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Gender Socialisation among Pakistani Preadolescents and Adolescents

Zehra Aftab

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Preadolescents and Adolescents**

Zehra Aftab

Faculty Fellow, American University.

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Pakistan Institute of Development Economics
Islamabad, Pakistan

E-mail: publications@pide.org.pk

Website: <http://www.pide.org.pk>

Fax: +92-51-9248065

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ABSTRACT

The paper aims to learn more about how the lives of enrolled children is different from non-students. Findings show that while girls and boys are substituting unpaid and paid work respectively for the gender neutral activity of learning, there is no evidence to show that school enrolment changes the patterns of gender roles as girls continue to perform more care work and public arenas remain a heavily masculinised space.

Keywords:

1. INTRODUCTION

This paper aims to learn more about how the lives of enrolled boys and girls are different from those who do not ever make it to school or dropout. Using the Pakistani Time-Use Survey (TUS) 2007, I specifically investigate if becoming a student is associated with similarities in the composition of the matrix of activities performed by boys and girls during the day, and their respective location context, thereby changing their socialisation experience. I study whether, school enrolment is associated with a change in how much time boys and girls spend in public spaces, such as public parks or libraries. I also investigate if this new pattern is gender differentiated. The premise of this study is that if boys and girls' activities become similar, their socialisation becomes more similar.

Although there are papers on Pakistani time use which consider the impact of schooling, they mainly focus on the trade-off between learning and work (both paid and unpaid) (Ritchie et al. 2004, Mete et al. 2012, and Lloyd et al. 2004). These studies confirm that schooling is associated with declines in household work and market work, and the attenuation of gender differences among adolescents. However, these papers either only focus on weekdays or do not differentiate between weekdays and weekends. Hence, the findings of these studies are influenced by the structure that school provides and there is thus a significant endogeneity problem with these studies. There is a need to further investigate these initial findings: we mitigate issues of endogeneity by mainly focusing on time use patterns for the weekend when students are less constrained by the institutional structure of the school, and there is more choice in terms of how they spend their time; I investigate how their time-use activities are similar to the activities of non-students and whether the gender differences in activities among boys and girls are lower among students.

Moreover, to investigate the role of space, I explore how girls' and boys' time in different geographical locations differs (or not). Unfortunately, due to limited observations for the weekend, it is only possible to disaggregate the data by location for weekdays. Location data indicates if the episode took place within one's own dwelling, other's dwelling, educational institute, or public arena, thus placing the particular activity/episode within a social context. I specifically investigate if schooling is associated with boys and girls spending more time in the public sphere which may, in turn, affect socialisation.

I find that enrolment in school is strongly associated with different use of time on weekends, with girls and boys spending more time on the gender neutral task of learning as a result of time-substitution away from paid and unpaid work. However, I do not find any evidence of school enrolment being associated with boys performing more care work and hence breaking traditional norms associated with gender division of labour. Moreover, looking at location data I find that the public arena remains a heavily male-dominated space, and school enrolment status is not associated with increased gender balance in these spaces: attending school does not necessarily manifest in a greater presence of girls in other public spaces.

2. LITERATURE REVIEW

2.1. Socialisation toward Gender Identity

The term ‘socialisation’ is used to describe the process through which the child becomes an individual conforming to his or her environment’s laws, norms and customs (Vuorinen & Tuunala, 1997, p. 45, as cited in Crespi, 2003). Gender socialisation is a more focused form of socialisation: it is how children of different sexes are socialised into their gender roles. Crudely put, children are inculcated with beliefs about what it means to “become a woman” (De Beauvoir, 1949) or, for that matter, a man.¹

Through social learning, children learn behaviours that are expected of their sex; through observing same sex parents/elders and by observing their peers. Field research in developing countries suggests that girls tend to spend a lot more time with older women than boys do with older men. Boys also spend time with older men, work with their fathers, and other men, but they are not fully incorporated within a men’s group. In contrast, girls are incorporated both physically and socially within a women’s group. Correspondingly, boys are likely to spend more of their leisure time with their peers, becoming integrated in an egalitarian way with a group of same age adolescents (Schlegel, 1995).

This paper explores how gender socialisation is influenced by enrolment in school in the specific context of Pakistan, where gender norms are deeply embedded. School enrolment itself allows both boys and girls to spend more time away from their families, with their peers and teachers. It also allows for a different type of socialisation, especially for girls, who otherwise would likely be integrated into groups of older women.

2.2. Time Use, Schooling and Gender Differentiation

Time is an important resource, and how children spend their time has significant human capital repercussions, and also has the potential to impact how these children are socialised into specific gendered roles. While detailed time diary data is available for developed countries (United States, Canada, and Europe) and provides insight into the multiple contexts of children’s daily lives that create avenues for socialisation and learning (Bianchi & Robinson, 1997; Hofferth & Sandberg, 2001), less is known about how children and adolescents in developing countries spend their time. An important comparative review paper on the advent of schooling, which considers both, industrialised and developing countries is Larson and Verma (1999). However, for this paper time use diaries were not available for all the countries compared. This is followed by a small number of time use studies looking at paid and unpaid work in the developing countries context (Ritchie, Lloyd, & Grant, 2004, Lloyd et al. 2008). Findings of these papers are discussed below. My paper attempts to extend this literature.

¹Defining gender and determining the social and biological contributions to gender conceptions and gender identity is contentious, as is the very idea that there is ultimately any meaningful distinction between biology and culture (<https://plato.stanford.edu/entries/feminism-gender/>). Settling such debates is far beyond the scope of this paper. Nevertheless, the work of this chapter is informed by the Social Learning theorists of the late 20th century. Social Learning theory argues that gender typing is explained as being neither biologically determined nor inevitable, but a result of day to day interactions between the developing child and her immediate social environment (Unger & Crawford, 1990). Kate Millett made the argument that gender is “the sum total of the parents’, the peers’, and the culture’s notions of what is appropriate to each gender by way of temperament, character, interests, status, worth, gesture, and expression” (Millett 1971, pg. 31).

Larson and Verma (1999) argued in their comparative time use paper that each ‘activity context’, disaggregated from time-use data, can be seen as a ‘learning environment’ or ‘experiential niche’ and provides a context for socialisation experiences: they use the average amount of time spent in each of these activity contexts (i.e., labour, school work, media use, and active leisure) as a proxy for the “degree of exposure to, engagement with and absorption of these experiences” (Larson and Verma, 1999, pg. 702).

On similar lines, Lloyd et al. (2008) used mean time spent on different activity contexts to examine how school enrolment is associated with different time use patterns in adolescents within a developing country context. They argue that different “activity contexts” can serve as a proxy for the distribution of socialisation contexts, and conclude that the net gain in time spent with peers in a school environment relative to time at home spent in traditional gendered activities for female students should lead to the development of more equitable gender norms, particularly among girls (Lloyd et al. 2008, pg. 116).

But, even in school settings, boys and girls may have different experiences. Research has shown that boys tend to play in large groups, while girls tend to form smaller, more intimate relationships. Thus, even when they make it to school, boys and girls may have different experiences, and the social identities forged by boys may differ from the social identity formed by girls. This paper is only the beginning of an effort to study the possible association of school enrolment and socialisation of girls and boys. Because of the inherent limitations of cross-sectional data we do not suggest causation. We present time-use patterns of male and female students and nonstudents and show that schooling is associated with the lives of male and female students becoming more similar.

2.3. Literature on Time use Allocation in Pakistan

The time use studies that look at the time use allocation among adolescents in Pakistan have mainly focused on gender differences making only a passing reference to the effect of schooling on these differences. Some key studies, most relevant to our investigation are summarised below:

Lloyd et al. (2008) use the time use component of the nationally representative 2001–02 Adolescent and Youth Survey of Pakistan (AYSP) to explore if school attendance is correlated with gender differences in time allocated to household work and market work. The data was compiled for broad activities at one-hour interval between 6am to 12pm on a ‘usual day’. This paper is actually a comparative cross-country study, which focuses on adolescents (15 to 19 year olds) in India, Kenya, Pakistan, and South Africa and only uses workdays data. The authors document differences in time use patterns between students and nonstudents, and find that although school attendance is associated with reduction in total work demands and attenuates the gender division of work, female students still work longer hours than male students (where work includes both labour market and household work). This focus on school-days only is problematic as time use patterns of students are different between school days and non-school days in comparison with the time use patterns of nonstudents. The authors acknowledge endogeneity issues in their model, which I mitigate by focusing on the weekend: the weekend is independent of the institutional structure that the school imposes thus making

the comparison between activity episodes of students vs. nonstudents more credible. I also consider location to get a better idea of both time and space, and hence get a better insight into the social context of each activity episode.

3. HYPOTHESES

In light of the above review of the literature, I specifically investigate how schooling has the potential to translate into more egalitarian gender norms both within the household as well as in the public space. Looking at how girls and boys distribute their time in different activities/contexts can help us understand whether schooling can change these socialisation experiences. For example, if going to school makes the distribution more equal between boys and girls *vis-à-vis* unpaid work we could argue that schooling makes one more fair-minded by inculcating more equitable social norms. Moreover, with respect to public space, it is important to investigate if going to school also increases the presence of girls in other public arenas (such as parks, community centres, libraries) which would lead to greater mobility and autonomy.

