent points. This was largely driven by a drop in unpaid family work due to improved middle and high school participation. Eligible girls (age 15-19 years) in stipend districts also delayed marriage by 1.4 years and had 0.3 fewer children than girls in non-stipend districts. No indirect effects on schooling of male siblings in similar age bracket were observed; however, the study indicated that there was a high rate of enrollment of boys in private primary schools. These schools are generally of higher quality than public

schools, which might result in a potential widening of the learning gap between boys and stipend eligible girls enrolled in public schools.

Similarly, the Urban Fellowship Program was implemented in Quetta, around two decades ago to stimulate girls' schooling through the creation of private girls' schools. However, this program also resulted in increased boys' compared to girls' school enrollment as parents would not send their daughters to school without educating their sons as well, acting as complementary goods (Kim, Alderman and Orazem, 1999).

In our current study, we have information on an additional arguably better control group to measure the impact of the program on stipend-eligible girls as compared to earlier studies carried out in Pakistan; that is we have collected information on their older sisters and/or cousins, by their age not eligible for the stipend, for impact on school enrollment, completion, marriage and fertility outcomes in both stipend and non-stipend districts.

In addition to information on enrollment, completed years of schooling, marital status, and fertility, our data set has collected information on a larger number of outcomes for girls, including dowry, consanguinity with husband, and husband's wealth.

3. Empirical Strategy

This study makes an attempt to assess the impact of Female Secondary School Stipend Program (FSSSP) on school enrollment, middle and high school completion, marriage and fertility outcomes of eligible girls compared to a number of different control groups relative to earlier studies. A triple difference in difference strategy is used to estimate whether there was a discrete jump in the above mentioned outcomes of girls' eligible for FSSSP compared to:

- their older sisters and/or cousins (not stipend eligible because of age)
- girls, their older sisters and/or cousins in non-stipend districts (not stipend eligible because of program placement)

In some specifications, we will add household fixed effects in our panel set of regressions to control for the combined impact of all factors that are common to all children in the same household and are fixed over time. Results from fixed effects regressions are stronger in the sense that there are fewer chances of having an omitted variable bias and household fixed effects can help to control better for unobserved household characteristics like preferences related to education, value placed on education, location with respect to schools, distance, parental education, assets, income etc. However, these fixed effects will not be able to control for differences within household in how parents make decisions regarding female compared to male children. This can be taken care of by using other females as a control group for girls' enrollment as attempted in the current study.

3.1: Identifying effects of FSSSP on school enrollment

We have used level of education achieved by each child to create a panel of year-by-year enrollment status for each child from age 6 up to 18 years of age (or their age at the time of the survey, whichever is lower).

Following the concept mentioned above, we will be carrying out three different sets of regressions for each dependent variable in this study:

3.1.1: Linear probability regressions for school enrollment (without household FE)

A linear probability regression is performed for impact on school enrollment. The regression equation for school enrollment of girl i, in village v, belonging to family f, at time period t, can hence be constructed in the following manner:

$$Enroll_{ivft} = \beta_0 + \lambda_t + \beta_1 Stipend_v + \beta_2 AgeEligible_{ivft} + \beta_3 InSchool6Years_{ivft} + \gamma_1 Stipend_v * AgeEligible_{ivft} + \gamma_2 InSchool6Years_{ivft} * AgeEligible_{ivft} + \gamma_3 InSchool6Years_{ivft} * Stipend_v + \gamma_4 Stipend_v * AgeEligible_{ivft} * Age_{ivft} + \mathbf{\gamma_5 InSchool6Years_{ivft} * AgeEligible_{ivft} * Stipend_v} + \delta_1 Stipend_v * Year + \sum_{a=6}^{a=18} Age + \mu_1 Officialrelation + \varepsilon_{ivft} \quad (1)$$

The dependent variable, Enroll, is a dummy variable for the simple enrollment of girls age 6-18 years. This particular age bracket was selected as school-starting age in Pakistan on average ranges between 5 and 6 years, while the upper threshold of 18 was chosen to consider for late entry into schools and grade repetitions, which happens quite frequently (Ahmed and Amjad, 2013).

The dependent variable is further divided into long-term, medium-term and short-term enrollment levels for girls based on the time period elapsed since the initiation of stipend

program in 2003. Short-term enrollment tries to capture the impact of FSSSP up until 2006, medium-term enrollment up until 2009 and long-term enrollment attempts to capture the impact of the program up to early 2013 (when our household survey was conducted). These levels of enrollment are assessed in specifications with and without district dummy variables in the full sample, and in cases limiting the sample to districts that were closer to the 40 percent literacy cut-off used to identify stipend-receiving districts that are more similar to each other.[1] This will be further elaborated in the Data section.

On the right hand side of the regressions, we have included a number of controls. The variable Stipend is a dummy variable with value of 1 for belonging to a stipend eligible district and zero, otherwise. AgeEligible, on the other hand is a dummy for meeting age eligibility criteria of 14 years or younger in 2003, since the stipend was initially offered to girls in grades 6 - 8. InSchool6Years is again a dummy variable for completing primary education, as the stipend was provided from sixth grade onwards. Individual age variables (6-18 years) are also added to control for differential age patterns in enrollment. Furthermore, interaction with age variable was also added to estimate how the effects of age eligible girls in stipend districts vary with age. The coefficient of interest, γ_5, estimates impact of female secondary stipend program on enrollment of eligible girls who completed primary school (in order to be eligible for stipend) compared to older girls, girls of similar age and older girls in non-stipend districts without controlling for household fixed effects. The political variable, Officialrelation is a dummy for households related to village officials to account for oversampling in the survey design. The data and survey design will be elaborated in the next section.

[1] This arrangement resembles a regression discontinuity design but there are few districts in the dataset to carry out the design credibly.

3.1.2: Fixed effect regressions for school enrollment, with stipend and non-stipend districts

The regression equation for school enrollment of girl i, in village v, belonging to family f, at time period t, can hence be constructed in the following manner:

$$Enroll_{ivft} = \beta_0 + \delta_f + \lambda_t + \beta_1 Stipend_v * Year + \beta_2 AgeEligible_{ivft} + \beta_3 InSchool6Years_{ivft} + \gamma_1 Stipend_v * AgeEligible_{ivft} + \gamma_2 InSchool6Years_{ivft} * AgeEligible_{ivft} + \gamma_3 InSchool6Years_{ivft} * Stipend_v + \gamma_4 Stipend_v * AgeEligible_{ivft} * Age_{ivft} + \mathbf{\gamma_5 InSchool6Years_{ivft} * AgeEligible_{ivft} * Stipend_v} + \sum_{a=6}^{a=18} Age + \varepsilon_{ivft} \quad (2)$$

The dependent variable, $Enroll_{ivft,}$ is the dummy for simple enrollment of girls' age 6-18 years. Again, different sets of regressions are carried out for short, medium and long-term periods since the program began, with and without district dummies for the whole sample, and on the limited sample with similar and very similar districts.

Here, δ_f represents household fixed effects. Time fixed effects are represented by $\lambda_{t.}$ With household fixed effects, there will be no variation observed in the stipend dummy variable as fixed effects estimate coefficients based on variation within the household. Each household resides either in a stipend or non-stipend district throughout, hence no variation resulting in absence of an estimate. Since the stipend dummy variable and household fixed effects cannot be used in the same regression, we have interacted stipend with year fixed effects to control for differential enrollment patterns in stipend districts for each year. Similarly, no variation observed in the Officialrelation dummy variable and hence, it is dropped out from fixed effects regressions. The coefficient of interest, $\mathbf{\gamma_5}$**,** is a triple interaction difference estimate of Female Secondary School Stipend Program on eligible girls compared to their older sisters and/or

cousins in stipend districts, similar aged girls, their older sisters and/or cousins in non-stipend districts by controlling for household fixed effects.

3.1.3: Fixed effect regressions for school enrollment with stipend districts only

The regression equation for school enrollment of girl i, in stipend village sv, belonging to family f, at time period t, can be constructed in the following manner:

$$Enroll_{isvft} = \beta_0 + \delta_f + \lambda_t + \beta_1 AgeEligible_{isvft} + \beta_2 InSchool6Years_{isvft} +$$

$$\boldsymbol{\gamma_1 InSchool6Years_{isvft} * AgeEligible_{isvft}} + \sum_{a=6}^{a=18} Age + \varepsilon_{isvft} \quad (3)$$

The dependent variable, $Enroll_{isvf}$, here is just focusing on short-term, medium-term and long-term enrollment of girls age 6-18 years for all, similar and very similar stipend districts. The stipend variable and all interactions with stipend variable have been omitted for this specific regression. The coefficient of interest $\boldsymbol{\gamma_1}$**,** is a double interaction difference estimate of program on enrollment of eligible girls compared to their older sisters and/or cousins in stipend districts while controlling for household fixed effects.

A set of linear probability and fixed effects regressions were also carried out to assess total impact of the program on long, medium and short-term enrollment without prerequisite of primary education i.e. by dropping all InSchool6years terms and estimating double interaction difference: *AgeEligible x Stipend*. Different levels of enrollment were regressed upon stipend dummy variable, age eligibility criterion, double interaction: *AgeEligible x Stipend* and triple interaction: *AgeEligible x Stipend x Age*, along with year dummies/FE, Stipend interacted with year dummies/FE, Age dummies/ FE and district dummies for both LPM and fixed effects regressions.

3.2: Identifying effects of FSSSP on completion of middle and high school

Three set of regressions will be carried out for each dependent variable of middle and high school completion following the same concept used in school enrollment regressions for girls.

3.2.1: Linear probability regressions for middle and high school completion

A linear probability regression is performed for the impact on completion of middle and high school in the following manner:

$$\text{Completion}_{ivf} = \beta_0 + \beta_1 \text{Age}_{ivf} + \beta_2 \text{Age}_{ivf}^2 + \beta_3 \text{Stipend}_v + \gamma_1 \text{AgeEligible}_{ivf} + \gamma_2 \text{AgeEligible}_{ivf} * \text{Stipend}_v + \gamma_3 \text{InSchool6Years}_{ivf} + \gamma_4 \text{InSchool6Years}_{ivf} * \text{AgeEligible}_{ivf} + \gamma_5 \text{InSchool6 Years}_{ivf} * \text{Stipend}_v + \boldsymbol{\gamma_6 \text{InSchool6Years}_{ivf} * \text{AgeEligible}_{ivf} * \text{Stipend}_v} + \mu_1 \text{Officialrelation} + \varepsilon_{ivf} \quad (4)$$

The dependent variable, Completion, is a dummy variable and stands for probability of completing middle school (grade 9 or above) and high school (grade 11 or above) by girls for regression specifications with and without district dummies for the full sample, and restricted samples of similar and very similar districts each.

On the right hand side, the variable Stipend, is a binary variable with value of 1 for stipend districts, zero otherwise. Dummy variable for meeting age eligibility criteria of 14 years or younger in 2003 has also been included in these regressions and is interacted with the stipend dummy to measure the impact of program on age eligible school going girls in stipend districts. InSchool6Years is a dummy variable for completing the primary years of education, as the stipend was provided from sixth grade onwards. The coefficient of interest, $\boldsymbol{\gamma_6}$ is a triple interaction difference estimating just the impact of the program on girls who completed primary school (in order to be eligible for stipend) on completion of middle or high school compared to

older girls in stipend districts, similar aged girls and older girls in non-stipend districts without controlling for household fixed effects. Controls have also been added for age and for oversampling, i.e. the dummy for households related to village officials.

3.2.2: Fixed effect regressions for middle and high school completion with stipend and non-stipend districts

The regression equation for middle and high school completion of girl i, in village v, belonging to family f, can hence be constructed in the following manner:

$$Completion_{ivf} = \beta_0 + \delta_f + \beta_1 Age_{ivf} + \beta_2 Age_{ivf}^2 + \beta_3 Stipend_v * Age_{ivf} + \gamma_1 AgeEligible_{ivf} + \gamma_2 AgeEligible_{ivf} * Stipend_v + \gamma_3 InSchool6Years_{ivf} + \gamma_4 InSchool6Years_{ivf} * AgeEligible_{ivf} + \gamma_5 InSchool6\ Years_{ivf} * Stipend_v + \mathbf{\gamma_6 InSchool6Years_{ivf} * AgeEligible_{ivf} * Stipend_v} + \varepsilon_{ivf} \quad (5)$$

The dependent variable, Completion, is a binary variable for probability of girls completing middle or high school for regressions with and without district dummies for the full sample, and using a restricted sample of similar and very similar districts each.

Since the stipend variable and household fixed effects cannot be used in the same regression, we have interacted the dummy Stipend with the variable Age, to control for differential age patterns in stipend districts. Household fixed effects have been included, denoted by δ_f, in the above-mentioned regression. The coefficient of interest, $\boldsymbol{\gamma_6}$ is a triple interaction difference estimate of the program's impact on completion of middle or high school for stipend eligible girls compared to the respective control groups.

3.2.3: Fixed effect regressions for middle and high school completion with stipend districts

The regression equation for school enrollment of girl i, in stipend village sv, belonging to family f, can be constructed in the following manner:

$$Completion_{isvf} = \beta_0 + \delta_f + \beta_1 Age_{isvf} + \beta_2 Age_{isvf}^2 + \gamma_1 AgeEligible_{isvf} + \gamma_3 InSchool6Years_{isvf} + \boldsymbol{\gamma_4 InSchool6Years_{isvf} * AgeEligible_{isvf}} + \varepsilon_{isvf} \quad (6)$$

The coefficient of interest $\boldsymbol{\gamma_4}$**,** is a double interaction difference estimate of stipend program on completion of middle or high school for eligible girls compared to their older sisters and/or cousins in stipend districts while controlling for household fixed effects.