In light of the above discussion I set up the following hypotheses:

- (i) Schooling is associated with attenuating the gender gap with respect to time spent on unpaid work, paid work, learning and leisure i.e. schooling will make the time use patterns of girls and boys more similar, even on days when they are not in school.
- (ii) Schooling is associated with greater access to public space for both boys and girls.

4. DATA AND CONTEXT

Pakistani time use survey, 2007, is a nationally representative survey, which includes a household component and an individual component; the later includes the time use diaries. A total of 19,380 household questionnaires and 37,830 time use diaries were filled completely and the digitised data was made available for analysis. For the purpose of this paper we focus on the age brackets: 10-14 years, and 15-19 years.²

We are cognisant that time use patterns of students differ between school days and non-school days. In Pakistani government schools there are classes 6 days a week, while private schools have a two-day weekend. We completely drop Saturday and consider only Sundays for weekend, while the five days (Monday to Friday) make the weekday. Note that only “normal” day time-use data is considered for weekdays, but for weekend data is not restricted to normal as some respondents do not consider weekend a normal day and it also includes holidays.

4.1. Data

Table 1 shows the distribution of our sample according to age, schooling status (student/non-student), and rural/urban. For the age group 10-19 years a total of 11,497 individuals completed the time use diaries. The data is further disaggregated by sex:

²Fundamental ILO conventions set minimum age for admission to employment or work (light) at 15 years, and the minimum age for hazardous work is 18. Thus, our first group of 10-14 year old children should ideally be in school, and definitely not working. Our category of 15-19 year olds comprises adolescents, many still in school, but we find a large majority of Pakistani youth entering the job market as well.

5,638 female and 5,860 male individual respondents were available for the combined age group 10-19 years and, the respondents had the option to state that they were a student, and hence, not available for work. 57 percent respondents reported being students, and within this category of students, 70 percent were children aged 10-14, 30 percent were adolescents belonging to the age group 15-19.³

Table 1a

Selected Characteristics of Individual Respondents

	Students					
	Boys		Girls		Total	
	Observations	% of male students	Observations	% of female students	Observations	% of total students
10 - 14 yrs. Old	2614	69.15	2007	71.1	4621	69.98
15 - 19yrs old	1166	30.85	817	28.9	1983	30.02
Total	3780	100.00	2824	100.00	6603	100.00

	Non Students					
	Boys		Girls		Total	
	Observations	% of male non-students	Observations	% of female non-students	Observations	% of total non-students
10 - 14 yrs. old	713	34.28	1103	39.2	1816	37.11
15 - 19yrs old	1367	65.72	1711	60.8	3078	62.89
Total	2080	100.00	2814	100.00	4894	100.00

Further disaggregation of our data suggests that 62 percent of our sample is rural (and 38 percent urban), and within the rural sample only 30 percent are students, while for the urban sample, 48 percent are students.

Table 1b

Selected Characteristics of Individual Respondents Continued

	Urban								
	Student			non-student			All (student + nonstudent)		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
	N	N	N	N	N	N	N	N	N
10 - 14 yrs. old	766	646	1,412	205	234	439	971	880	1,851
			76%			24%			100%
15 - 19 yrs. old	275	243	518	222	223	445	497	466	963
			54%			46%			100%
Total	1297	1082	2379	1149	1,391	2540	2446	2,473	4919
			48%			52%			100%

	Rural								
	Student			Non-student			All (student + nonstudent)		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
	N	N	N	N	N	N	N	N	N
10 - 14 yrs. old	1,085	684	1,769	592	895	1,487	1,677	1,579	3,256
			54%			46%			100%
15 - 19 yrs. old	274	154	428	426	626	1052	700	780	1480
			29%			71%			100%
Total	1500	910	2410	2206	3,363	5569	3706	4,273	7979
			30%			70%			100%

³Time spent by students on labour market work is rarely substantial (Lloyd et al 2008).

For the age-group 10-14, 54 percent of the rural sample of this age bracket went to school, while 76 percent of the comparable urban sample went to school. For the rural sample, for age group 15-19, only 29 percent were students, while for the urban sample of age group 15-19, 54 percent went to school.

Table 1c

Selected Characteristics of Individual Respondents Continued

Total Monthly Household Income	Girls		Boys	
	N	% of total	N	% of total
0 - Rs 3000	344	6.9	220	5.1
Rs 3001 - Rs 6000	1481	29.7	1139	26.4
Rs 6001 - Rs 10000	1656	33.2	1495	34.7
Rs 10000 or more	1372	27.5	1349	31.3
no answer	134	2.7	111	2.6
Total	4987	100	4314	100

4.2. Mean Time and Participation Rate in Different Locations (Weekday)

As mentioned in the introduction, school is an important site for socialisation: it not only provides girls and boys an opportunity to spend time at school with peers and teachers, but also effects socialisation indirectly by limiting the time available in one's own dwelling doing unpaid work. Moreover, time use patterns in the public sphere, besides school itself, such as market work, and parks, libraries etc. may differ with enrolment status, thereby leading to differences in socialisation.

Overall, girls spend more time in their own dwelling than boys: girls in the age group 10 to 14 years and not enrolled in school spend 5 hours more than non-student boys of the same age group in their own dwelling, this gender gap rises to 8 hours for the age group 15 to 18 years; however, with school enrolment this gender gap narrows for students to less than 2 hours for age group 10 to 14 years, and two and a half hours per day for the older age group of 15 to 18 years with male students actually spending more time in their own dwelling than boys who are out of the schooling system.

With respect to time spent in the public space, again, as expected, boys spend more time in the public space than girls, irrespective of enrolment status. Non-student boys of both age groups, spend over an hour in the public space every day while 10 to 14 year old girls not enrolled in school spend 23 minutes per day and this declines to 8 minutes per day for 15 to 18 year olds. Further, in the case of both girls and boys, time in public space actually decreases (albeit marginally) once they are in the schooling system.

Finally, with respect to travel, again we find males spending more time on travel than females, spending a little more than an hour on travel daily. This confirms Adeel et al. (2013) research on gender and travel behaviour in Pakistan where they demonstrate that females are more likely to be immobile as 55 percent female respondents did not report any trip in the diary day as compared to just 4 percent male respondents.⁴ But, as we disaggregate our data according to enrolment status, we find that girl students are travelling more than non-students (perhaps to school and back).

⁴They claim that women make lesser daily trips (2.8) than men (5.4) and the greatest difference exist for leisure and sociocultural trips. Further, they find that women are more automobile dependent as their share of automobile trips (13 %) is greater than men's share (10 %). Period of adulthood and marriage seems to restrict female mobility and leisure travel strongly.

Table 2

Mean Time and Participation Rate in Different Location (Weekdays)

	Students							
	Male students 10 - 14 yrs. Old		Female students 10 - 14 yrs. Old		Male students 15 - 19 yrs. old		Female Students 15 - 19 yrs. old	
	Participat ion rate (%) ^a	Mean time (mins. /day)	Participat ion rate (%) ^a	Mean time (mins. /day)	Participat ion rate (%) ^a	Mean time (mins. /day)	Participat ion rate (%) ^a	Mean time (mins. / day)
Own Dwelling	100%	948**	100%	1058***	100%	955***	100%	1109****
Else Dwelling	28%	29	24%	23***	31%	33*	0.17	18***
field/farm	7%	6***	3%	2***	7%	6***	1%	1***
other workplace	1%	1***	0%	0*	1%	1***	1%	0*
Educational institute	89%	281***	87%	270***	84%	262***	79%	247***
Public Space	57%	62***	15%	13***	54%	60	5%	4**
Travel	97%	111	91%	73***	98%	121	82%	60***
other workplace	2%	1**	1%	0***	2%	2	1%	0
	Non Students							
	Male non-students 10 - 14 yrs. Old		Female non-student 10 - 14 yrs. old		Male non-students 15 - 19 yrs. old		Female non-student 15 - 19 yrs. old	
	Participat ion rate (%) ^a	Mean time (mins / day)	Participat ion rate (%) ^a	Mean time (mins. / day)	Participat ion rate (%) ^a	Mean time (mins. / day)	Participat ion rate (%) ^a	Mean time (mins./da y)
Own Dwelling	100%	929	100%	1272	100%	844	100%	1343
Else Dwelling	20%	31	28%	39	25%	44	18%	26
field/farm	43%	104	18%	32	35%	108	13%	26
other workplace	23%	111	1%	2	46%	227	1%	4
Educational institute	22%	72	13%	28	10%	31	4%	9
Public Space	59%	83	7%	23	48%	67	8%	8
Travel	94%	106	54%	41	96%	117	32%	23
other workplace	2%	4	2%	2	2%	2	1%	1

a: The participation rate is percentage of respondents who undertake the given activity for minimum of 30 minutes per day.

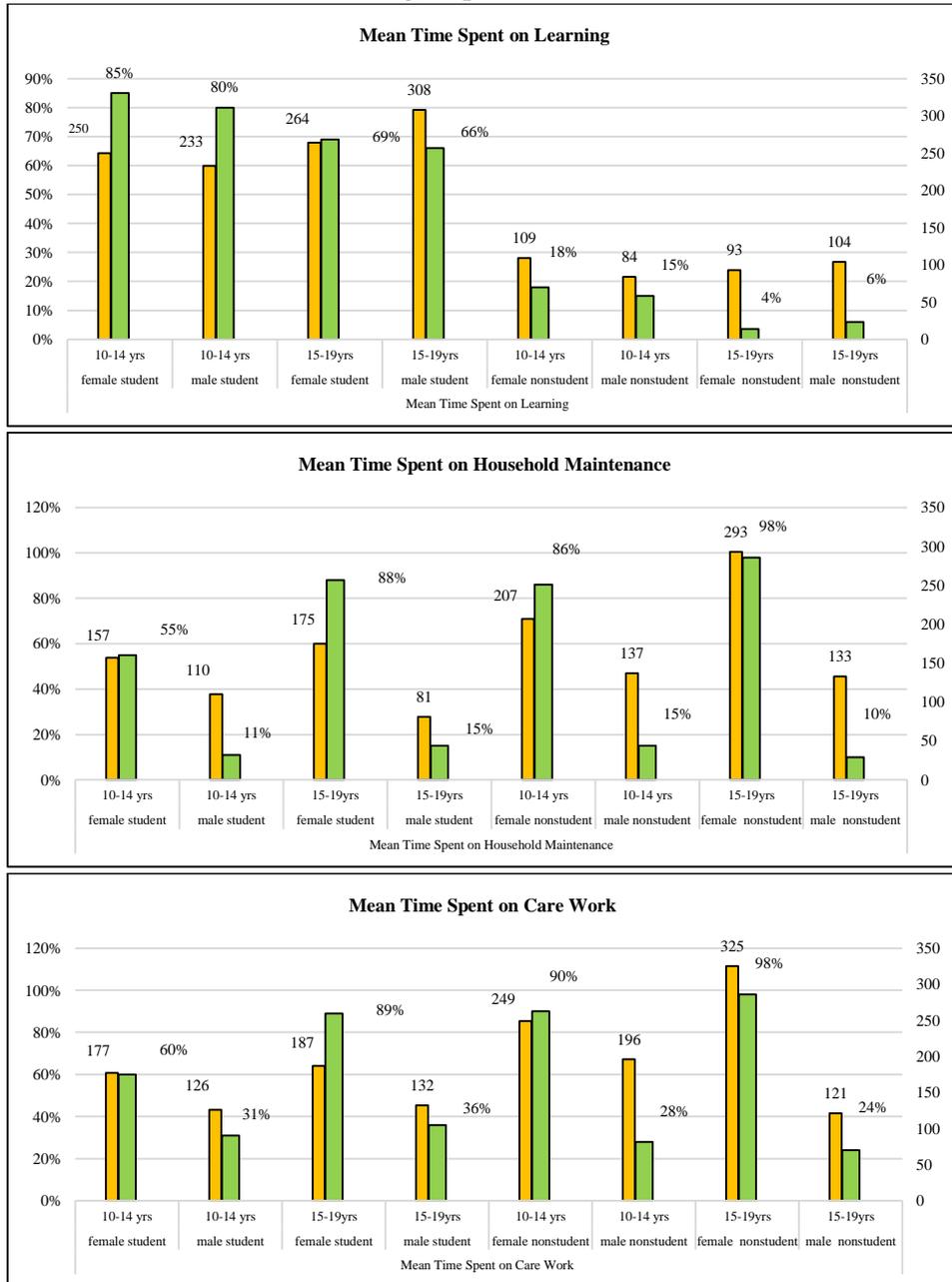
4.3. Mean Time in Different Activity Contexts and Participation Rate—Weekend

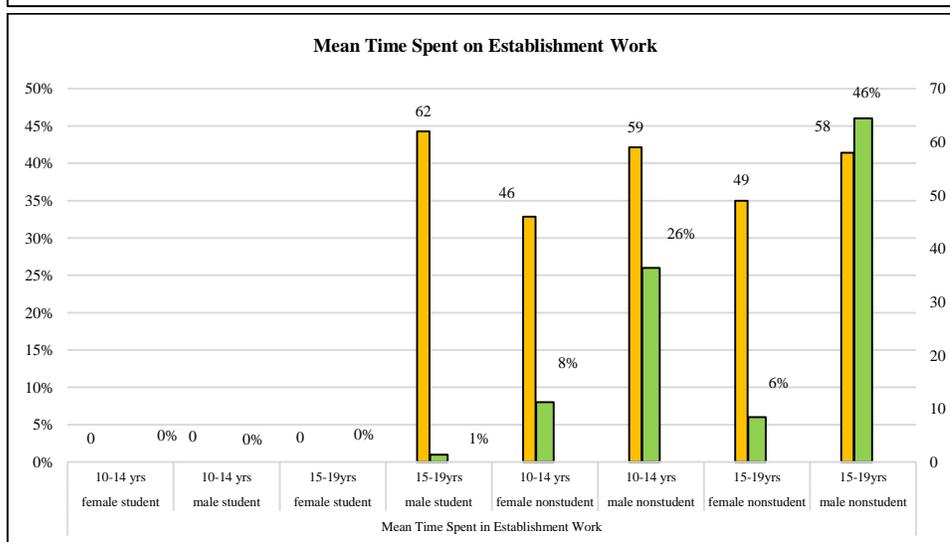
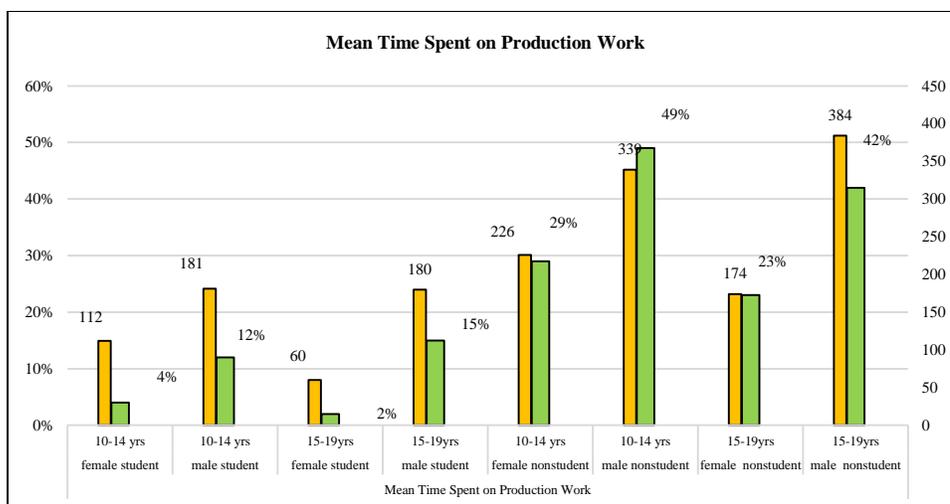
As explained above for the weekend we do not have enough observations to consider both location and time for Sundays. We therefore disaggregate the above sample by time use activity only and compare how students and nonstudents spend their Sundays. Note that participation rate is critical when comparing how students and nonstudents spend their weekend. While 85 percent of our sample of girls in the age group 10 to 14, who do not go to school, spend over 3 and a quarter hours on household maintenance every Sunday, for enrolled girls this participation rate falls to 55 percent, and the mean time spent on housework also declines to 2 and three-fourth hours. Mean time spent on household maintenance increases with age, although more so for nonstudents than students: 98 percent girls in the 15-19 age-group not enrolled in school spend almost 5 hours per day on housework, while female students in this age group spend mean time of almost 3 hours per day on household maintenance with a participation rate of 87.5 percent. Boys, whether enrolled in school or not, do not contribute significantly to housework. However, if not enrolled in school, then boys contribute in the labour market.⁵

⁵ almost half of our male nonstudent sample, age group 10 to 14, participate in the production sector, working a little more than five and a half hours even on weekends.

If enrolled in school more than two-third boys and girls spend around 3 hours learning (doing homework etc.) even on weekends. The participation rate for students aged 10-14 is over 80 percent; however, for the older age group of 15-19 years this participation rate falls to a little over 60 percent.