3.2.4: Linear probability regressions for middle and high school completion without prerequisite of primary education

A linear probability regression is performed for the impact on completion of middle and high school without prerequisite of primary education in the following manner:

$$Completion_{ivf} = \beta_0 + \beta_1 Age_{ivf} + \beta_2 Age_{ivf}^2 + \beta_3 Stipend_v + \gamma_1 AgeEligible_{ivf} + \gamma_2 AgeEligible_{ivf} * Stipend_v + \mu_1 Officialrelation + \varepsilon_{ivf} \quad (7)$$

In this case, the total impact of stipend is estimated by dropping InSchool6Years terms and we estimate double interaction difference of *Stipend x AgeEligible* on completion of middle or high school for eligible girls compared to older girls in stipend districts, similar aged girls and older girls in non-stipend districts without controlling for household fixed effects.

3.2.5: Fixed effect regressions for middle and high school completion without prerequisite of primary education

The regression equation of girl i, in village v, belonging to family f, can hence be constructed in the following manner:

$$Completion_{ivf} = \beta_0 + \delta_f + \beta_1 Age_{ivf} + \beta_2 Age_{ivf}^2 + \beta_3 Stipend_v * Age_{ivf} + \gamma_1 AgeEligible_{ivf} + \gamma_2 AgeEligible_{ivf} * Stipend_v + \varepsilon_{ivf} \quad (8)$$

Since the stipend variable and household fixed effects cannot be used in the same regression, we have interacted the dummy Stipend with the variable Age, to control for differential age patterns in stipend districts. The coefficient of interest, $\boldsymbol{\gamma_2}$ is a double interaction difference estimate of the program's impact on completion of middle or high school without prerequisite of primary education for stipend eligible girls compared to the respective control groups.

3.2.6: Linear probability regressions for middle and high school completion of girls with primary education

A linear probability regression is performed for the impact on completion of middle and high school on eligible girls with primary education in the following manner:

$$Completion_{ivf} = \beta_0 + \beta_1 Age_{ivf} + \beta_2 Age_{ivf}^2 + \beta_3 Stipend_v + \gamma_1 AgeEligible_{ivf} + \gamma_2 AgeEligible_{ivf} * Stipend_v + \mu_1 Officialrelation + \varepsilon_{ivf} \quad (9)$$

The coefficient of interest, $\boldsymbol{\gamma_2}$ is a double interaction difference estimate of the program's impact on completion of middle or high school of girls with primary education compared to their respective control groups, without controlling for household fixed effects.

3.2.7: Fixed effect regressions for middle and high school completion in stipend and non-stipend districts with primary education

The regression equation for middle and high school completion of girl i, in village v, belonging to family f, can hence be constructed in the following manner:

$$Completion_{ivf} = \beta_0 + \delta_f + \beta_1 Age_{ivf} + \beta_2 Age_{ivf}^2 + \beta_3 Stipend_v * Age_{ivf} + \gamma_1 AgeEligible_{ivf} + \gamma_2 AgeEligible_{ivf} * Stipend_v + \varepsilon_{ivf} \quad (10)$$

The coefficient of interest, $\boldsymbol{\gamma_2}$ is a double interaction difference estimate of the program's impact on completion of middle or high school of girls with primary education compared to their older sisters and/or cousins, without controlling for household fixed effects.

3.3: Identifying effects of FSSSP on marriage outcomes of eligible girls

This study also makes an attempt to assess the impact of the Female Secondary School Stipend Program (FSSSP) on non-schooling outcomes e.g. marriage and fertility of eligible girls age 12-30. A triple difference strategy is used to estimate whether there was any significant impact on marriage and fertility of girls' eligible for program compared to:

- their older sisters and/or cousins (not stipend eligible because of age)
- girls, their older sisters and/or cousins in non-stipend districts (not stipend eligible because of program placement)

Three set of regressions will be carried out for each dependent variable following the same concept used in school enrollment and completion regressions for girls.

3.3.1: Linear probability regressions for marriage outcomes

$$Marriage_{ivf} = \beta_0 + \beta_1 Age_{ivf} + \beta_2 Age_{ivf}^2 + \beta_3 Stipend_v + \gamma_1 AgeEligible_{ivf} + \gamma_2 AgeEligible_{ivf} * Stipend_v + \gamma_3 InSchool6Years_{ivf} + \gamma_4 InSchool6Years_{ivf} * AgeEligible_{ivf} + \gamma_5 InSchool6\ Years_{ivf} * Stipend_v + \mathbf{\gamma_6 InSchool6Years_{ivf} * AgeEligible_{ivf} * Stipend_v} + \mu_1 Officialrelation + \varepsilon_{ivf} \quad (11)$$

The dependent variable, Marriage in this case is a dummy variable for probability of girls getting married before age 16 and age 18 for specifications with and without district dummies on the full sample, and using a restricted sample of similar and very similar districts. All girls below and equal to age 15 were dropped out for married before age 16 regressions and all girls below and equal to age 17 were dropped out for married before 18 regressions to avoid sample selection bias.

On the right side of the regressions, controls have been added for age variables, residence in a stipend district, age eligibility of girls, and completion of primary education. Interactions of these variables give us the program's impact through the main coefficient of interest γ_6. This shows impact of stipend program on probability of early marriages for eligible girls compared to older girls in stipend districts, girls of similar age and older girls in non-stipend districts without controlling for household fixed effects.

3.3.2: Fixed effect regressions for marriage outcomes, with stipend and non-stipend districts

The regression equation for marriage outcome of girl i, in village v, belonging to family f, can hence be constructed in the following manner:

$$Marriage_{ivf} = \beta_0 + \delta_f + \beta_1 Age_{ivf} + \beta_2 Age_{ivf}^2 + \beta_3 Stipend_v * Age_{ivf} + \gamma_1 AgeEligible_{ivf} + \gamma_2 AgeEligible_{ivf} * Stipend_v + \gamma_3 InSchool6Years_{ivf} + \gamma_4 InSchool6Years_{ivf} * AgeEligible_{ivf} + \gamma_5 InSchool6\ Years_{ivf} * Stipend_v + \mathbf{\gamma_6 InSchool6Years_{ivf} * AgeEligible_{ivf} * Stipend_v} + \varepsilon_{ivf} \quad (12)$$

With the same dependent variables for probability of girls getting married before age 16 and age 18, we have included an interaction of stipend and age variable on the right hand side. This was due to the inclusion of household fixed effects and also helps to control for differential age patterns in stipend districts. The main coefficient of interest, $\boldsymbol{\gamma_6}$ shows impact of program on probability of early marriages, i.e. before age 16 and age 18 for eligible girls compared to respective control groups.

3.3.3: Fixed effect regressions for marriage outcomes with stipend districts

The regression equation for marriage outcome of girl i, in stipend village sv, belonging to family f, can be constructed in the following manner:

$$Marriage_{isvf} = \beta_0 + \delta_f + \beta_1 Age_{isvf} + \beta_2 Age_{isvf}^2 + \gamma_1 AgeEligible_{isvf} + \gamma_2 InSchool6Years_{isvf} + \boldsymbol{\gamma_3 InSchool6Years_{isvf} * AgeEligible_{isvf}} + \varepsilon_{isvf} \quad (13)$$

The dependent variable, $Marriage_{isvf}$ in this case, represents the probability of getting married before age 16 and age 18 for eligible girls in stipend districts only. The stipend dummy variable and all other interactions with the stipend variable have been omitted for this regression. The main coefficient of interest; $\boldsymbol{\gamma_3}$ is a double interaction difference estimate of female secondary stipend program on probability of early marriages for eligible girls compared to their older sisters and/or cousins in stipend districts while controlling for household fixed effects.

A set of linear probability and fixed effects regressions were also carried out to assess total impact of the program on likelihood of getting married before 16 and 18 years of age, without prerequisite of primary education i.e. by dropping all InSchool6years terms and estimating double interaction difference: *AgeEligible x Stipend*. Respective dependent variables were regressed upon stipend dummy variable, age eligibility criterion, double interaction: *AgeEligible x Stipend*, along with age variables and district dummies for LPM regressions. Similarly, for fixed effects regressions, dependent variables were regressed upon Stipend interacted with age, age eligibility criterion, double interaction: *AgeEligible x Stipend*, along with age variables.

3.4: Identifying effects of FSSSP on fertility outcomes of eligible girls

Three set of regressions will be carried out for each dependent variable regarding fertility outcomes of stipend eligible girls.

3.4.1: Linear regressions for fertility outcomes

$$\text{Fertility}_{ivf} = \beta_0 + \beta_1 \text{Age}_{ivf} + \beta_2 \text{Age}_{ivf}^2 + \beta_3 \text{Year of Marriage}_{ivf} + \beta_4 \text{Stipend}_v + \gamma_1 \text{AgeEligible}_{ivf} + \gamma_2 \text{AgeEligible}_{ivf} * \text{Stipend}_v + \gamma_3 \text{InSchool6Years}_{ivf} + \gamma_4 \text{InSchool6Years}_{ivf} * \text{AgeEligible}_{ivf} + \gamma_5 \text{InSchool6Years}_{ivf} * \text{Stipend}_v + \mathbf{\gamma_6 InSchool6Years_{ivf} * AgeEligible_{ivf} * Stipend_v} + \mu_1 \text{Officialrelation} + \varepsilon_{ivf} \quad (14)$$

The dependent variable, Fertility in this case represents a number of different variables including number of children and age at the time of first child for specifications with and without district dummies on the full sample, and on a restricted sample of similar and very similar districts.

On the right side of regressions, controls have been added for age, year of marriage, residence in a stipend district, age eligibility of girls for the FSSSP, and completion of primary education. The main coefficient of interest shows the impact of the program on the number of children and age at time of first child's birth for eligible girls compared to older girls in stipend districts, girls of similar age and older girls in non-stipend districts when not controlling for household fixed effects.

3.4.2: Fixed effect regressions for fertility outcomes with stipend and non-stipend districts:

The regression equation for fertility outcome of girl i, in village v, belonging to family f, can hence be constructed in the following manner:

$$Fertility_{ivf} = \beta_0 + \delta_f + \beta_1 Age_{ivf} + \beta_2 Age_{ivf}^2 + \beta_3 Year\ of\ Marriage_{ivf} + \beta_4 Stipend_v * Age_{ivf} + \gamma_1 AgeEligible_{ivf} + \gamma_2 AgeEligible_{ivf} * Stipend_v + \gamma_3 InSchool6Years_{ivf} + \gamma_4 InSchool6Years_{ivf} * AgeEligible_{ivf} + \gamma_5 InSchool6Years_{ivf} * Stipend_v + \mathbf{\gamma_6 InSchool6Years_{ivf} * AgeEligible_{ivf} * Stipend_v} + \varepsilon_{ivf} \quad (15)$$

With the same dependent variables, we have included an interaction of the stipend dummy with the girl's age on the right hand side. This helps to control for differential age patterns in stipend districts when household fixed effects are controlled for. The main coefficient of interest, $\boldsymbol{\gamma_6}$ shows the impact of the stipend program on the number of children and age at time of first birth, for eligible girls compared to respective control groups in stipend and non-stipend districts while controlling for household fixed effects.

3.4.3: Fixed effect regressions for fertility outcomes, with stipend districts

The regression equation for fertility outcome of girl i, in stipend village sv, belonging to family f, can be constructed in the following manner:

$$Fertility_{isvf} = \beta_0 + \delta_f + \beta_1 Age_{isvf} + \beta_2 Age_{isvf}^2 + \beta_3 Year\ of\ Marriage_{isvf} + \gamma_1 AgeEligible_{isvf} + \gamma_2 InSchool6Years_{isvf} + \gamma_3 InSchool6Years_{isvf} * AgeEligible_{isvf} + \varepsilon_{isvf} \quad (16)$$

The stipend variable and all other interactions with stipend variable have been omitted for this regression. The main coefficient of interest; $\boldsymbol{\gamma_3}$ is a double interaction difference estimate of the female secondary stipend program on number of children and age at time of first child, for eligible girls compared to their older sisters and/or cousins in stipend districts while controlling for household fixed effects.

A set of linear probability and fixed effects regressions were also carried out to assess total impact of the program on number of children and age at time of first birth, without prerequisite of primary education i.e. by dropping all InSchool6years terms and estimating double interaction difference: *AgeEligible x Stipend*. Respective dependent variables were regressed upon stipend dummy variable, age eligibility criterion, double interaction: *AgeEligible x Stipend*, along with year of marriage variable, age variables and district dummies for LPM regressions. Similarly, for fixed effects regressions, dependent variables were regressed upon Stipend interacted with age, age eligibility criterion, double interaction: *AgeEligible x Stipend*, along with age variables.

4. Data

The Patron-Client Project dataset (2013) is used in this study. It is a unique household survey carried out with support from British Academy International Partnerships program and Lahore School of Economics. It covered sixty-one different rural clusters of Punjab, Pakistan. A census comprising a total of 13000 households in 18 National Assembly constituencies completed a short survey; however, we will be focusing on a smaller sample of 1000 households in our study that completed the full household survey, including the questions on school enrollment and marriage outcomes.