Fig. 1. Participation Rate and Mean Time Spent by Boys and Girls on Learning, Unpaid and Paid Work

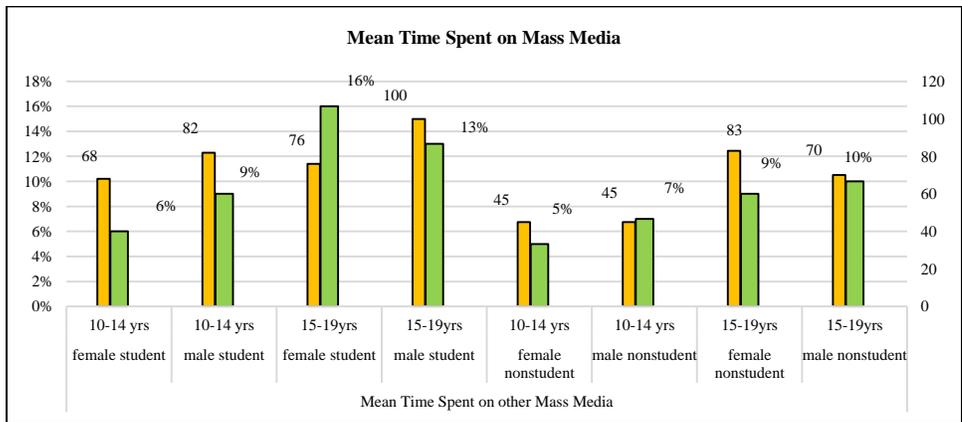
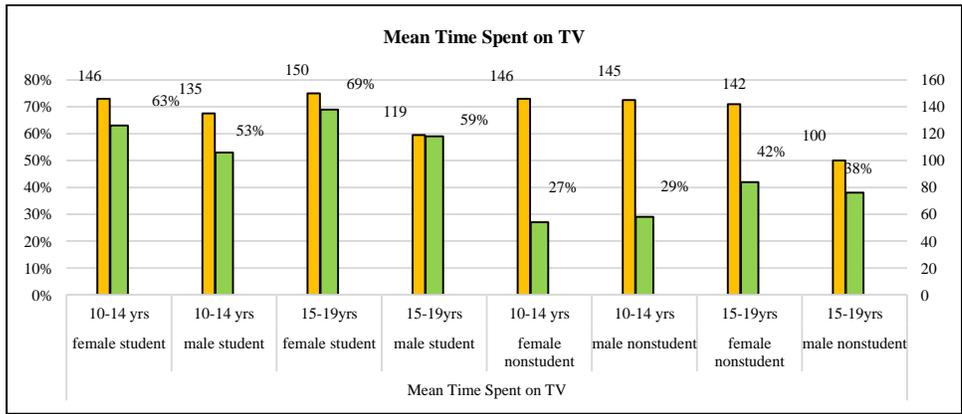
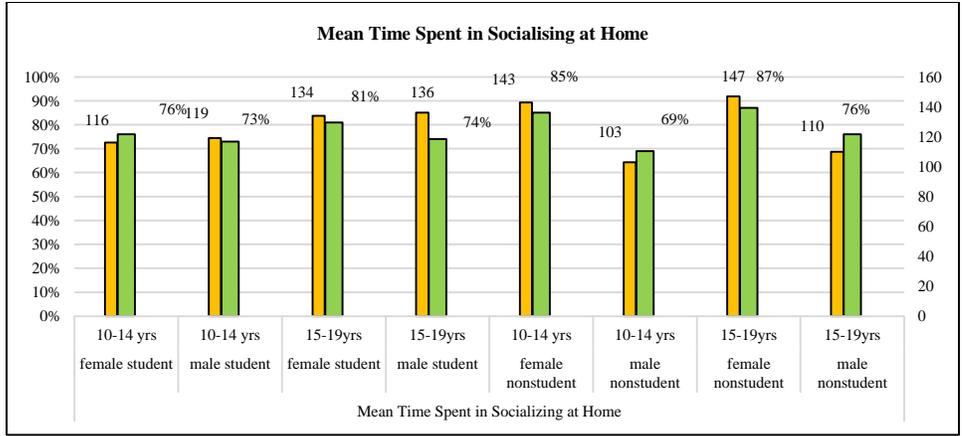




Given that both students and nonstudents spend a significant share of their day on paid and unpaid work, even on Sundays, and students spend over three hours per day on learning, students have limited time for leisure. The bar charts below illustrate that for girls who are enrolled in school the mean time spent in active leisure and the participation rate are both less than girls who are out of school and it is less than boys' active leisure. For boys, both the participation rate and mean time spent on overall active leisure on weekends is not significantly different for students and nonstudents. However, for boys the composition of leisure is different for students and nonstudents: Students spend most of their active leisure on games and other pastimes, but for out of school males, more time is spent on socialising than games and similar structured activities. However, overall the public sphere remains masculinised with boys spending more time on leisure outside the house, whether socialising outside or playing games etc., than girls.

Fig. 2. Participation Rate and Mean Time Spent by Boys and Girls on Active Leisure





With respect to passive leisure, we find that overall students spend more time watching TV and other mass media, than out of school children and adolescents; and within students, female students spend more time watching TV than male students. However, with age both the participation rate and mean time spent on watching TV increases for the entire sample, and the difference between students and nonstudents becomes less.

5. EMPIRICAL STRATEGY

The hypotheses delineated above are tested using the following methodology. For Pakistan only cross-sectional time-use data is available. Therefore, endogeneity is an issue in our analysis: being a student is endogenous with time use episodes. Just looking at school days may lead to selection bias as going to school itself depends on norms, parents' preferences, and also on student's innate ability and tastes. I try to minimise this problem by using data for Sundays, a day when no school is in session. I use a two-stage approach:

I first estimate the probability of being a student and then use this probability in the second stage when time episodes for specific activities are estimated. Moreover, a comprehensive list of control variables is used in the estimating equation (see annexure for a list of variables included), and the data is also clustered at the village/community level.

As mentioned above, I conduct separate analysis for weekdays and weekend as an empirical strategy to address endogeneity. Sunday allows us to consider the time-use patterns of both students and non-students on a day when they neither have to go to school or to work, and therefore, have the same number of hours in the day to distribute among the time-use activities listed, (acknowledging that some students spend some time on homework and other learning on Sundays). For weekdays we divide the data by location and then run respective Tobit models for each location. However, for the weekend we do not have enough observations to disaggregate the data by location, and instead estimate the time activity equations as a system as the activities are codetermined and their errors terms might be correlated.

Therefore, our empirical strategy comprises the following two steps:

First Stage

We first use the Probit model to estimate:

$$\Pr(\text{student} = 1 | \beta_0 + \beta_1 X_{i1} + \dots + \beta_i X_{in}) = \Phi (\beta_0 + \beta_1 X_{i1} + \dots + \beta_i X_{in})$$

where Φ is the cumulative normal function.

I begin by estimating the probability of an individual being enrolled in school, which depends on our explanatory variables X_i ; where X_i is our vector of explanatory variables including a proxy for distance to school, if a primary and a secondary school is available within two 2km, and sex of the respondent. Other regression controls include age, household income, presence of children 7 years or younger, and whether rural or urban. I also include the province and if the household has access to electricity and the presence of durable assets such refrigerators. In addition, I include car ownership. I also consider access to public transportation within a 2 km radius. Moreover, sample weights are used and I cluster around the respective community to ensure robust standard errors. The above regression is used to predict the probability of being a student based on these individual and household characteristics. This predicted probability is then used when estimating a system of equations entailing broad time episodes.

Second Stage For Weekdays:

Tobit models are used to investigate the impact of expected probability of being a student on time spent on different activity episodes for each respective location considered, i.e. public space (excluding schools), own dwelling, else dwelling, educational institute, work, and travel time. Time use data is censored: there are always some activities with zero participation, therefore data is left censored. The Tobit model is an inherently better choice than the Ordinary Least Square (OLS) model. Separate models for male and female students are estimated since the Chow test confirms that the two distributions are structurally distinct.

The structural equation is:

$$t_i = \beta_0 s_i + \beta_1 X_{i1} + \dots + \beta_n X_{in} + \varepsilon_i \quad \text{where } \varepsilon_i \sim N(0, \sigma^2)$$

s_i is a dummy variable for whether the individual was enrolled in school or not and X_i is our vector of explanatory variables.

The model examines the relationship between our dependent variable, t_i , the time spent by boys and girls, in different activity episodes, and the expected probability to be enrolled in school. Separate models are run for each respective location. As mentioned above, our respective regression models control for sex of the respondent, marital status, age, household income, presence of children 7 years or younger, and whether rural or urban.

Weekend:

There is significant cross-equation correlation between the respective activity episodes the same individual spends time on during the day. These time-use decisions are simultaneous with a constraint that the total time spent in a day is 1440 minutes. Moreover, for separate individuals these activities are not correlated as they belong to different households. Therefore, this system of equations for time allocation may not be estimated using OLS. Instead, Seemingly Unrelated Regression (SUREG) methodology is used to estimate the effect of being a student on time allocation decisions in seven activities.

SUREG is also the appropriate methodology to use when the variable of interest is a continuous variable, as in the case of $Pr(\text{student})$. The following broad categories of time-use activities are considered: household work, care work, learning, passive and active leisure, labour market work, and subsistence work (see annexure for detailed definition of each respective dependent variables). Each category includes its related travel time. These 7 time-use equations form our system of equations, where each respective model specification is further divided by gender, and by weekend and weekday.

SUREG is more efficient than OLS only if the regressors for all the equations in the system are not identical and if there is significant correlation in the disturbances across the equations. The efficiency gains are positively associated with the strength of correlation of disturbances across equations (Greene 2000). In this case, both the conditions are met and therefore I will be using SUREG to estimate the effects of

predicted probability of being a student on time allocation for J equations and N observations.⁶

The reduced form system of time allocation equations:

$$t_{ij} = \beta_0 \text{Pr}(\text{student}_i) + \beta_1 X_{ij} + \beta_{ij} Z_{ij} + \mu_{ij}$$

where $\mu_{ij} \sim N(0, \sigma^2)$

X_i is our vector of explanatory variables common to all regressions

Z_{ij} comprises a set of explanatory variables specific to each respective equation.

The model examines the relationship between our dependent variable, t_{ij} , the time spent by male and female, i , in different activity episodes, j . All our respective regression models control for household income, province, and whether rural or urban.

With respect to the specific explanatory variables, for both market work and subsistence work regressions we include dummies for seasonal months (April-May, July-August, October-November) in which labour demand is high in crop production. For our Formal Education regression we include distance to school. For household work durable assets such as refrigerators are included. Moreover, access to fuel for cooking, and piped water for drinking are included. For care-work access to clinic could influence the time spent on child and elderly care.

6. REGRESSION RESULTS

As delineated in the methodology, we first compute the Probit model to estimate the expected probability of being a student. As expected, the predicted probability of enrolment depends significantly on variables directly related to schooling, such as travel time to school (which is also a proxy for distance to school), and presence of secondary school within 2 km. The signs of the coefficients are as expected. Moreover, explanatory variables related to income, durable assets, and type of dwelling (permanent vs. temporary) also positively affect the probability of being in school. With respect to our SUREG model we now observe the following patterns in time-use allocation. Although results for both weekend (i.e. Sunday) and weekdays are presented in the tables below for reference, the discussion will mostly focus on weekend only as this is when students do not have to go to school and a comparison between their time-use activities has fewer endogeneity issues. Finally, we present our Tobit results for respective locations in the public sphere to investigate our second hypothesis. As mentioned above, we use weekdays for location as we do not have enough weekend observations to disaggregate the Sunday data by location. However, the weekday data will give us some indication of the time use patterns for both girls and boys and their distribution in the private and public sphere.

Hypothesis I: Schooling is associated with attenuating the gender gap with respect to time spent on unpaid work, paid work, learning and leisure i.e. schooling will make the time use patterns of girls and boys more similar.

⁶SUR assumes strict exogeneity of the regressor vectors X and Z and homoscedasticity of error terms,

$$E[\mu_t \mu'_j | X, Z_j] = \sigma_{jj} I_N$$

In addition, it is also assumed that the disturbances are uncorrelated across observations, but correlated across equations. Therefore $E[\mu_{it} \mu'_{ks} | X, Z_j] = \sigma_{ik}$ if $t = s$ and 0 otherwise.

1. *Schooling is associated with both boys and girls spending more time on learning at home.*

Table 3a presents the SUREG regression results for aggregate activities. With respect to activity episodes on Sundays, we find that school does spillover and students spend around 3 to 4 hours learning: female students aged 10 to 14 years, spend two and a half hours daily on home-work, even on Sundays; as female students enter the older age group of 15 to 19 years, we find them spending a little over 3 hours studying on Sundays, holding all else constant. These models confirm that time spent on learning is more for male students than females. 10 to 14 year old boys spend almost 3 hours studying on weekends, as their probability of being a student increases, holding all else constant; while for the age-group 15 to 19 years time on learning increases to 4 hours per day on weekends. Hence, both male and female students spend increased time at home learning on weekends, which has implications for gender norms. This is due to the fact that going to school makes their time use activities more similar, especially with respect to time spent on learning.

2. *With respect to household maintenance work and care work, it is less for girls who go to school. But there is no difference for boys who did not perform any care work before and continue the same trend.*

Female students here are substituting learning for household maintenance and care-work (see Tables 3b and 3c): for girls in the age group 10 to 14 years, there is a decline of around 20 minutes in child/elderly care-work, and almost 2 hours in household maintenance as the probability for going to school increases, holding all else constant. But for girls in the age group 15 to 19 years, although household maintenance work declines almost 3 hours per day on weekends as the probability of going to school rises, there is no change in the time spent on caring for children or elderly. The results for female students suggest that repetitive household tasks (so called “drudgeries”) may be subcontracted or some other household member might take them over, to spare time for them to study but caring tasks that are more personal in character remain difficult to subcontract or pass on to others.

Male students, in contrast, are substituting learning for work, both labour market and subsistence work (see tables 3f and 3g): For boys in the age group 10 to 14, as the expected probability of going to school rises, the time spent on subsistence work declines by almost an hour and a half and there is a 1 and a quarter hour decline in market work, holding all else constant. For older boys this decline, associated with school enrolment, is almost 2.5 hours in subsistence work, and 3 hours in market work.⁷

3. *School enrolment is associated with a larger decline in active leisure for girls than boys.*

As the expected probability of going to school rises, the time spent on active leisure also declines, and this decline is larger for girls than boys: for girls, as the expected probability

⁷ For young girls as well, in the age group 10 to 14 years, labour market work is less for enrolled girls, holding all else constant. This decline is mostly in subsistence work (50 minutes per day) while a decline in market work of 30 minutes is observed in age group 10 to 14 years, holding all else constant. However, for adolescent girls we do not observe any significant changes.

of getting enrolled in school increases to 1, the time spent on active leisure declines by 106 minutes per day for the age group 10 to 14, and by 149 minutes (i.e. almost two and a half hours) per day for age group 15 to 19 respectively. In contrast, for boys in the age group 10 to 14, the decline in active leisure associated with school enrolment is 79 minutes per day, on weekends; but for the age group 15 to 19 years, there is no significant change in the time spent on active leisure even when the probability of enrolment in school rises to 1.

4. *For older boys and girls school enrolment is not associated with a decline in passive leisure.*

For passive leisure the above pattern is reversed: for both boys and girls in the younger age group of 10 to 14 years, increase in expected probability of enrolment is associated with over a half hour decline in passive leisure per day. However, for the older age group of 15 to 19 year old, for both boys and girls, no significant change in passive leisure is associated with increase in expected probability of enrolment in school.

We accept Hypothesis I: The gender gap in activities narrows with schooling but it doesn't completely disappear.

We find girls carrying a higher workload at home than boys even if they are both enrolled in school (albeit it is less than non-student girls). This is because although school enrolment is associated with a decline in household tasks, a comparable decline in care work for children and elderly is not observed, especially for adolescent girls in the age group 15 to 19 years.

Hypothesis II: Schooling is associated with greater access to public space for both boys and girls on weekdays.

The Tobit regression results for respective location context relevant to our initial hypotheses are discussed here:

5. *Schooling attenuates gender differences, in the sense that girls are able to spend less time in their own dwelling and more time with their peers at school.*

As expected, students spend between 5 to 6 hours studying in their respective school premises, on a normal week day, holding all else constant. While in school, there are nuanced differences in how girls and boys spend their time on games, and on socialising with peers: While both boys and girls spend time on games, boys spend more than an hour and a half (109 minutes), on games and other pastimes every day in school, while female students spend only a little over half an hour (32 minutes) on games and pastimes. Girls also spend time socialising with peers. Female students spend almost 13 minutes socialising in educational institutes, holding all else constant, and this time spent on socialising increases with age. (See models 5 and 6.), while the time spent on games and pastimes decreases with age, with this decrease being larger for girls than boys.

6. *Girls' time in public arena (besides the school itself) does not change as a result of schooling.*

Table 4b focuses on public space other than the educational institute itself. With respect to the use of public space, we find significant results for male students. However, we do not find similar significance for female students. We do not obtain significant

results for either playing games or socialising in the public space associated with school enrolment in the case of girls.

7. With respect to public space, male students use it for structured activities, while male non-students, mostly focus on socialising; i.e. the composition of leisure changes.

We find male students spending over one hour more than male non-students, on games and other such pastime in the public space, holding all else constant. In contrast, male students spend less time socialising in parks, etc. than non-students, holding all else constant. This finding confirms that for older male students the structure of leisure changes away from socialising (even away from religious socialising) and toward more structured games in the public arena.

Hypothesis II: We reject the hypothesis.

We fail to find an increased presence of girls in the public arena despite the advent of schooling.