The sampling carried out in this survey is quite different, as a large portion of the project was geared towards understanding patron-client relationships. Areas have been selected based on past election results. To select the targeted sample, National Assembly constituencies were first identified with competitive elections (lower than 10 percent margin between winner and runner-up) in either year 2008 or both years 2002 and 2008. Once these constituencies were selected, home villages of winner and runner-up politicians in both years 2002 and 2008 elections were identified. "Home villages" were defined as rural villages where politician was born or where his family belonged as long-time landlords. Public secondary data was used for identification of home villages. For survey within villages, team supervisor decided that if there were fewer than 250 households then whole village was sampled. Otherwise, village map was divided into segments and random selection of households took place. In short, cluster selection of villages was followed by random selection of 10-16 households in each cluster.

This data set has oversampled households related to village officials identified in census. The problem of selection based on the political variables was corrected by adding a dummy variable for all observations related to village officials in the linear probability model regressions, meaning they were either member of family or blood relatives. Moreover, all linear probability and fixed effects results were adjusted with sampling weights to assure that the estimated treatment effect is not different in a simple random sample.

The strength of the Patron-Client Project dataset (2013) is that longer time has spent since the FSSSP initiated in 2003 and hence, this dataset can help us analyze impacts on marriage and fertility. The length of program's exposure appeared to have an increased marginal benefit on completion of high school grades and delay in marriages according to one evaluation of the program (IEG, 2011).

However, our dataset had limited information about targeted household's socio-economic characteristics, almost none on parental characteristics. Moreover, limited information was collected on a sub-sample of the children in a household (two eldest and two youngest children currently residing) for time-saving purposes.

The project dataset covered a total of 14 out of Punjab's 34 districts with eight of them being stipend eligible including Bahawalnagar, D.G.Khan, Khanewal, Lodhran, Muzaffargarh, Okara, Pakpattan and Vehari. The remaining six districts were non-stipend districts naming Faisalabad, Gujrat, Khushab, Rawalpindi, Sahiwal and Sheikhupura (see Table 3). Out of the 14 districts covered in the Patron-Client dataset 2013, 8 "similar districts" have been selected with literacy ratio range between 34.7% - 43.9%. These similar districts include Bahawalnagar, Khanewal, Khushab, Okara, Pakpattan, Sahiwal, Sheikhupura and Vehari. Furthermore, out of these similar

districts, 6 “very similar districts” have been selected with literacy ratio range between 36.8%-43.9%. The very similar districts include Khanewal, Khushab, Okara, Sahiwal, Sheikhupura and Vehari (see Table 3).

We have data on current enrollment status and total years of education received in both selected stipend and non-stipend districts mentioned above:

- For all girls age 12-30 raised in the sampled household; we also know if she was a stipend recipient or not.
- For up to four children age 5-14 in a household (two eldest and two youngest children currently residing); these include boys and girls.

The level of education achieved was used to create a panel (across time) of year-by-year enrollment status for each individual from age 6 to18 (or current age, whichever is less). The reshaped panel dataset with multiple observations for the same individual was used to perform the enrollment regressions. This is confirmed by an increase in the total number of observations for males and females illustrated in Table 4.

The majority of the girls in our sample meet the age eligibility criteria of 14 years or younger in 2003 for stipend, non-stipend, similar and very similar districts. However, girls are 8.49 percent less likely to meet the pre requisite of primary school completion in stipend compared to non-stipend districts. Patron-Client dataset 2013 includes no information on school enrollment of boys before year 2003 and hence comparison of female and male siblings can only be performed after 2003. Female enrollment rates have been divided into different time periods with short-term enrollment rates up to 2006, medium-term enrollment rates up to 2009 and long-term enrollment rates up to 2013. These rates are consistently higher for non-stipend than stipend districts (see

Table 4). Results of our study will further elaborate on this data finding. Overall trends in female enrollment rates in our dataset are that they have increased from the short-term to medium-term and have reduced subsequently from medium-term to long-term for stipend, similar and very similar districts (see Figure 5).

The comparison of district level female enrollment rates in 2013, further justify on narrowing districts to similar and very similar districts, due to significant variations observed in inter-district enrollment rates for females (see Figure 6). For example, districts including Gujrat, Rawlapindi, Sheikhupura have much higher enrollment rates than DG Khan, Khanewal and Lodhran due to differences present in supply and demand for education at primary and secondary level for girls in rural areas. Moreover, availability of basic infrastructure, health and medical facilities, political and administrative structure of local bodies, are some other factors which might play an important role in explaining these differences (Dhillon and Bhullar, 2004).

As far as completion rates are concerned, Table 5 points out that around 19.61% of females in dataset have completed middle school in stipend districts and 36.52% completed middle school in non-stipend districts. High school completion rates have been almost half of the middle school completion rate for all districts. Average completed years of school for females are approximately 4-5 years for stipend, similar and very similar districts and around 6 years for non-stipend districts according to the statistics.

Moreover, data is also available for marriage and fertility outcomes on variables including marital status, age at time of marriage, dowry, husband's land ownership, consanguinity of marriage, number of children, and age at time of first childbirth in addition to stipend recipient status:

- For all girls age 12-30 in the sample
- In both stipend and non-stipend districts.

The summary statistics of key variables in marriage and fertility regressions, illustrated in Table 6, show that number of females in stipend districts are three times higher than the non-stipend districts. However, there are 10% more sampled married females in non-stipend than stipend districts. Our data also highlights on average age at marriage to be around 17-18 years for stipend, similar and very similar districts. As far as fertility outcomes are concerned, more than 60% of married females have at least one child in both stipend and non-stipend districts. Regression results will further elaborate on these relevant data findings.

5. Results

5.1: Impact of FSSSP on school enrollment

The impact of program on enrollment is divided into three different time spans, namely long (up until 2013), medium (up until 2009) and short-term impacts (up until 2006).

5.1.1: Impact of FSSSP on school enrollment in long-term

Table 7 examines effect of Female Secondary School Stipend Program (FSSSP) on long-term enrollment (2003-2013) of girls' age 6-18 years after adjusting for sampling weights. The first two columns show linear probability results from estimating equation 1, where long-term female enrollment is regressed on age eligibility criterion of 14 years or younger in 2003 (year when stipend program was introduced), for girl with primary level of education (stipend began in sixth grade), living in a stipend district. Years present in the new reshaped panel dataset across time for each individual between 6-18 years of age, were interacted with stipend to control for differential enrollment trends by stipend districts overtime. The FSSSP effect is identified through triple difference: Do FSSSP eligible girls become more likely to stay enrolled as compared to older girls in stipend districts, similar aged girls and older girls in non-stipend districts?

We find that an age eligible girl in a stipend district is around 10% less likely to remain in school compared to a non-stipend district in the long-term period (2003-2013): the double interaction *Stipend* ×*AgeEligible* is negative and significant for linear probability regressions without and with district dummies. The main triple interaction *InSchool6years* × *AgeEligible* × *Stipend* is insignificant throughout long-term enrollment regressions, concluding that there is no evidence that program eligible girls enrollment increased relative to control groups of older girls in stipend

districts, girls of similar age and older girls in non-stipend districts without controlling for household fixed effects.

The third column of Table 7 shows results of estimating equation 2, which is a fixed effects regression for both stipend and non-stipend districts, so that age eligible girls are compared to their older sisters and/or cousins within household. The main triple interaction *InSchool6years* × *AgeEligible* × *Stipend*, along with other double interactions provide no evidence that eligible girls' long-term enrollment increased compared to respective control groups after controlling for household fixed effects.

The last column of Table 7 shows results of estimating equation 3, which is a fixed effects regression for stipend districts only. The main double difference *InSchool6years* × *AgeEligible*, provides a positive and insignificant result proving that there is no evidence that long-term enrollment of program eligible girls increased relative to a control group of their older sisters and/or cousins in stipend districts after controlling for household fixed effects.

After observing no significant impact of program in long-term i.e. parents continued to send their children to school regardless of the program, we decided to assess its impact for comparatively smaller time periods, i.e. for medium-term (2003-2009) and short-term (2003-2006) to assess if program had any significant impact in the years immediately after its initiation or a few years later.

5.1.2: Impact of FSSSP on school enrollment in medium-term

The effect of Female Secondary School Stipend Program (FSSSP) on medium-term enrollment (2003-2009) for girls' age 6-18 years is examined in Table 8, after adjustment of population weights. The first two columns show linear probability results from estimating equation 1, where dependent variable is regressed on age eligibility criterion, for girl with primary level of education and living in a stipend district.

We find that a girl who has been in school for six years is 11.4% more likely to remain in school during the medium-term in stipend as compared to non-stipend districts: the double interaction *InSchool6years* × *Stipend* is positive and significant for regression with district dummies. The main triple interaction *InSchool6years* × *AgeEligible* × *Stipend* is positive and significant for medium-term regression with district dummies, concluding that enrollment from years 2003-2009 of program eligible girls increased in magnitude by 16.1% relative to control groups of older girls in stipend districts, and girls of both similar age and older girls in non-stipend districts without controlling for household fixed effects.

The next three columns of Table 8 show results of estimating equation 2, which is a fixed effects regression including both stipend and non-stipend districts. The main triple difference *InSchool6years* × *AgeEligible* × *Stipend*, provides no significant evidence that medium-term enrollment of program eligible girls' increased relative to the control groups of all, similar and very similar stipend and non-stipend districts.

The last three columns of Table 8 show results of estimating equation 3, which is a fixed effects regression for stipend districts only. The main double difference *InSchool6years* × *AgeEligible*, indicates no significant impact on medium term enrollment of eligible girls relative to a control

group of elder sisters and/or cousins in all, similar and very similar stipend districts after controlling for household fixed effects.

5.1.3: Impact of FSSSP on school enrollment in short-term

The effect of Female Secondary School Stipend Program (FSSSP) on short-term enrollment (2003-2006) for girls' age 6-18 years is examined in Table 9. The first two columns show linear probability results from estimating equation 1, where short-term female enrollment is regressed on the age eligibility criterion, having completed her primary level of education, living in a stipend district.

We find that a girl with six years of primary education is 13.4% more likely to remain in school during the short-term in stipend as compared to non-stipend districts: the double interaction *InSchool6years* × *Stipend* is positive and significant with a higher magnitude for regression with district dummies. The main triple interaction *InSchool6years* × *AgeEligible* × *Stipend* is positive and significant in the short-term regression, concluding that enrollment of program eligible girls was 16.7% higher till year 2006 in stipend districts relative to control groups of older girls, and girls of both similar age and older girls in non-stipend districts without controlling for household fixed effects.

The next three columns of Table 9 show results of estimating equation 2, which is a fixed effects regression using the data from both stipend and non-stipend districts. The main triple difference *InSchool6years* × *AgeEligible* × *Stipend,* along with other double interactions, provide no indication that program eligible girls' enrollment increased in comparison to control groups in stipend and non-stipend districts for years 2003-2006.

The last three columns of Table 9 provide clear evidence that program eligible girls' short-term enrollment increased relative to a control group of elder sisters and/or cousins by larger magnitude of 16.2% in all stipend districts, by 18.5% in similar and 20.3% in very similar stipend districts after controlling for household fixed effects.

5.1.4: Pattern observed in impact assessment of stipend program on school enrollment

The above results show that this program initiated in 2003 has been successful in improving female enrollment for short and medium terms, approximately until the year 2008. In addition, we ran a few more regressions to assess when the impact of the stipend program dropped off, by including all years up until 2009, 2010, 2011 and 2012 respectively. These results were not included but helped to generalize that after year 2008, there was consistently no significant impact of program on enrollment of eligible girls in stipend districts compared to their elder sisters and/or cousins, girls of similar age, their elder sisters and/or cousins in non-stipend districts.

Because of concerns about program effectiveness, the Punjab Education Sector Reform Program and World Bank started a supplemental stipend pilot project in April 2013 in two of the stipend districts.[2] The incentive package of this project was to increase the amount of stipend from PRs 600 to PRs 900 for girls in grades 6-8, and from PRs 600 to PRs 1200 for girls in grades 9-10 aiming to increase enrollment and transition of girls from primary to middle school, and from

[2] See the Implementation Status and Results Report for the World Bank PESRP II, December 2014, PESRP's website states that the pilot is being carried out in 68 schools in six tehsils (Darya Khan, KallurKot, Mankera, Kasur, KotRadhaKishan, and Chunian) in two stipend districts i.e. Bhakkar and Kasur.

middle to high school level of education. The World Bank expects to extend this higher stipend amounts to girls in all rural government schools (World Bank 2014).[3]

5.1.5: Impact of FSSSP on middle school enrollment of females compared to males

We have also performed a set of linear probability and fixed effect regressions for comparison of middle school enrollment of males and females of similar age in the same household for stipend compared to non-stipend districts. Patron-Client dataset has information on boys of the same household; 5-14 years of age after the start of stipend program (see Table 4). Middle school enrollment in this scenario is regressed on a number of indicators including gender of child; years post 2003 for girl with primary level of education, living in stipend district along with age and district fixed effects added, adjusted with population weights. Year fixed effects are interacted with gender to control for differential enrollment rates by gender. These results have not been included and show no improvement in female middle school enrollment compared to their male siblings of similar age in both stipend and non-stipend districts: the triple interaction *InSchool6years* × *AgeEligible* × *Female* is insignificant and dominantly negative throughout all linear probability and fixed effects regressions.

[3] The Implementation Completion and Results Report (2007) for the earlier World Bank project, the Education Sector Development Policy Credit to the Government of Punjab, suggests that the amount of the stipend covered is uniform and stationary but was not sufficient to cover transportation. Inflation has been high in the subsequent years, further eroding the purchasing power of the stipend.