Table 3.2

<i>Probit Model: Determining the Probability of being a Student _ P(student)</i>	
Travel time to school	0.047*** 0.000
Primary school within 2km	0.108 (0.430)
Secondary school within 2km	0.152** 0.000
Middle income	0.066 (0.130)
High income	0.200*** 0.000
Refrigerator	0.488*** 0.000
Type of house (pucca)	0.282*** 0.000
Rural	-0.229*** 0.000
Province (Sind)	-0.290*** 0.000
Province (Khyber Pakhtoun)	-0.365*** 0.000
Province (Baluchistan)	-0.042 (0.580)
_cons	-0.871*** 0.000
N	10350
Cluster	vce

Table 3.3a

	<i>SUREG: Determinants of Time Spent in Different Activity Episodes_ Formal Education</i>							
	Weekend				Weekday			
	Female 10-14	Female 15-19	Male 10-14	Male 15-19	Female 10-14	Female 15-19	Male 10-14	Male 15-19
formal_educ								
Yhat	150.2*** (20.780)	206.3*** (36.280)	173.7*** (16.840)	240.2*** (34.930)	367.7*** (7.780)	478.7*** (9.830)	363.2*** (7.500)	459.8*** (7.950)
middle_income	10.53 (14.600)	-29.23* (14.680)	11.76 (12.180)	-19.24 (20.450)	2.4 (6.470)	-18.83** (6.010)	3.304 (6.100)	-18.83** (6.130)
high_income	57.74** (19.080)	-1.364 (16.900)	6.551 (14.980)	-10.57 (21.020)	0.153 (7.270)	-21.59** (6.670)	9.387 (7.150)	-31.02*** (6.360)
Rural	-1.212 (15.850)	24.97 (16.570)	22.17 (12.990)	-19.28 (20.920)	5.739 (6.670)	33.11*** (6.420)	13.34* (6.670)	24.69*** (6.450)
own_dwelling	-3.445 (20.450)	12.64 (18.200)	42.34** (13.970)	10.77 (24.170)	-1.008 (8.520)	4.22 (8.300)	1.381 (8.470)	-6.163 (8.520)
Pucca	-0.685 (14.280)	-3.548 (15.280)	1.505 (11.650)	-5.06 (19.030)	0.883 (6.020)	-34.68*** (5.880)	-13.84* (5.840)	-34.42*** (6.040)
2.Province	-55.63** (17.600)	-11.63 (16.500)	-20.76 (14.120)	-8.244 (20.590)	-21.58** (6.720)	18.73** (6.220)	-13.03* (6.290)	13.42* (5.990)
3.Province	-58.07** (19.910)	-16.78 (19.510)	-19.06 (15.840)	-1.352 (27.940)	-48.69*** (8.030)	7.279 (7.980)	-15.24 (8.410)	36.76*** (8.400)
4.Province	-58.26 (37.690)	-11.12 (39.870)	-13.23 (22.730)	-10.65 (49.330)	-32.17* (13.890)	-9.099 (13.990)	-28.72* (11.930)	-27.34* (12.480)
Electricity	-13.75 (21.550)	19.81 (28.420)	21.44 (18.510)	10.13 (31.770)	2.76 (10.760)	-3.502 (10.810)	7.811 (9.530)	-7.702 (10.500)
Water	-21.22 (18.360)	-18.36 (21.990)	-13.78 (15.630)	5.725 (24.540)	-6.372 (7.800)	4.095 (7.510)	3.233 (7.500)	3.914 (8.000)
own_car	1.26 (43.880)	-33.67 (36.240)	8.036 (24.700)	45.29 (39.190)	16.98 (13.160)	-11.32 (11.320)	-4.917 (12.570)	9.457 (12.060)
Remit	-12.26 (20.070)	-11.98 (21.400)	20.75 (18.930)	33.53 (27.950)	6.626 (8.800)	3.041 (8.010)	-18.04* (9.200)	7.397 (8.840)
primary_school	34.43 (25.690)	-10.27 (47.450)	14.42 (24.840)	-56.23 (36.800)	13.12 (13.970)	-48.72*** (14.060)	-4.294 (13.100)	-19.01 (17.110)
secondary_school	20.53 (12.920)	-0.717 (13.810)	-15.91 (12.280)	-7.378 (17.780)	-0.884 (5.460)	-6.37 (5.710)	7.099 (5.610)	-21.16*** (6.190)
Buses	-18.33 (13.490)	22.03 (14.100)	-11.23 (11.690)	-16.24 (18.200)	-10.75 (5.830)	-8.937 (6.190)	-17.39** (5.870)	-4.385 (6.590)
_cons	42.96 (39.220)	-43.23 (58.770)	-50.57 (33.550)	44.41 (51.510)	-44.99* (19.030)	-65.79*** (18.780)	-36.12* (18.250)	-61.94** (20.350)

Table 3.3b

*SUREG: Determinants of Time Spent in Different Activity
Episodes _ Household Maintenance*

	Weekend				Weekday			
	Female 10-14	Female 15-19	Male 10-14	Male 15-19	Female 10-14	Female 15-19	Male 10-14	Male 15-19
hhld_work								
Yhat	-117.4*** (21.670)	-217.2*** (49.010)	-31.81*** (9.560)	-29.34 (19.710)	-185.8*** (7.280)	-295.5*** (14.420)	-20.02*** (2.490)	-19.76*** (4.390)
middle_income	-26.38 (15.020)	55.56** (19.070)	-1.8 (6.820)	-25.65* (11.140)	-0.787 (6.020)	-17.42* (8.450)	-5.107* (2.000)	-3.959 (3.290)
high_income	-25.06 (20.180)	29.84 (21.940)	-11.47 (9.050)	-7.757 (12.130)	-1.821 (6.880)	-5.09 (9.600)	-3.219 (2.390)	0.365 (3.510)
Rural	21.65 (15.980)	8.901 (21.550)	-19.50** (7.180)	-4.848 (11.090)	-3.29 (5.950)	-12.8 (8.720)	-4.811* (2.080)	-2.881 (3.300)
own_dwelling	19.72 (21.190)	5.439 (23.370)	4.861 (7.980)	-4.67 (13.480)	-2.316 (7.850)	18.7 (11.700)	1.761 (2.730)	-4.209 (4.530)
Pucca	-10.75 (14.710)	-21.11 (19.570)	-2.008 (6.600)	2.346 (10.420)	-3.291 (5.610)	18.89* (8.290)	-3.319 (1.900)	-4.081 (3.230)
2.Province	-36.63* (18.170)	-42.5 (21.710)	5.284 (7.920)	30.67** (11.550)	-37.29*** (6.360)	-34.47*** (8.920)	5.410** (2.090)	-1.132 (3.290)
3.Province	0.489 (19.570)	-30.41 (24.740)	21.29* (8.760)	32.46* (15.000)	-0.755 (7.270)	-11.67 (10.870)	10.14*** (2.660)	-5.394 (4.330)
4.Province	51.2 (38.500)	-25.88 (51.130)	30.15* (12.860)	30.28 (26.520)	4.914 (12.850)	7.884 (19.630)	22.30*** (3.840)	9.162 (6.630)
Electricity	14.51 (22.290)	54.48 (36.170)	-8.913 (10.280)	-25.44 (16.880)	-8.45 (9.820)	-18.58 (14.910)	1.839 (3.040)	9.988 (5.520)
Water	-35.56 (18.830)	-21.79 (27.850)	0.129 (8.800)	26.89* (13.340)	-2.962 (7.180)	-16.48 (10.520)	-6.637** (2.420)	-13.22** (4.210)
own_car	-44.8 (45.130)	-0.0168 (45.420)	2.176 (14.100)	-1.184 (21.310)	-19.74 (12.270)	-16.48 (16.030)	-1.338 (4.090)	8.395 (6.470)
Remit	44.18* (20.590)	30.15 (27.140)	-7.244 (10.880)	26.93 (15.100)	9.579 (8.210)	28.80* (11.290)	7.188* (2.990)	6.517 (4.720)
apr_may	-28.82* (14.570)	11.61 (18.140)	6.81 (7.370)	-20.93 (11.910)	-2.873 (5.850)	-1.05 (9.020)	0.524 (2.230)	-4.677 (3.770)
jul_aug	-9.598 (14.420)	-38.41* (18.680)	0.567 (7.290)	-9.822 (11.610)	-7.068 (5.730)	14.29 (8.550)	-1.561 (2.080)	2.438 (3.430)
oct_nov	1.903 (16.180)	-18.06 (19.280)	-1.62 (8.690)	-23.82* (11.200)	1.084 (6.040)	3.535 (8.540)	-3.637 (2.230)	2.074 (3.660)
Fridge	20.13 (13.750)	19.31 (17.020)	2.743 (7.150)	12.28 (11.720)	1.118 (5.100)	29.39*** (7.370)	1.702 (1.890)	2.246 (3.050)
Shop	6.957 (13.680)	1.962 (18.230)	10.41 (7.750)	31.77** (10.800)	-9.404 (6.110)	6.107 (8.160)	-0.352 (2.110)	0.389 (3.680)
_cons	172.8*** (35.850)	280.8*** (49.460)	44.61** (17.180)	21 (27.590)	252.4*** (14.700)	360.5*** (21.720)	33.49*** (4.960)	37.85*** (8.420)