5.1.6: Impact of FSSSP on school enrollment without prerequisite of primary education

A set of linear probability and fixed effects regressions were carried out to assess total impact of the program on long, medium and short-term enrollment without prerequisite of primary education i.e. by dropping all InSchool6years terms and estimating double interaction difference: *AgeEligible x Stipend*. These results were not included but helped to conclude that there was no total impact of the program on eligible girls without prerequisite of achieving primary education in long, medium and short-term, compared to their elder sisters and/or cousins in stipend districts, girls of similar age, their elder sisters and/or cousins in non-stipend districts, with or without controlling for household fixed effects.

5.2: Impact of FSSSP on middle and high school completion

This section highlights on effects of subsidy program on completion of middle school (grades 6-8) and high school (grades 8-10) by eligible girls.

5.2.1: Impact of FSSSP on middle school completion

The first four columns of Table 10, show linear probability results from estimating equation 4, where probability of middle school completion is regressed on indicators for age eligibility criterion of 14 years or younger in 2003, for girls who had been in school for at least six years, living in a stipend district. The FSSSP effect is identified through triple difference interaction: *InSchool6years* × *AgeEligible* × *Stipend*. We estimate, a negative impact of the program on middle school completion, although it is statistically insignificant throughout the various specifications of all, similar and very similar districts. Hence, no relevant impact on middle school completion of eligible girls compared to older girls in stipend districts, and girls of similar age and older girls in non-stipend districts while not controlling for household fixed effects.

The next three columns of Table 10 show fixed effect regression results from estimating equation 5, where dependent variable is regressed on similar set of variables except a *Stipend* × *Age* variable is substituted for the simple stipend dummy, and household fixed effects are controlled for in both stipend and non-stipend districts.[4] The double and triple interaction terms provide negative but insignificant results, hence no evidence is found regarding eligible girls to be in any case, more likely to complete middle school compared to respective control groups in stipend and non-stipend districts.

[4] Since there is no intra-household variation in the simple Stipend dummy variable, we interact Stipend with Age variable.

The last column of Table 10 shows fixed effect results from estimating equation 6 for stipend districts only. The main coefficient of interest, *InSchool6years* × *AgeEligible,* again provides no indication of any positive impact of this program on completion of middle school for eligible girls compared to their older sisters and/or cousins particularly for stipend districts.

5.2.2: Impact of FSSSP on high school completion

The first four columns of Table 11, show linear probability results from estimating equation 4, where high school completion is regressed on indicators for age eligibility criterion of 14 years or younger in 2003, for student who had been in school for at least six years, living in stipend district. An age eligible girl in stipend district is 0.893% more likely to complete high school, represented by positive and significant coefficient of double interaction term: *Stipend* × *AgeEligible* in the linear probability model regressions for specification of without districts. The FSSSP effect is identified through triple difference interaction: *InSchool6years* × *AgeEligible* × *Stipend.* The estimates for different specifications are all positive, but insignificant showing no impact on high school completion of eligible girls compared to older girls in stipend districts, and girls of similar age and older girls in non-stipend districts while not controlling for household fixed effects.

The next three columns of Table 11 show fixed effect results from estimating equation 5, where dependent variable is regressed on similar set of variables except stipend variable, and household fixed effects are controlled for both stipend and non-stipend districts. An age eligible girl with primary education is 40.9% more likely to complete high school in similar districts compared to older sisters and/or cousins, girls of similar age, older sisters and/or cousins in similar non-stipend districts. The rest of double and triple interaction terms provide insignificant results,

hence no evidence found regarding eligible girls being more likely to complete high school compared to respective control groups in stipend and non-stipend districts.

The last column of Table 11 shows fixed effect results from estimating equation 6 for stipend districts only. The main coefficient of interest, *InSchool6years* × *AgeEligible* provides no evidence of any positive impact of this program on completion of high school for eligible girls compared to their elder sisters and/or cousins in stipend districts only.

5.2.3: Impact of FSSSP on Completion of Middle School (6-8 grades) without prerequisite of primary education

We have made an attempt in assessing impact of program on middle completion without prerequisite of primary education by dropping all InSchool6years terms from the earlier regressions. The first four columns of Table 12 show LPM results from estimating equation 7, where middle school completion is regressed on indicators for age eligibility criterion, living in stipend district. Results show no impact of the program on middle school completion of girls without the eligibility criterion of completed primary education, compared to older girls in stipend districts, girls of similar age and older girls in non-stipend districts while not controlling for household fixed effects.

The last three columns of Table 12 show fixed effect results from estimating equation 8, where dependent variable is regressed on similar set of variables except stipend variable, and household fixed effects are controlled for both stipend and non-stipend districts. Again, results show negative but insignificant impact of program on middle school completion of eligible girls when prerequisite of receiving primary education has been removed as compared to their respective control groups.

5.2.4: Impact of FSSSP on Completion of High School (8-10 grades) without prerequisite of primary education

We have made an attempt in assessing impact of program on high completion without prerequisite of primary education by dropping all InSchool6years terms from the earlier regressions. The first four columns of Table 13 show linear probability results from estimating equation 7, where high school completion is regressed on indicators for age eligibility criterion, living in stipend district. Results show that by removing the eligibility criterion of primary education, girls are around 9-10% more likely to complete high school compared to older girls in stipend districts, girls of similar age and older girls in non-stipend districts in LPM regressions without and with district dummies.

The last three columns of Table 13 show fixed effect results from estimating equation 8, where dependent variable is regressed on similar set of variables except stipend variable, and household fixed effects are controlled for both stipend and non-stipend districts. Results show no significant impact of program on high school completion of eligible girls when prerequisite of receiving primary education has been removed as compared to their respective control groups.

5.2.5: Impact of FSSSP on Completion of Middle (6-8 grades) and High School (8-10 grades) on girls with primary education

We have made an attempt in assessing impact of program on middle and high school completion on smaller sample of girls with completed primary education. The first two and third, fourth columns of Table 14 show LPM results from estimating equation 9, where middle and high school completion is regressed on indicators for age eligibility criterion, living in stipend district. Results show no impact of the program on middle and high school completion of eligible girls with primary education compared to older girls in stipend districts, girls of similar age and older girls in non-stipend districts while not controlling for household fixed effects.

The third and sixth column of Table 14 show fixed effect results from estimating equation 10, where dependent variable is regressed on similar set of variables except stipend variable, and household fixed effects are controlled for both stipend and non-stipend districts. Again, results show no significant impact of program on middle and high school completion of eligible girls' with primary education compared to their respective control groups after controlling for household fixed effects.

5.2.6: Impact on Completed Years of Education

In addition, we also ran a set of regressions to assess impact of program on completed years of school. The detailed regression results are not presented here but the following provides a summary of our findings.

First, a tobit model was used on currently not enrolled individuals, as there are some individuals in the sample who have never attended school. The tobit and random effects tobit model results indicate that the program has had no significant impact on completed years of school of eligible girls compared to respective control groups in both stipend and non-stipend districts.

Secondly, regressions were performed for educational attainment of stipend eligible girls regressed on age variables, interactions of stipend with age and interactions of stipend with a new variable constructed named, ProgramExposure. This is a continuous variable with number of potential years of school left in 2003 when the program was initiated. Linear probability and fixed effect results for educational attainment, again were not able to show any significant impact on eligible girls compared to respective control groups in both stipend and non-stipend districts.

5.3: Impact of FSSSP on marriage outcomes

This section discusses the impact of the stipend program on marriage outcomes i.e.: probability of getting married before age 16 and before age 18 for eligible girls 12-30 years old after adjustment of population weights.

5.3.1: Impact of FSSSP on probability of getting married before age 16

The first four columns of Table 15, show linear probability results from estimating equation 11, where probability of getting married before age 16 is regressed on indicators for age eligibility criterion of 14 years or younger in year 2003, for girls with primary education living in a stipend district. The FSSSP effect is measured through triple difference: Are FSSSP eligible girls less likely to get involved in early marriages compared to elder girls in stipend districts, girls of similar age and elder girls in non-stipend districts?

We find that a girl who has been in school six years is 13.8% less likely to get married before age 16 in stipend as compared to non-stipend districts: the double interaction *InSchool6years* × *Stipend* is negative and significant by a higher magnitude for all linear probability results, without, with, similar and very similar districts. This interpretation suggests that primary education is more protective against early marriage in stipend as compared to non-stipend districts. Another interpretation is that primary schooling mediates general trend for early marriage in stipend districts as the coefficient of Stipend dummy variable is positive and highly significant. Moreover, an age eligible girl with primary education is 7-9% less likely to get married as compared to the respective control groups in all relevant specifications. An age eligible girl without primary education as a pre requisite criterion is 11.5% less likely to get married in very similar stipend districts. All double interactions are supporting the fact that program encouraged late marriages of eligible girls, however, the main triple interaction

concludes with an opposite finding supporting earlier marriages for eligible girls compared to respective control groups. The main triple interaction, *InSchool6years* × *AgeEligible* × *Stipend*, is positive and highly significant, indicating that program eligible girls are 13.9% more likely to get married before age 16 compared to their respective control groups in stipend and non-stipend districts without accounting for household fixed effects. As far as similar and very similar districts are concerned, triple interaction represents that program eligible girls are 14.2% and 20.8% more likely to get married before age 16 respectively in comparison to control groups.

The next three columns of Table 15 show results of estimating equation 12, which is a fixed effects regression for both stipend and non-stipend districts. A girl with primary education is 20.5% less likely to get married before 16 in stipend compared to non-stipend districts. This may be interpreted as primary education being more protective against early marriage or primary schooling mediating general trend for early marriage in stipend districts as interaction, *Stipend x Age* is positive and highly significant for these specifications. Moreover, age eligible girls with primary education are 11.0% less likely to get married in all districts. However, surprisingly, the main triple interaction shows eligible girls to be 22% more likely to get married before age 16 compared to their elder sisters and/or cousins in stipend districts, girls of similar age and their elder sisters and/or cousins in non-stipend districts after taking household fixed effects into account.

The last column of Table 15 shows results of estimating equation 13, which is a fixed effect regression for stipend districts only. The main double interaction: *InSchool6years* × *AgeEligible*, interestingly provides no evidence of eligible girls to be married before age 16 as compared to their elder sisters and/or cousins in stipend districts after controlling for household fixed effects.

5.3.2: Impact of FSSSP on probability of getting married before age 18

The first four columns of Table 16, show linear probability results from estimating equation 11, where probability of getting married before age 18 is regressed on indicators for age eligibility criterion of 14 years or younger in year 2003, for girl with primary education living in a stipend district.

We find that a girl who has been in school for six years is around 14% less likely to get married before age 18 in stipend as compared to non-stipend districts: the double interaction *InSchool6years* × *Stipend* is negative and significant for all and very similar districts without controlling for household fixed effects. The main triple interaction, *InSchool6years* × *AgeEligible* × *Stipend* provides an unexpected result of eligible girls having 20.8% and 30.5% more chances of getting married before age 18 compared to their respective control groups, in a restricted sample of similar and very similar stipend and non-stipend districts, without accounting for household fixed effects.

The next three columns of Table 16 show results of estimating equation 12, which is a fixed effects regression for both stipend and non-stipend districts. These regressions show stipend eligible girls to be 21.7% more likely to be married before age 18 in all districts and 35.8% in restricted sample of very similar districts compared to their elder sisters and/or cousins.

The last column of Table 16 shows results of estimating equation 13, which is a fixed effect regression for stipend districts only. The main double interaction: *InSchool6years* × *AgeEligible*, provides strong evidence of eligible girls to be married before age 18 as compared to their elder sisters and/or cousins in stipend districts after controlling for household fixed effects.

5.3.3: Impact of FSSSP on marriage outcomes without eligibility criterion of primary education

A set of linear probability and fixed effects regressions were carried out to assess total impact of the program on marriage outcomes for example, probability of getting married before 16 and 18 years of age without prerequisite of primary education i.e. by dropping all InSchool6years terms and estimating double interaction difference: *AgeEligible x Stipend*. These results were not included but helped to conclude that 17.7% girls in similar districts and 20.3% girls in all districts were more likely to get married before ages 16 and 18 respectively, as compared to their elder sisters and/or cousins in stipend districts, girls of similar age, their elder sisters and/or cousins in non-stipend districts, after eliminating condition for primary school completion and controlling for household fixed effects.

The results conclude that stipend program resulted in incidence of early marriages before age 16 and age 18 for eligible girls in stipend districts. This can be due to the fact that study has been carried out in rural areas, where higher levels of education might reduce girls' prospects of getting married. Mother-in-laws play a very important role in selection of wives for their sons. They still prefer young, less educated girls because there will be more chances for them to stay at home, performing household chores, spending time serving their in laws and taking care of children. They also prefer such daughter-in-laws as lower levels of education signal towards lower levels of awareness and fewer chances that dominance of mother-in-laws will be challenged at home (Rubenberg, 2001). Men also prefer younger women for marriage considering the fact that reproductive capacities of women suffer a more severe age-linked decline as compared to males (Delton and Robertson, 2006).

There was another set of regressions performed for other variables related to marriage outcomes including dowry, consanguinity with husband, and husband's possession of agricultural land. No statistically significant impact of the stipend program was observed on these dependent variables except that smaller sample of targeted girls were 30% more likely to marry their cousins as compared to elder sisters and/or cousins in stipend districts after controlling for household fixed effects.

5.4: Impact of FSSSP on fertility outcomes

This section helps to explain impact of stipend program on fertility outcomes for example, number of children and age at the time of first birth of child.

5.4.1: Impact of FSSSP on number of children of eligible married girls

The first two columns of Table 17 examine impact of program on number of children of married eligible girls by estimating equation 14, where number of children is regressed upon age variables, year of marriage, age eligibility criterion, for girl with six years of schooling, living in stipend district, without controlling for household fixed effects.

Using the LPM, we find no evidence of this program having any effect on number of children of married eligible girls compared to older girls in stipend districts, and girls of similar age and older girls in non-stipend districts.

The third column of Table 17 show results of fixed effect regressions using the data from both stipend and non-stipend districts, where program seemed to have an impact on the number of children in this context. Eligible girls ended up having more children as compared to their older sisters and/or cousins in stipend districts, girls of similar age, their older sisters and/or cousins in non-stipend districts when controlling for household fixed effects. This result stays consistent when comparison of eligible girls is exclusively made with their elder sisters and/or cousins in stipend districts only.

5.4.2: Impact of FSSSP on age at time of first birth for eligible married girls

The columns 5 and 6 of Table 17 examine impact of program on age at time of first birth of married eligible girls by estimating equation 14, where dependent variable is regressed upon year of marriage, age eligibility criterion, for girl with six years of schooling, living in stipend district, without controlling for household fixed effects.

In the LPM, we find that an age eligible girl in a stipend district is older at the time of her first child compared to older girls, girls of similar age and older girls in non-stipend districts, while not controlling for household fixed effects. However, the main triple interaction, *InSchool6years* × *AgeEligible* × *Stipend*, does not represent any significant finding with this regard.

The column 7 of Table 17 show results of fixed effect regressions using data from stipend and non-stipend districts, where the program seemed to have no impact on age at the time of first birth for stipend eligible girls. Interestingly, this result changes dramatically when considering stipend districts only, supporting age eligible girls to be younger at the time of first birth compared to their elder sisters and/or cousins. However the sample size in this specification is very small.

5.4.3: Impact of FSSSP on fertility outcomes without eligibility criterion of primary education

A set of linear and fixed effects regressions were carried out to assess total impact of the program on fertility outcomes for example, number of children and age at time of first child without prerequisite of primary education i.e. by dropping all InSchool6years terms and estimating double interaction difference: *AgeEligible x Stipend*. These results were not included but helped to conclude that program had no significant impact on number children of eligible

girls as compared to their elder sisters and/or cousins in stipend districts, girls of similar age, their elder sisters and/or cousins in non-stipend districts, after eliminating condition for primary school completion. As far as, age at the time of first birth regressions are concerned, there is clear evidence that age eligible girls without criterion of primary school completion are older at time of first child as compared to the respective control groups in both stipend and non-stipend districts with and without controlling for household fixed effects. This was an interesting finding, as just removing the completion of primary education criterion resulted in delay of child birth by eligible girls as compared to their comparison groups in all specifications.

To summarize, the stipend program appears to have had adversely affected fertility and marriage outcomes of eligible girls in ways that we did not anticipate. Instead of leading to delayed marriage and fertility, girls exposed to the program appear to have born more children in some scenarios and were comparatively younger at time of first birth than respective control groups in both stipend and non-stipend districts. As demonstrated in the earlier section, the program resulted in eligible girls getting involved in early marriages before age 16 and age 18. Early marriages usually result in earlier child birth and more number of children due to longer reproductive span of woman left. Another reason for having more number of children is the preference of in laws especially mother-in laws and in some cases, husbands for birth of a son (Robitaille and Chatterjee, 2013).

6. Conclusion

The Female Secondary School Stipend Program (FSSSP), a component of Punjab Education Sector Reform Program (PERSP) was implemented along with other measures to improve both the provision and quality of educational services especially for girls in Punjab, Pakistan. Our study focuses on the impact of FSSSP on school enrollment, middle and high school completion, marriage and fertility outcomes for females in rural areas of Punjab including both stipend and non-stipend districts. A triple difference identification strategy along with a semi-regression discontinuity design for districts with closer literacy ratio rankings is used to compare eligible girls to their older sisters and/or cousins in stipend districts, and girls of similar age, their elder sisters and/or cousins in non-stipend districts, which is relatively a different control group than earlier studies. In comparison, earlier studies have compared girls' enrollment in stipend districts to their brothers of similar age or to girls in non-stipend districts.

Results show that program had short and medium term impact on school enrollment of girls' age 6-18 years and with no measurable impact after 2008. World Bank program documents note concerns about the efficacy of the program, amount of the stipend and revisions were made in the implementation and design of this program in April 2013. Moreover, program hardly observed any significant impact on completing middle and high school for eligible girls.

Moving on to non-schooling outcomes of girls age 12-30 in rural areas, which were affected adversely by this stipend program. Eligible girls were more likely to be engaged in early marriages and child birth as compared to their elder sisters and/or cousins in stipend districts, girls of similar age, their elder sisters and/or cousins in non-stipend districts. One of the reasons behind this behavior can be attributed to cultural and social norms observed in rural areas of Punjab where mother-in-laws and husbands prefer young, uneducated women with more chances

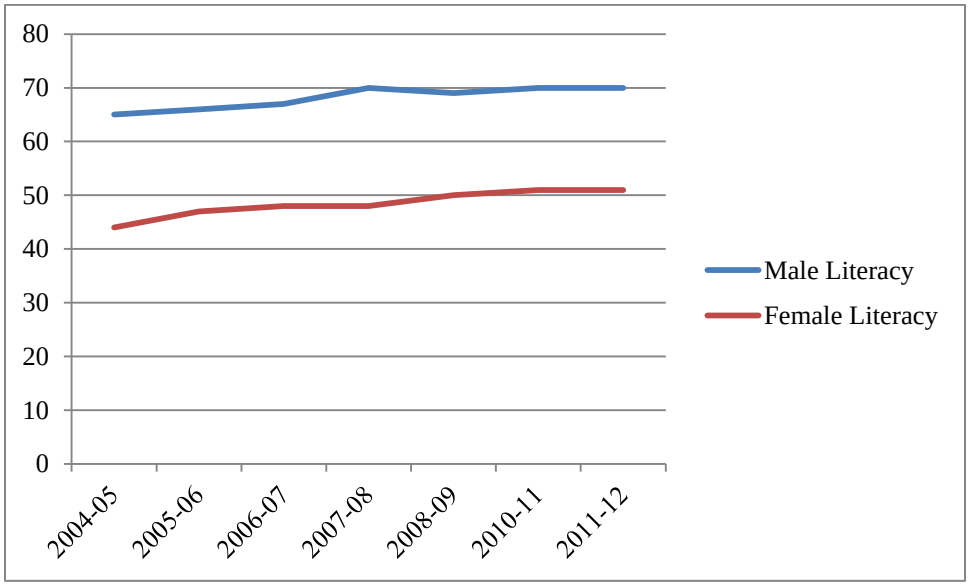
of staying at home. More educated, slightly older women might become unmarriageable in such areas mainly due to the misconception that educated wives are not capable of becoming good wives or daughter-in-laws. The stipend program was not able to impact marriage and fertility outcomes in a favourable manner due to these rigid societal and cultural norms, preferences and misconceptions.

As far as limitations of this study are concerned, Patron-Client dataset used has limited information about targeted household's socio-economic characteristics, almost none on parental characteristics. Moreover, limited information was collected on a sub-sample of the children in a household (two eldest and two youngest children currently residing).

These results could provide critical information for policy makers in assessing efficiency and effectiveness of such programs. However, the lessons learned would be that when programs show promising short or medium term impacts, there is no guarantee they will be sustained, and so long-term monitoring of program outcomes is important. It would be more feasible to focus on first getting girls through elementary school to make such programs attractive and effective at the same time. Moreover, further research might help to understand why the program's impacts diminished, and reasons behind unexpected results regarding marriage and fertility outcomes. It might be due to the fall in purchasing power of the stipend because of inflation, or there might be unintended consequences such as families finding it more difficult to marry their daughters when they have received more education or feeling pressure to marry their daughters earlier.

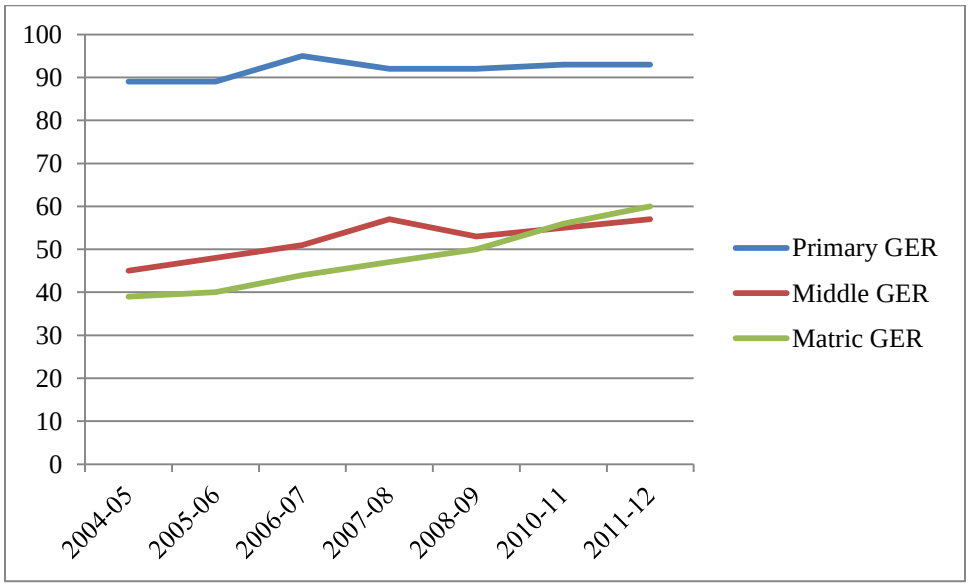
Appendices

Figure 1: Male and Female Literacy Rates in Punjab



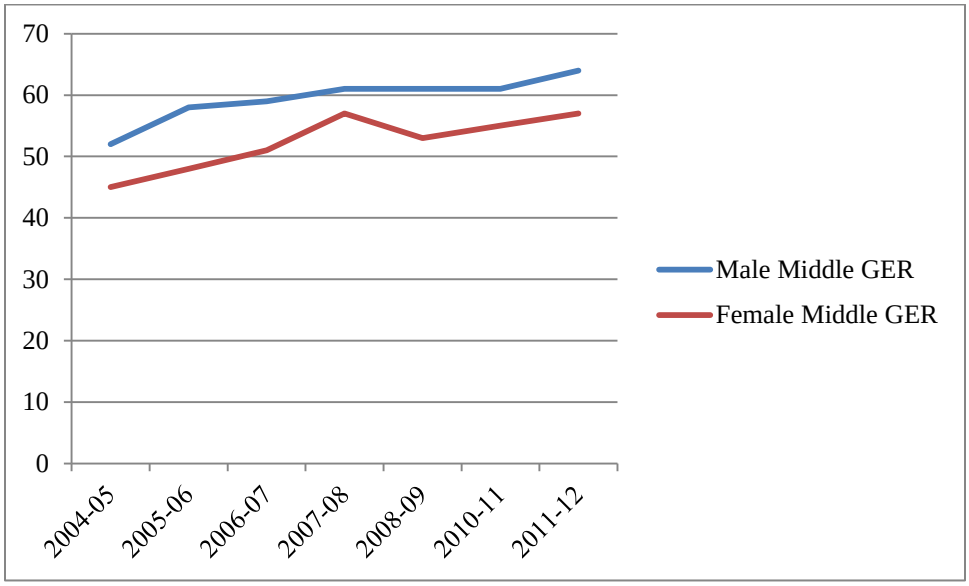
Source: Pakistan Bureau of Statistics (2012): Pakistan Social and Living Standards Measurement Survey (2004-12)

Figure 2: Female Gross Enrollment Rates (GER) in Punjab



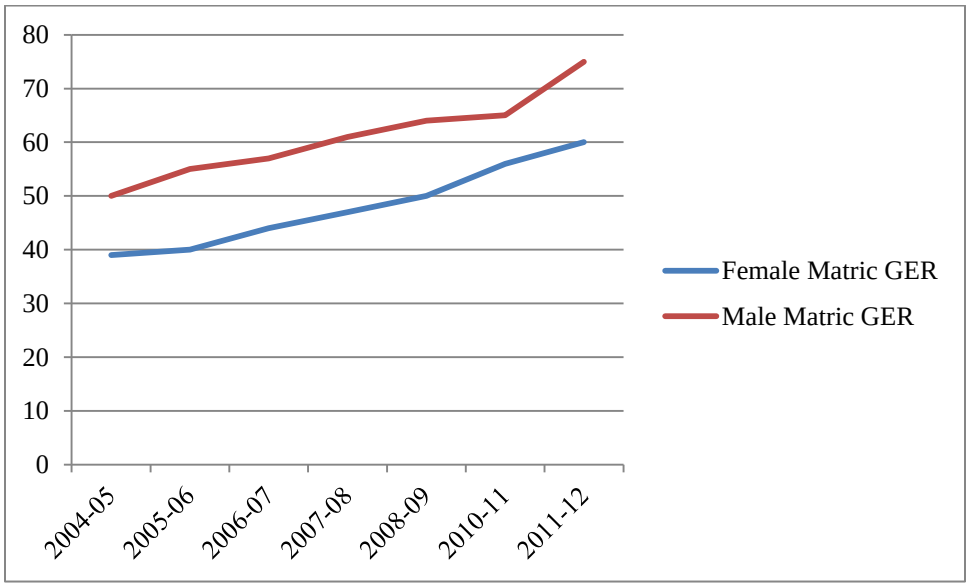
Source: Pakistan Bureau of Statistics (2012)