Table 3.3c

SUREG: Determinants of Time Spent in Different Activity Episodes _ Care

	Weekend				Weekday			
	Female 10-14	Female 15-19	Male 10-14	Male 15-19	Female 10-14	Female 15-19	Male 10-14	Male 15-19
care_work								
yhat	-19.49** (6.830)	-16.86 (13.880)	-2.679 (3.530)	-4.576 (4.740)	-20.06*** (2.840)	-24.47*** (4.610)	-4.557*** (1.050)	-4.039* (1.610)
middle_inc~e	10.26* (4.880)	7.769 (5.640)	-5.817* (2.560)	1.657 (2.790)	-0.896 (2.370)	0.533 (2.850)	0.609 (0.850)	-0.659 (1.240)
high_income	5.552 (6.310)	6.311 (6.450)	-6.688* (3.150)	0.486 (2.870)	-3.552 (2.670)	2.14 (3.150)	0.194 (1.000)	-0.718 (1.290)
rural	1.127 (5.240)	13.07* (6.410)	1.266 (2.670)	4.269 (2.830)	6.422** (2.440)	-2.78 (3.010)	-0.148 (0.920)	-2.536* (1.290)
own_dwelling	0.516 (6.760)	3.736 (7.020)	-7.389* (2.930)	-0.238 (3.310)	-11.05*** (3.120)	3.671 (3.940)	-1.469 (1.190)	2.276 (1.720)
pucca	-1.904 (4.690)	9.881 (5.850)	2.631 (2.490)	0.145 (2.560)	1.039 (2.200)	-2.225 (2.790)	-1.396 (0.820)	-2.269 (1.220)
2.Province	-21.38*** (5.790)	-5.717 (6.330)	1.214 (2.960)	-0.938 (2.820)	-6.572** (2.460)	-0.866 (2.950)	-1.929* (0.880)	-3.821** (1.220)
3.Province	28.75*** (6.330)	14.41 (7.360)	-4.905 (3.290)	1.164 (3.810)	24.65*** (2.870)	9.758** (3.670)	0.793 (1.150)	0.0747 (1.640)
4.Province	-6.039 (12.470)	-8.678 (15.320)	5.582 (4.820)	-3.184 (6.760)	-3.581 (5.090)	0.645 (6.650)	-0.588 (1.670)	-0.663 (2.530)
electricity	-19.77** (7.060)	-3.223 (10.760)	2.906 (3.790)	-2.152 (4.180)	0.721 (3.870)	-2.582 (5.020)	1.079 (1.300)	1.364 (2.090)
water	1.952 (6.110)	-13.04 (8.490)	0.202 (3.270)	0.00873 (3.370)	-2.155 (2.860)	3.246 (3.550)	1.389 (1.050)	3.146* (1.600)
own_car	-7.132 (14.490)	5.339 (13.620)	-2.255 (5.350)	1.686 (5.400)	-2.516 (4.820)	-5.551 (5.350)	-0.554 (1.770)	5.299* (2.450)
remit	1.598 (6.650)	-3.563 (8.040)	21.16*** (4.030)	12.83*** (3.820)	-2.572 (3.230)	17.97*** (3.780)	1.227 (1.290)	-1.694 (1.800)
bhu	0.387 (4.680)	8.163 (5.450)	-3.782 (2.450)	3.46 (2.470)	-0.234 (2.150)	1.086 (2.630)	-0.957 (0.810)	-4.522*** (1.210)
_cons	38.41*** (11.110)	9.329 (14.200)	9.463 (5.962)	0.964 (6.359)	33.77*** (5.690)	22.53** (7.140)	6.254** (2.120)	6.814* (3.090)

Table 3.3d

	<i>SUREG: Determinants of Time Spent in Different Activity Episodes _ Active Leisure</i>							
	Weekend				Weekday			
	Female 10-14	Female 15-19	Male 10-14	Male 15-19	Female 10-14	Female 15-19	Male 10-14	Male 15-19
active_lei~e								
Yhat	-106.3*** (22.500)	-149.0*** (36.110)	-78.92** (26.980)	-57.12 (43.550)	-93.95*** (7.340)	-73.37*** (9.580)	-139.3*** (8.230)	-74.40*** (11.310)
middle_inc~e	-26.7 (15.790)	-11.62 (14.690)	-41.83* (19.970)	-2.415 (25.680)	0.763 (6.160)	18.85** (5.940)	18.94** (6.720)	6.739 (8.740)
high_income	32.24 (20.720)	23.7 (16.830)	-30.24 (24.590)	0.835 (26.520)	-0.539 (6.920)	12.19 (6.580)	-1.495 (7.880)	22.36* (9.050)
rural	15.67 (16.300)	-17.59 (16.060)	2.107 (20.540)	-11 (24.400)	14.02* (5.970)	1.221 (5.940)	10.04 (6.780)	-3.524 (8.280)
own_dwelling	23.65 (22.290)	7.86 (18.200)	-77.24*** (22.890)	-118.7*** (30.570)	-5.227 (8.100)	-9.176 (8.210)	23.62* (9.320)	5.604 (12.120)
pucca	7.158 (15.330)	30.10* (15.280)	0.91 (18.970)	-2.755 (23.410)	1.933 (5.720)	1.205 (5.810)	17.59** (6.430)	28.56*** (8.570)
2.Province	65.56*** (19.080)	32.89* (16.500)	31.46 (22.970)	13.81 (26.050)	54.26*** (6.400)	41.03*** (6.140)	14.40* (6.930)	19.02* (8.540)
3.Province	-18.12 (20.800)	-5.594 (19.160)	8.291 (25.730)	-2.936 (35.150)	12.82 (7.440)	15.81* (7.630)	34.52*** (9.080)	80.26*** (11.580)
4.Province	39.61 (40.980)	17.73 (39.960)	62.89 (37.350)	51.66 (62.090)	28.96* (13.210)	19.51 (13.790)	10.4 (13.120)	31.8 (17.730)
electricity	-52.55* (23.150)	54.25 (27.910)	12.98 (29.190)	-35.58 (38.160)	-28.70** (10.010)	9.832 (10.420)	-13.56 (10.200)	18.98 (14.610)
water	0.422 (20.010)	-13.85 (21.680)	26.16 (25.530)	-2.23 (31.050)	-10.21 (7.410)	-16.92* (7.360)	9.765 (8.240)	-23.49* (11.260)
own_car	16.24 (46.480)	26.77 (35.930)	-0.0519 (41.130)	51.2 (48.750)	28.10* (12.460)	10.57 (11.250)	3.218 (13.890)	18.02 (17.260)
remit	-11.32 (21.300)	39.78 (21.200)	49.2 (31.530)	64.55 (35.290)	0.937 (8.340)	8.011 (7.960)	5.795 (10.160)	16.13 (12.650)
_cons	227.8*** (35.650)	134.8*** (36.630)	333.7*** (46.380)	367.2*** (57.820)	221.5*** (14.400)	135.1*** (14.610)	257.3*** (16.120)	184.7*** (21.090)

Table 3.3e

SUREG: Determinants of Time Spent In Different Activity Episodes _ Passive Leisure

	Weekend				Weekday			
	Female	Female	Male	Male	Female	Female	Male	Male
	10-14	15-19	10-14	15-19	10-14	15-19	10-14	15-19
passive_le~e								
Yhat	-33.49*	-55.42	-35.39*	-0.404	-64.05***	-67.11***	-48.00***	-8.587
	(15.570)	(39.490)	(15.310)	(23.290)	(6.240)	(11.280)	(5.240)	(7.360)
middle_inc~e	29.29**	0.866	5.015	-11.06	18.15***	5.804	7.174	13.28*
	(10.770)	(15.910)	(11.370)	(13.740)	(5.230)	(7.000)	(4.280)	(5.680)
high_income	11.8	4.685	39.04**	36.69**	31.01***	29.06***	25.57***	27.96***
	(13.530)	(17.870)	(13.660)	(13.750)	(5.600)	(7.510)	(4.810)	(5.670)
Rural	-38.04***	-32.81	-15.54	-25.03	-32.30***	-64.57***	-19.77***	-23.87***
	(11.260)	(17.510)	(11.550)	(13.010)	(5.030)	(7.010)	(4.290)	(5.350)
own_dwelling	-23.22	-22.72	-32.47*	-20.65	10.27	32.06***	7.667	11.6
	(15.350)	(19.650)	(12.980)	(16.410)	(6.880)	(9.720)	(5.940)	(7.890)
Pucca	34.43**	24.72	12.66	-16.85	25.59***	40.24***	20.61***	13.72*
	(10.580)	(16.510)	(10.810)	(12.560)	(4.860)	(6.880)	(4.080)	(5.570)
2.Province	-27.87*	3.954	-11	-31.93*	-0.537	-20.34**	-12.56**	-26.93***
	(13.030)	(17.680)	(12.960)	(13.880)	(5.390)	(7.130)	(4.370)	(5.520)
3.Province	-40.79**	-6.012	15.12	-40.33*	-18.06**	-22.79*	-28.56***	-36.80***
	(14.290)	(20.900)	(14.600)	(18.100)	(6.150)	(8.850)	(5.630)	(7.310)
4.Province	-73.36**	-52.66	-55.04**	-50.44	-50.72***	-50.88**	-38.45***	-33.89**
	(28.250)	(43.400)	(21.190)	(33.280)	(11.210)	(16.230)	(8.330)	(11.480)
Electricity	27.8	15.78	49.73**	10.91	33.93***	41.69***	24.50***	14.35
	(16.030)	(30.380)	(16.570)	(20.480)	(8.510)	(12.340)	(6.500)	(9.530)
Water	-17.12	57.45*	-13.44	-1.188	4.478	5.476	-11.06*	-7.278
	(13.840)	(23.710)	(14.450)	(16.430)	(6.300)	(8.710)	(5.250)	(7.340)
_cons	195.5***	169.9***	141.1***	169.9***	139.8***	160.0***	134.8***	125.3***
	(24.670)	(39.980)	(26.310)	(30.910)	(12.250)	(17.290)	(10.260)	(13.720)