Figure 3: Male and Female Middle (Grades 6-8) Gross Enrollment Rates (GER) in Punjab



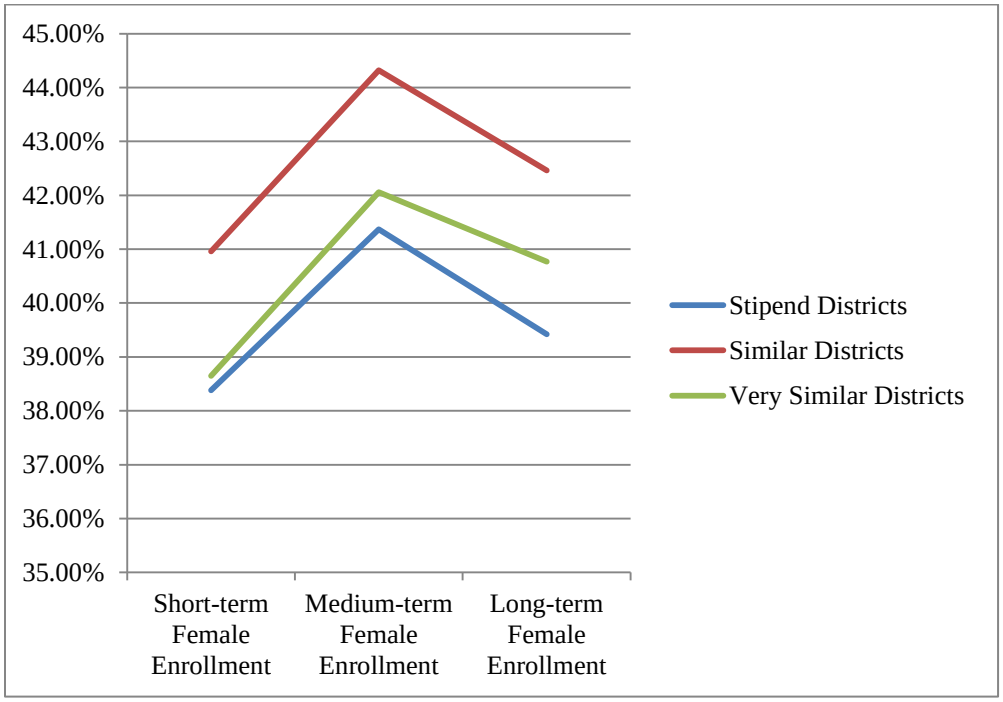
Source: Pakistan Bureau of Statistics (2012)

Figure 4: Male and Female Matric (Grades 8-10) Gross Enrollment Rates (GER) in Punjab



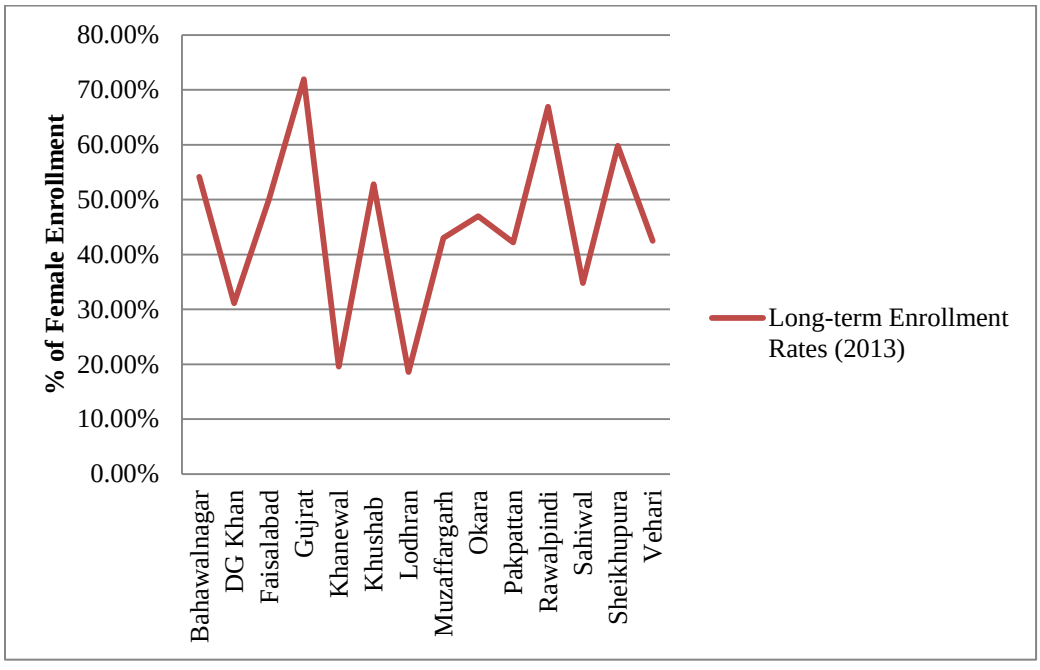
Source: Pakistan Bureau of Statistics (2012)

Figure 5: Female Enrollment rates (age 6-18 years)



Source: Patron-Client Dataset (2013)

Figure 6: District-Level Female Enrollment Rates



Source: Patron-Client Dataset (2013)

Table 1: Literacy Ratio Ranking of Punjab Districts (Age 10 years and above) Population Census, 1998

Districts	Literacy Ratio	Rank	Districts	Literacy Ratio	Rank
Rawalpindi	70.5 percent	1	Hafizabad	40.7 percent	18
Lahore	64.7 percent	2	Khushab	40.5 percent	19
Jhelum	63.9 percent	3	Khenewal	39.9 percent	20
Gujrat	62.2 percent	4	Layyah	38.7 percent	21
Sialkot	58.9 percent	5	Okara	37.8 percent	22
Chakwal	56.7 percent	6	Jhang	37.1 percent	23
Gujranwala	56.6 percent	7	Vehari	36.8 percent	24
Narowal	52.7 percent	8	Kasur	36.2 percent	25
Faisalabad	51.9 percent	9	Bahawalnagar	35.1 percent	26
T.T.Singh	50.5 percent	10	Bahawalpur	35.0 percent	27
Attock	49.3 percent	11	Pakpattan	34.7 percent	28
M.B.Din	47.4 percent	12	Bhakkar	34.2 percent	29
Sargodha	46.3 percent	13	R.Y.Khan	33.1 percent	30
Sahiwal	43.9 percent	14	D.G.Khan	30.6 percent	31
Sheikhupura	43.8 percent	15	Lodhran	29.9 percent	32
Multan	43.4 percent	16	MuzaffarGarh	28.5 percent	33
Mianwali	42.8 percent	17	Rajanpur	20.7 percent	34

Table 2: Impact of CCTs on School Enrollment and Attendance for different countries in various years

Country	Program	Scale	Eligibility criteria	Conditions	Transfer amount (percent of per capita expenditure)	Payment frequency	Evaluation method	Impact	Reference
Colombia	Familias en Accion´ (2001)	Nation-wide	8-13 years of age (both girls and boys)	Enrollment, attendance (80%)	17%	Bimonthly	Propensity Score Matching & Difference-in-Difference	2.1%**	Attanasio, Fitzsimmons & Gomez
Mexico	Oportunidades (2002)	Nation-wide	Grades 0-5 Grade 6 Grades 7-9	Attendance (85%)	20%	Bimonthly	Randomized	1.9% 8.7%*** 0.6%	Schultz (2004)
Cambodia	Japan Fund for Poverty Reduction Scholarship Program (2005)	Regional/ Narrow target audience	Grades 7-9 (girls)	Enrollment, Attendance and grade promotion	2-3%	Three times/ year	Difference-in-Difference	31.3%***	Filmer & Schady (2008)
Malawi		Small scale/ pilot	Primary and Secondary level	Attendance (80%)	-	Monthly	Linear Probability Model Fixed Effects Model	CCT arm-43% enrollment gain UCT arm-34% and 48% fall in pregnancy and marriage incidences	Baird, McIntosh & Ozler (2010)

Bangladesh	Female Secondary School Assistance Program (1994) Female Stipend Program (1994)	Regional/ Narrow target audience Regional/ Narrow target audience	11-18 years of age (girls) Grades 6-10 (girls)	Attendance (75%), academic proficiency and remain unmarried Attendance (75%), achieve 45% marks and remain unmarried	0.6% 0.6%	Monthly Monthly	Fixed Effects Model Fixed Effects Model	12.0%** 0%	Khandler, Pitt & Fuwa (2003) Heath & Mobarak (2012)
Pakistan	Punjab Education Sector Reform Program (2004) Female Secondary School Stipend Program (FSSSP)	Regional/ Narrow target audience Regional/ Narrow target	10-14 years of age (girls) 10-14 years of age (girls)	Attendance (80%) Attendance (80%)	3% 3%	Quarterly Quarterly	Triple difference strategy Triple difference strategy and regression discontinuity design	11.1%*** Enrollment 11-32% Middle school completion 3-6%	Chaudhry & Parajuli (2008) World Bank (2011)
Turkey	Social Risk Mitigation Project (2004)	Regional/ Narrow target audience	Primary level Secondary level	Attendance (80%) and not repeating a grade more than once	6%	Bimonthly	Triple Regression Discontinuity Design	-3%* 5.3%	Ahmed et al. (2007)

Table 3: Stipend and Non-Stipend Districts of Punjab covered in Patron-Client Project Dataset (2013)

Districts	Literacy Ratio	Rank	Districts	Literacy Ratio	Rank
Rawalpindi	70.5 percent	1	Hafizabad	40.7 percent	18
Lahore	64.7 percent	2	• **Khushab***	40.5 percent	19
Jhelum	63.9 percent	3	• **Khenewal ***	39.9 percent	20
Gujrat	62.2 percent	4	Layyah	38.7 percent	21
Sialkot	58.9 percent	5	• **Okara***	37.8 percent	22
Chakwal	56.7 percent	6	Jhang	37.1 percent	23
Gujranwala	56.6 percent	7	• **Vehari***	36.8 percent	24
Narowal	52.7 percent	8	Kasur	36.2 percent	25
Faisalabad	51.9 percent	9	• **Bahawalnagar**	35.1 percent	26
T.T.Singh	50.5 percent	10	Bahawalpur	35.0 percent	27
Attock	49.3 percent	11	• **Pakpattan**	34.7 percent	28
M.B.Din	47.4 percent	12	Bhakkar	34.2 percent	29
Sargodha	46.3 percent	13	R.Y.Khan	33.1 percent	30
• **Sahiwal***	43.9 percent	14	**D.G.Khan**	30.6 percent	31
• **Sheikhupura***	43.8 percent	15	**Lodhran**	29.9 percent	32
Multan	43.4 percent	16	**MuzaffarGarh**	28.5 percent	33
Mianwali	42.8 percent	17	Rajanpur	20.7 percent	34

- Similar Districts
- Very Similar Districts*

Table 4: Summary statistics of key variables in enrollment regressions

	Stipend Districts	Non-Stipend Districts	Similar Districts	Very Similar Districts
Total number of observations for females	17952	6819	15552	9984
Total number of observations for males	2749	1140	2536	1528
Average age for females	10.30 years	10.38 years	10.30 years	10.30 years
Percentage of age eligible females	85.96%	73.29%	83.19%	83.31%
Percentage of females with primary education	11.97%	20.46%	12.67%	12.46%
Percentage of females enrolled pre-2003 aged (6-18 years)	36.96%	55.75%	39.40%	37.19
Percentage of males enrolled pre-2003 aged (5-14 years)	-	-	-	-
Percentage of females enrolled post-2003 aged (6-18 years)	40.41%	53.54%	43.80%	42.34%
Percentage of males enrolled post-2003 aged (5-14 years)	55.27%	64.47%	59.61%	57.24%
Percentage of Female Short-term Enrollment (till 2006)	38.38%	55.33%	40.96%	38.65%
Percentage of Female Medium-term Enrollment (till 2009)	41.37%	56.25%	44.32%	42.06%
Percentage of Female Long-term Enrollment (till 2013)	39.42%	54.42%	42.46%	40.77%

Table 5: Summary statistics of key variables in completion regressions

	Stipend Districts	Non-Stipend Districts	Similar Districts	Very Similar Districts
Percentage of Females with middle school education	19.61%	36.52%	19.92%	19.81%
Percentage of Females with high school education	8.82%	16.57%	8.32%	8.25%
Average completed years of school for females	4.38 years	6.07 years	4.7 years	4.48 years

Table 6: Summary statistics of key variables in marriage and fertility regressions

	Stipend Districts	Non-Stipend Districts	Stipend Districts	Very Similar Districts
Number of Females aged 12-30 years	1217	437	1030	663
Female age on average (12-30 years)	18.22 years	20.34 years	18.63 years	18.61 years
Percentage of females with primary education	32.50%	54.27%	34.58%	33.74%
Percentage of females eligible for stipend program	85.71%	71.86%	82.99%	83.23%
Percentage of Married Females	21.08%	31.46%	23.52%	23.70%
Average age at time of marriage	17.77 years	20.33 years	18.29 years	18.46 years
Average years of marriage	5.18 years	4.92 years	5.17 years	5.16 years
Average age at time of first child	19.67 years	21.55 years	20.18 years	20.30 years
Percentage of married females having at least one child	67.07%	67.91%	62.39%	68.21%

Table 7: Impact of FSSSP on Long-term Enrollment (2003-2013) of Girls between ages 6-18 years

	LPM (Stipend and Non-Stipend)		FE (Stipend and Non-Stipend)	FE (Stipend)
	(1)	(2)	(3)	(4)
Dependent variable	Long-term Enroll w/o districts	Long-term Enroll with districts	Long-term Enroll in all districts	Long-term Enroll in stipend districts
Stipend	0.00270	0.137**		
	(0.00333)	(0.0636)		
AgeEligible	-0.0190	0.0153	0.0206	-0.00127
	(0.0345)	(0.0346)	(0.0459)	(0.0234)
InSchool6years	0.643***	0.566***	0.290***	0.243***
	(0.0455)	(0.0439)	(0.0503)	(0.0578)
Stipend x AgeEligible	-0.106**	-0.103**	-0.0376	
	(0.0496)	(0.0496)	(0.0561)	
InSchool6years x AgeEligible	-0.0172	-0.0761	-0.0104	0.0144
	(0.0536)	(0.0521)	(0.0536)	(0.0559)
InSchool6years x Stipend	0.0668	0.106	-0.0307	
	(0.0681)	(0.0677)	(0.0725)	
Stipend x AgeEligible x Age	0.00295	0.00116	0.000557	
	(0.00370)	(0.00387)	(0.00411)	
InSchool6years x AgeEligible x Stipend	0.00270	0.0615	0.0208	
	(0.0728)	(0.0732)	(0.0780)	
Observations	24,097	24,097	24,097	17,466
R-squared	0.396	0.428	0.372	0.343
Number of HHs			760	523

LPM Regressions include controls for year dummies (1988-2013), Stipend × year dummies, Age dummies (6-18 years) and official relation dummy. District dummies are included for Column 2 only. FE Regressions (Stipend and Non-Stipend) include year FE (1988-2013), Stipend × year FE and Age FE (6-18 years). FE Regressions (Stipend) include year FE (1988-2013) and Age FE (6-18 years).
*All regression results are adjusted by sampling weights based on number of households with political connections in the census compared to sample. Robust standard errors in parentheses, clustered at level of household for FE Regressions. *** p<0.01, ** p<0.05, * p<0.1*

Table 8: Impact of FSSSP on Medium-term Enrollment (2003-2009) of Girls between ages 6-18 years

	LPM (Stipend and Non-Stipend)		FE (Stipend and Non-Stipend)			FE (Stipend)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	Medium-term Enroll w/o districts	Medium-term Enroll with districts	Medium-term Enroll in all districts	Medium-term Enroll in similar districts	Medium-term Enroll in very similar districts	Medium-term Enroll in stipend districts	Medium-term Enroll in similar stipend districts	Medium-term Enroll in very similar stipend districts
Stipend	0.00307	0.146*						
	(0.00378)	(0.0760)						
AgeEligible	0.0170	0.0304	0.0231	0.0118	0.00503	0.00732	-0.0118	-0.00295
	(0.0424)	(0.0398)	(0.0508)	(0.0737)	(0.0764)	(0.0275)	(0.0330)	(0.0505)
InSchool6years	0.649***	0.559***	0.289***	0.343***	0.336***	0.232***	0.213***	0.150*
	(0.0449)	(0.0442)	(0.0510)	(0.120)	(0.121)	(0.0572)	(0.0651)	(0.0833)
Stipend x AgeEligible	-0.0101	-0.00637	0.0403	0.0887	0.0584			
	(0.0476)	(0.0496)	(0.0610)	(0.0834)	(0.0967)			
InSchool6years x AgeEligible	0.0163	-0.0425	0.0217	0.0576	0.0533	0.0763	0.0948	0.124
	(0.0578)	(0.0567)	(0.0535)	(0.119)	(0.119)	(0.0570)	(0.0671)	(0.0919)
InSchool6years x Stipend	0.0622	0.114*	-0.0494	-0.140	-0.184			
	(0.0670)	(0.0675)	(0.0718)	(0.134)	(0.144)			
Stipend x AgeEligible x Age	-0.0105**	-0.0105**	-0.00805*	-0.0105*	-0.00701			
	(0.00411)	(0.00410)	(0.00455)	(0.00601)	(0.00780)			
InSchool6years x AgeEligible x Stipend	0.107	0.161**	0.0810	0.0669	0.0987			
	(0.0756)	(0.0763)	(0.0783)	(0.136)	(0.147)			
Observations	17,845	17,845	17,845	11,052	7,090	12,684	8,569	4,607
R-squared	0.381	0.422	0.414	0.422	0.396	0.380	0.422	0.385
Number of HHs			760	479	306	523	362	189

LPM Regressions include controls for year dummies (1988-2009), Stipend × year dummies, Age dummies (6-18 years) and official relation dummy. District dummies are included for Column 2 only. FE Regressions (Stipend and Non-Stipend) include year FE (1988-2009), Stipend × year FE and Age FE (6-18 years). FE Regressions (Stipend) include year FE (1988-2009) and Age FE (6-18 years).
*All regression results are adjusted by sampling weights based on number of households with political connections in the census compared to sample. Robust standard errors in parentheses, clustered at level of household for FE Regressions. *** p<0.01, ** p<0.05, * p<0.1*

Table 9: Impact of FSSSP on Short-term Enrollment (2003-2006) of Girls between ages 6-18 years

	LPM (Stipend and Non-Stipend)		FE (Stipend and Non-Stipend)			FE (Stipend)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	Short-term Enroll w/o districts	Short-term Enroll with districts	Short-term Enroll in all districts	Short-term Enroll in similar districts	Short-term Enroll in very similar districts	Short-term Enroll in stipend districts	Short-term Enroll in similar stipend districts	Short-term Enroll in very similar stipend districts
Stipend	0.00323	-0.114						
	(0.00398)	(0.0900)						
AgeEligible	0.0362	0.0243	0.00917	-0.00343	0.0112	0.0123	-0.0222	0.000826
	(0.0530)	(0.0495)	(0.0603)	(0.0799)	(0.0841)	(0.0328)	(0.0376)	(0.0588)
InSchool6years	0.645***	0.544***	0.286***	0.330***	0.322**	0.196***	0.173**	0.0941
	(0.0457)	(0.0454)	(0.0539)	(0.124)	(0.126)	(0.0600)	(0.0683)	(0.0853)
Stipend x AgeEligible	0.0121	0.00716	0.0491	0.00526	0.0110			
	(0.0491)	(0.0517)	(0.0651)	(0.0882)	(0.102)			
InSchool6years x AgeEligible	0.106*	0.0421	0.0994*	0.179	0.165	0.162***	0.185**	0.203*
	(0.0631)	(0.0610)	(0.0546)	(0.112)	(0.112)	(0.0588)	(0.0723)	(0.107)
InSchool6years x Stipend	0.0697	0.134**	-0.0715	-0.158	-0.221			
	(0.0660)	(0.0669)	(0.0742)	(0.138)	(0.147)			
Stipend x AgeEligible x Age	-0.0130**	-0.0107**	-0.00907	-0.00236	-0.00299			
	(0.00551)	(0.00535)	(0.00580)	(0.00705)	(0.00880)			
InSchool6years x AgeEligible x Stipend	0.118	0.167**	0.0971	0.0171	0.0625			
	(0.0812)	(0.0802)	(0.0821)	(0.132)	(0.147)			
Observations	12,546	12,546	12,546	7,685	4,934	8,662	5,933	3,182
R-squared	0.362	0.410	0.421	0.423	0.399	0.389	0.429	0.396
Number of HHs			725	459	291	505	350	182

LPM Regressions include controls for year dummies (1988-2006), Stipend × year dummies, Age dummies (6-18 years) and official relation dummy. District dummies are included for Column 2 only. FE Regressions (Stipend and Non-Stipend) include year FE (1988-2006), Stipend × year FE and Age FE (6-18 years). FE Regressions (Stipend) include year FE (1988-2006) and Age FE (6-18 years).
*All regression results are adjusted by sampling weights based on number of households with political connections in the census compared to sample. Robust standard errors in parentheses, clustered at level of household for FE Regressions. *** p<0.01, ** p<0.05, * p<0.1*

Table 10: Impact of FSSSP on Completion of Middle School (6-8 grades)

	LPM (Stipend and Non-Stipend)				FE (Stipend and Non-Stipend)			FE (Stipend)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	Middle complete w/o districts	Middle complete with districts	Middle complete in similar districts	Middle complete in very similar districts	Middle complete in all districts	Middle complete in similar districts	Middle complete in very similar districts	Middle complete in stipend districts
Stipend	-0.00460	0.0482	-0.000141	-0.00338				
	(0.00674)	(0.0607)	(0.00570)	(0.0104)				
Stipend x Age					-0.0133	-0.00557	-0.00603	
					(0.0110)	(0.0110)	(0.0120)	
AgeEligible	0.0271	0.00442	0.0292	-0.00703	0.0604	0.0331	0.00852	-0.0245
	(0.0341)	(0.0388)	(0.0411)	(0.0493)	(0.0928)	(0.0998)	(0.0993)	(0.0453)
Stipend x AgeEligible	0.0125	0.0211	-3.47e-05	0.00350	-0.120	-0.0699	-0.0920	
	(0.0101)	(0.0250)	(0.00843)	(0.0124)	(0.103)	(0.116)	(0.124)	
InSchool6years	0.715***	0.680***	0.565***	0.573***	0.511***	0.564**	0.571**	0.526***
	(0.0868)	(0.0858)	(0.173)	(0.173)	(0.127)	(0.245)	(0.239)	(0.112)
InSchool6years x AgeEligible	-0.124	-0.112	-0.0176	-0.0241	-0.0150	-0.0184	-0.0264	-0.0938
	(0.0948)	(0.0894)	(0.195)	(0.194)	(0.117)	(0.246)	(0.240)	(0.102)
InSchool6years x Stipend	0.0533	0.0785	0.130	0.130	0.0108	-0.0489	-0.0822	
	(0.126)	(0.124)	(0.207)	(0.240)	(0.170)	(0.280)	(0.296)	
InSchool6years x AgeEligible x Stipend	-0.0863	-0.0970	-0.135	-0.111	-0.0746	-0.0469	-0.0373	
	(0.134)	(0.129)	(0.228)	(0.256)	(0.156)	(0.276)	(0.286)	
Observations	1,506	1,506	934	607	1,506	934	607	1,093
R-squared	0.516	0.527	0.479	0.497	0.241	0.257	0.282	0.200
Number of HHs					680	427	272	473

LPM Regressions include controls for age, age^2, official relation dummy. District dummies are included for Column 2 only.
FE Regressions (Stipend and Non-Stipend) include controls for age and age^2. FE Regression (Stipend) include controls for age and age^2.
All regression results are adjusted by sampling weights based on number of households with political connections in the census compared to sample.
*Robust standard errors in parentheses, clustered at level of household for FE Regressions. *** p<0.01, ** p<0.05, * p<0.1*

Table 11: Impact of FSSSP on Completion of High School (8-10 grades)

	LPM (Stipend and Non-Stipend)				FE (Stipend and Non-Stipend)			FE (Stipend)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	High complete w/o districts	High complete with districts	High complete in similar districts	High complete in very similar districts	High complete with all districts	High complete in similar districts	High complete in very similar districts	High complete in stipend districts
Stipend	-0.00100	-0.00331	-0.000909	-0.00239				
	(0.00321)	(0.0504)	(0.00199)	(0.00623)				
Stipend x Age					-0.0103	-0.000731	0.00237	
					(0.0139)	(0.00772)	(0.00970)	
AgeEligible	0.0290	0.0352	0.00948	-0.0171	0.0316	-0.0726	-0.0744	0.0225
	(0.0355)	(0.0381)	(0.0371)	(0.0402)	(0.0889)	(0.0634)	(0.0646)	(0.0434)
Stipend x AgeEligible	0.00893*	-0.0237	0.00375	0.00726	-0.0402	0.0777	0.0641	
	(0.00497)	(0.0192)	(0.00337)	(0.00739)	(0.102)	(0.0790)	(0.0825)	
InSchool6years	0.447***	0.388***	0.225*	0.229*	0.123	-0.142	-0.141	0.114
	(0.0986)	(0.0860)	(0.136)	(0.137)	(0.123)	(0.152)	(0.153)	(0.135)
InSchool6years x AgeEligible	-0.234**	-0.276***	-0.0796	-0.0839	-0.0395	0.409*	0.407	0.0426
	(0.0985)	(0.0948)	(0.160)	(0.161)	(0.156)	(0.247)	(0.249)	(0.128)
InSchool6years x Stipend	-0.122	-0.0679	-0.0430	-0.0868	-0.0108	0.119	0.0215	
	(0.134)	(0.123)	(0.156)	(0.157)	(0.182)	(0.208)	(0.216)	
InSchool6years x AgeEligible x Stipend	0.129	0.174	0.108	0.188	0.0855	-0.248	-0.182	
	(0.138)	(0.134)	(0.181)	(0.184)	(0.201)	(0.278)	(0.283)	
Observations	1,155	1,155	708	454	1,155	708	454	811
R-squared	0.219	0.264	0.159	0.181	0.049	0.079	0.099	0.039
Number of HHs					611	380	243	419

LPM Regressions include controls for age, age^2, official relation dummy. District dummies are included for Column 2 only.
FE Regressions (Stipend and Non-Stipend) include controls for age and age^2. FE Regression (Stipend) include controls for age and age^2.
All regression results are adjusted by sampling weights based on number of households with political connections in the census compared to sample.
*Robust standard errors in parentheses, clustered at level of household for FE Regressions. *** p<0.01, ** p<0.05, * p<0.1*

Table 12: Total Impact of FSSSP on Completion of Middle School (without prerequisite of primary education)

	LPM (Stipend and Non-Stipend)				FE (Stipend and Non-Stipend)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable	Middle complete w/o districts	Middle complete with districts	Middle complete in similar districts	Middle complete in very similar districts	Middle complete in all districts	Middle complete in similar districts	Middle complete in very similar districts
Stipend	-0.163**	0.101	0.0592	0.0865			
	(0.0728)	(0.102)	(0.0611)	(0.0850)			
Stipend x Age					-0.0164	-0.0209*	-0.0262**
					(0.0116)	(0.0116)	(0.0129)
AgeEligible	-0.0260	-0.0158	0.0604	0.0761	0.0843	0.151	0.112
	(0.0873)	(0.0779)	(0.0873)	(0.0986)	(0.117)	(0.141)	(0.145)
Stipend x AgeEligible	0.0412	-0.00284	-0.0212	-0.0377	-0.162	-0.209	-0.245
	(0.0739)	(0.0657)	(0.0722)	(0.0924)	(0.126)	(0.155)	(0.167)
Observations	1,506	1,506	934	607	1,506	934	607
R-squared	0.048	0.138	0.019	0.022	0.026	0.011	0.022
Number of HHs					680	427	272

LPM Regressions include controls for age, age^2, official relation dummy. District dummies are included for Column 2 only.
FE Regressions (Stipend and Non-Stipend) include controls for age and age^2.
All regression results are adjusted by sampling weights based on number of households with political connections in the census compared to sample.
*Robust standard errors in parentheses, clustered at level of household for FE Regressions. *** p<0.01, ** p<0.05, * p<0.1*

Table 13: Total Impact of FSSSP on Completion of High School (without prerequisite of primary education)

	LPM (Stipend and Non-Stipend)				FE (Stipend and Non-Stipend)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable	High complete w/o districts	High complete with districts	High complete in similar districts	High complete in very similar districts	High complete in all districts	High complete in similar districts	High complete in very similar districts
Stipend	-0.136**	-0.0429	0.000690	-0.00407			
	(0.0608)	(0.0667)	(0.0328)	(0.0358)			
Stipend x Age					-0.0124	-0.00891	-0.00578
					(0.0136)	(0.00844)	(0.00983)
AgeEligible	-0.0788	-0.102*	0.0104	0.00149	0.0194	0.0691	0.0623
	(0.0642)	(0.0604)	(0.0558)	(0.0595)	(0.0944)	(0.0763)	(0.0747)
Stipend x AgeEligible	0.0986*	0.0910*	0.0332	0.0539	-0.0168	-0.0172	-0.000742
	(0.0584)	(0.0550)	(0.0410)	(0.0447)	(0.108)	(0.101)	(0.120)
Observations	1,155	1,155	708	454	1,155	708	454
R-squared	0.036	0.128	0.016	0.022	0.024	0.024	0.025
Number of HHs					611	380	243

LPM Regressions include controls for age, age^2, official relation dummy. District dummies are included for Column 2 only.
FE Regressions (Stipend and Non-Stipend) include controls for age and age^2.
All regression results are adjusted by sampling weights based on number of households with political connections in the census compared to sample.
*Robust standard errors in parentheses, clustered at level of household for FE Regressions. *** p<0.01, ** p<0.05, * p<0.1*

Table 14: Impact of FSSSP on Completion of Middle School (6-8 grades) and High School (8-10 grades) on girls with primary years of schooling

	LPM (Stipend and Non-Stipend)		FE (Stipend and Non-Stipend)	LPM (Stipend and Non-Stipend)		FE (Stipend and Non-Stipend)
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Middle complete w/o districts	Middle complete with districts	Middle complete in all districts	High complete w/o districts	High complete with districts	High complete in all districts
Stipend	0.0216	0.306		-0.130	0.0153	
	(0.123)	(0.257)		(0.131)	(0.242)	
Stipend x Age			0.00633			-0.0311
			(0.0277)			(0.0353)
AgeEligible	-0.122	-0.152	-0.0740	-0.184	-0.277**	-0.0110
	(0.118)	(0.114)	(0.195)	(0.132)	(0.124)	(0.208)
Stipend x AgeEligible	-0.0238	-0.0228	-0.00940	0.156	0.172	0.0264
	(0.131)	(0.124)	(0.263)	(0.138)	(0.130)	(0.275)
Observations	607	607	607	463	463	463
R-squared	0.118	0.164	0.086	0.057	0.142	0.084
Number of HHs			324			277

LPM Regressions include controls for age, age^2, official relation dummy. District dummies are included for Column 2 only.
FE Regressions (Stipend and Non-Stipend) include controls for age and age^2.
All regression results are adjusted by sampling weights based on number of households with political connections in the census compared to sample.
*Robust standard errors in parentheses, clustered at level of household for FE Regressions. *** p<0.01, ** p<0.05, * p<0.1*

Table 15: Impact of Female Secondary School Stipend Program on Probability of Getting Married before age 16

	LPM (Stipend and Non-Stipend)				FE (Stipend and Non-Stipend)			FE (Stipend)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	Married before 16 w/o districts	Married before 16 with districts	Married before 16 in similar districts	Married before 16 in very similar districts	Married before 16 in all districts	Married before 16 in similar districts	Married before 16 in very similar districts	Married before 16 within stipend districts
Stipend	0.0788**	0.203**	0.0897***	0.128**				
	(0.0381)	(0.0810)	(0.0308)	(0.0520)				
Stipend x Age					0.0205**	0.0383**	0.0415**	
					(0.00823)	(0.0167)	(0.0180)	
AgeEligible	-0.00702	-0.00674	0.0764	0.0808	-0.0440	-0.0895	-0.0846	-0.0702
	(0.0496)	(0.0502)	(0.0490)	(0.0581)	(0.0466)	(0.0768)	(0.0770)	(0.0490)
AgeEligible x Stipend	-0.0634	-0.0608	-0.0691	-0.115*	-0.0228	0.101	0.0684	
	(0.0509)	(0.0526)	(0.0512)	(0.0642)	(0.0661)	(0.0879)	(0.104)	
InSchool6years	0.00119	-0.000636	0.0142	0.00738	0.0368	-0.00391	-0.00641	-0.168**
	(0.0315)	(0.0328)	(0.0123)	(0.0169)	(0.0343)	(0.0818)	(0.0814)	(0.0785)
InSchool6Years x AgeEligible	-0.0781*	-0.0713	-0.0982***	-0.0947**	-0.110*	-0.0633	-0.0587	0.111
	(0.0438)	(0.0466)	(0.0374)	(0.0392)	(0.0592)	(0.0788)	(0.0810)	(0.0700)
InSchool6Years x Stipend	-0.120***	-0.138***	-0.109***	-0.142**	-0.205**	-0.117	-0.162	
	(0.0463)	(0.0497)	(0.0385)	(0.0609)	(0.0853)	(0.116)	(0.154)	
InSchool6Years x AgeEligible x Stipend	0.144**	0.139**	0.142**	0.208***	0.221**	0.164	0.255*	
	(0.0589)	(0.0619)	(0.0565)	(0.0744)	(0.0916)	(0.117)	(0.148)	
Observations	1,127	1,127	690	441	1,127	690	441	792
R-squared	0.029	0.052	0.023	0.029	0.051	0.050	0.068	0.034
Number of HHs					599	372	239	411

OLS Regressions include controls for age, age^2, official relation dummy. District dummies are included for Column 2 only. FE Regressions (Stipend and Non-Stipend) include controls for age and age^2. FE Regressions (Stipend) include controls for age and age^2.
*All regression results are adjusted by sampling weights based on number of households with political connections in the census compared to sample. Robust standard errors in parentheses, clustered at level of household for FE Regressions. *** p<0.01, ** p<0.05, * p<0.1*

Table 16: Impact of Female Secondary School Stipend Program on Probability of Getting Married before age 18

	LPM (Stipend and Non-Stipend)				FE (Stipend and Non-Stipend)			FE (Stipend)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	Married before 18 w/o districts	Married before 18 with districts	Married before 18 in similar districts	Married before 18 in very similar districts	Married before 18 in all districts	Married before 18 in similar districts	Married before 18 in very similar districts	Married before 18 within stipend districts
Stipend	0.101	0.0953	0.106	0.129				
	(0.0632)	(0.0790)	(0.0736)	(0.0850)				
Stipend x Age					0.0393**	0.0422*	0.0305	
					(0.0166)	(0.0242)	(0.0260)	
AgeEligible	-0.0437	-0.0653	0.0326	-0.0245	-0.184**	-0.211	-0.211	-0.0484
	(0.0714)	(0.0737)	(0.0935)	(0.102)	(0.0881)	(0.141)	(0.141)	(0.0731)
AgeEligible x Stipend	-0.0509	-0.0203	-0.0518	-0.0772	0.139	0.152	0.0453	
	(0.0719)	(0.0778)	(0.0871)	(0.0984)	(0.113)	(0.167)	(0.205)	
InSchool6years	-0.0888*	-0.109**	-0.0844	-0.0750	-0.0370	-0.0702	-0.0701	-0.185*
	(0.0505)	(0.0531)	(0.0622)	(0.0658)	(0.0373)	(0.0668)	(0.0687)	(0.104)
InSchool6Years x AgeEligible	-0.0108	0.0188	-0.0632	-0.0747	-0.00433	0.0544	0.0542	0.213**
	(0.0631)	(0.0703)	(0.0729)	(0.0731)	(0.0630)	(0.0751)	(0.0735)	(0.105)
InSchool6Years x Stipend	-0.142**	-0.140*	-0.129	-0.168*	-0.146	-0.157	-0.272	
	(0.0692)	(0.0749)	(0.0819)	(0.101)	(0.111)	(0.143)	(0.227)	
InSchool6Years x AgeEligible x Stipend	0.161*	0.124	0.208**	0.305**	0.217*	0.205	0.358*	
	(0.0862)	(0.0933)	(0.0977)	(0.119)	(0.123)	(0.150)	(0.203)	
Observations	904	904	554	350	904	554	350	624
R-squared	0.039	0.063	0.029	0.038	0.037	0.044	0.070	0.023
Number of HHs					522	326	208	359

OLS Regressions include controls for age, age^2 and official relation dummy. District dummies are included for Column 2 only. FE Regressions (Stipend and Non-Stipend) include controls for age and age^2. FE Regressions (Stipend) include controls for age and age^2.
*All regression results are adjusted by sampling weights based on number of households with political connections in the census compared to sample. Robust standard errors in parentheses, clustered at level of household for FE Regressions. *** p<0.01, ** p<0.05, * p<0.1*

Table 17: Effects of Female Secondary School Stipend Program on Number of children and Age at time of First Child

	LPM (Stipend and Non-Stipend)		FE (Stipend and Non-Stipend)	FE (Stipend)	LPM (Stipend and Non-Stipend)		FE (Stipend and Non-Stipend)	FE (Stipend)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	No. of Kids w/o districts	No. of Kids with districts	No. of Kids with districts	No. of Kids in stipend districts	Age at first child w/o districts	Age at first child with districts	Age at first child with districts	Age at first child in stipend districts
Year of Marriage	-0.264***	-0.264***	-0.256***	-0.200***	0.261***	0.245***	0.108	-0.0875
	(0.0304)	(0.0294)	(0.0428)	(0.0551)	(0.0681)	(0.0621)	(0.124)	(0.119)
Stipend	0.0126	0.0327			-0.987	0.866		
	(0.257)	(0.394)			(0.599)	(1.142)		
Stipend x Age			0.128				0.475***	
			(0.105)				(0.171)	
AgeEligible	-0.178	-0.261	-0.216	0.0758	-5.097***	-5.587***	-4.933***	-1.184
	(0.335)	(0.389)	(0.649)	(0.324)	(0.981)	(0.887)	(1.677)	(0.877)
AgeEligible x Stipend	0.199	0.272	0.292		1.616	1.849*	5.241***	
	(0.342)	(0.385)	(0.737)		(1.090)	(0.979)	(1.782)	
InSchool6years	-0.130	-0.252	0.00125	-0.847	1.267*	2.201***	-0.776	2.802*
	(0.272)	(0.256)	(0.441)	(0.577)	(0.691)	(0.696)	(0.928)	(1.532)
InSchool6Years x AgeEligible	0.220	0.250	-0.585	1.188**	-0.261	0.572	1.149	-2.991***
	(0.388)	(0.464)	(0.570)	(0.540)	(1.295)	(1.342)	(1.829)	(0.990)
InSchool6Years x Stipend	-0.0868	-0.0905	-0.679		1.374	0.787	0.595	
	(0.438)	(0.379)	(0.667)		(1.193)	(1.181)	(1.622)	
InSchool6Years x AgeEligible x Stipend	-0.0637	-0.0638	1.660**		-2.087	-2.865	-1.441	
	(0.542)	(0.573)	(0.741)		(1.785)	(1.769)	(1.745)	
Observations	372	372	372	241	253	253	253	162
R-squared	0.487	0.522	0.522	0.439	0.442	0.510	0.384	0.158
Number of HHs			247	159			188	118

Kids OLS Regressions include controls for age, age^2 and official relation dummy. District dummies are included for Column 2 only. Age at first child OLS Regressions include control for official relation dummy. District dummies are included for Column 6 only. Kids FE Regressions (Stipend and Non-Stipend) include controls for age and age^2. Kids FE Regressions (Stipend) include controls for age and age^2.
*All regression results are adjusted by sampling weights based on number of households with political connections in the census compared to sample. Robust standard errors in parentheses, clustered at level of household for FE Regressions. *** p<0.01, ** p<0.05, * p<0.1*

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