Table 3.3f

SUREG: Determinants of Time Spent in Different Activity Episodes _ Subsistence Work

	Weekend				Weekday			
	Female 10-14	Female 15-19	Male 10-14	Male 15-19	Female 10-14	Female 15-19	Male 10-14	Male 15-19
subsistence work								
Yhat	-53.93** (17.450)	-21.61 (24.910)	-103.7*** (24.490)	-142.3** (47.930)	-61.70*** (5.193)	-56.96*** (9.008)	-124.1*** (6.588)	-133.2*** (11.430)
middle_inc~e	30.10* (12.350)	1.709 (10.260)	-22.4 (18.080)	12.01 (28.200)	0.2 (4.329)	-4.389 (5.544)	-4.928 (5.301)	8.538 (8.800)
high_income	1.316 (16.140)	-10.94 (11.620)	32.71 (22.570)	49.5 (29.600)	5.467 (4.859)	4.061 (6.143)	-2.719 (6.213)	5.122 (9.114)
Rural	15.47 (12.710)	10.57 (11.220)	82.23*** (18.510)	134.6*** (26.860)	11.58** (4.192)	29.44*** (5.546)	28.42*** (5.342)	99.65*** (8.352)
own_dwelling	6.949 (17.360)	-18.3 (12.610)	13.36 (20.920)	39.48 (33.890)	-0.765 (5.688)	-0.468 (7.678)	0.822 (7.354)	7.189 (12.190)
Pucca	-26.40* (11.980)	-38.41*** (10.570)	-6.053 (17.150)	-33.83 (25.670)	-14.76*** (4.021)	-14.78** (5.428)	-6.415 (5.069)	-7.607 (8.614)
2.Province	0.531 (14.780)	-10.17 (11.450)	-4.787 (20.730)	-37.63 (28.900)	-23.59*** (4.498)	-22.10*** (5.743)	0.656 (5.469)	4.014 (8.587)
3.Province	9.613 (16.100)	-6.215 (13.300)	-13.84 (23.230)	-93.22* (38.310)	-20.70*** (5.219)	-28.30*** (7.111)	-7.504 (7.155)	-40.42*** (11.660)
4.Province	-19.99 (31.750)	-25.26 (27.560)	-45.88 (33.850)	-15.49 (67.720)	-24.15** (9.263)	-49.08*** (12.880)	-18.09 (10.330)	-11.17 (17.840)
Electricity	14.4 (17.910)	-28.82 (19.330)	-51.63 (26.520)	12.32 (41.600)	-26.69*** (7.021)	-67.66*** (9.725)	-54.16*** (8.040)	-59.98*** (14.680)
Water	-3.675 (15.520)	-40.94** (14.950)	-29.51 (23.090)	-11.75 (34.040)	10.14 (5.200)	17.75** (6.862)	-17.14** (6.498)	-14.74 (11.310)
own_car	-0.669 (36.610)	-6.271 (24.910)	-10.06 (37.280)	-10.41 (53.160)	-0.665 (8.783)	10.53 (10.340)	-3.717 (10.940)	-9.063 (17.350)
Remit	-16.43 (16.710)	-13.73 (14.700)	-84.47** (28.640)	-24.23 (38.380)	-2.461 (5.882)	-17.47* (7.287)	-6.697 (8.015)	-15.41 (12.690)
apr_may	-6.131 (12.350)	-8.239 (10.270)	10.54 (17.030)	13.77 (28.980)	6.788 (4.376)	16.87** (6.042)	2.161 (5.653)	25.59* (9.957)
jul_aug	0.699 (12.250)	13.76 (10.680)	19.27 (16.740)	-30.31 (27.970)	-13.84** (4.282)	-4.34 (5.711)	-7.328 (5.271)	-8.042 (9.045)
oct_nov	30.74* (13.750)	15.34 (11.160)	-5.788 (19.790)	4.578 (27.560)	7.454 (4.506)	1.627 (5.716)	-5.956 (5.645)	-15.13 (9.672)
_cons	38.04 (28.510)	131.9*** (25.630)	147.6*** (43.690)	76.81 (66.050)	89.43*** (10.200)	109.3*** (13.790)	188.6*** (12.760)	167.7*** (21.410)

Table 3.3g

	Weekend				Weekday			
	Female	Female	Male	Male	Female	Female	Male	Male
	10-14	15-19	10-14	15-19	10-14	15-19	10-14	15-19
Market work								
Yhat	-30.94**	-28.86	-75.18***	-181.9***	-34.22***	-75.86***	-73.61***	-219.3***
	-11.22	-26.66	-19.59	-51.35	-3.645	-9.347	-5.65	-14.02
middle_inc~e	-15.70*	-8.216	47.72***	3.287	-6.972*	13.98*	-2.385	10.42
	-7.952	-10.99	-14.46	-30.22	-3.038	-5.752	-4.544	-10.8
high_income	-23.73*	1.599	2.652	-5.246	-2.874	-0.342	-1.517	6.804
	-10.39	-12.44	-18.08	-31.66	-3.412	-6.378	-5.325	-11.17
Rural	-24.17**	26.82*	-34.67*	-71.24*	2.265	0.304	-16.55***	-51.10***
	-8.176	-12.02	-14.78	-28.77	-2.942	-5.755	-4.578	-10.24
own_dwelling	12.89	6.445	37.02*	100.9**	1.952	-24.09**	-11.72	-12.58
	-11.17	-13.5	-16.75	-36.29	-3.991	-7.966	-6.303	-14.96
Pucca	4.878	0.948	2.405	42.53	-0.522	-3.315	-12.75**	15.29
	-7.71	-11.31	-13.71	-27.51	-2.821	-5.632	-4.345	-10.57
2.Province	-13.48	-4.267	-26.97	-3.465	-8.194**	-21.67***	-14.76**	-15.73
	-9.506	-12.26	-16.55	-30.94	-3.157	-5.961	-4.688	-10.53
3.Province	-4.501	-21.34	31.79	32.18	-10.47**	-22.73**	3.716	13.66
	-10.35	-14.24	-18.56	-41.06	-3.663	-7.381	-6.133	-14.29
4.Province	13.9	34.88	1.361	-24.76	-0.983	3.527	-0.946	5.702
	-20.41	-29.5	-27.07	-72.63	-6.5	-13.37	-8.854	-21.89
Electricity	9.067	-0.719	3.202	7.582	-0.528	10.76	20.54**	44.84*
	-11.51	-20.69	-21.21	-44.62	-4.926	-10.09	-6.891	-18.02
Water	-7.902	19.45	4.208	-67.12	7.540*	14.19*	2.874	36.63**
	-9.979	-16.01	-18.45	-36.48	-3.649	-7.12	-5.57	-13.88
own_car	-4.776	-18.55	-12.34	-76.66	-1.998	16.98	-1.126	-52.93*
	-23.91	-26.71	-29.56	-56.65	-6.208	-10.85	-9.364	-20.87
Remit	-6.27	-15.81	18.89	-78.47	-7.218	-16.01*	-4.992	-21.31
	-10.91	-15.76	-22.72	-40.91	-4.158	-7.644	-6.861	-15.27
apr_may	14.47	-22.57*	23.2	9.343	5.832	3.867	-1.598	11.71
	-8.366	-11.13	-14.88	-29.38	-3.135	-6.248	-4.939	-11.5
jul_aug	-9.823	-13.63	-21.7	42.24	1.535	-7.119	-9.436*	18.33
	-8.299	-11.58	-14.64	-28.36	-3.068	-5.906	-4.606	-10.45
oct_nov	-2.873	-12.55	-0.0941	-8.028	3.233	4.427	-2.626	0.722
	-9.312	-12.1	-17.31	-27.95	-3.229	-5.911	-4.933	-11.17
_cons	43.90*	19.63	37.88	162.0*	32.40***	83.33***	87.59***	174.4***
	-18.39	-27.44	-35.18	-70.5	-7.162	-14.31	-10.94	-26.24
N	451	353	403	302	2365	1958	2592	1981

Table 3.4a

Determinants of Time Spent in Different Activity Episodes (Learning, Games and Socialising) at Educational Institutes

	1		2		3		4		5		6	
	Learning		Games		Socialising							
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Student	316.4**	273.3**	109.1**	32.17*	5.911	13.45+						
	(0.0000)	(0.0000)	(0.0000)	(0.0019)	(0.594)	(0.085)						
Age group (15 to 17)	1.327	4.205	-10.17+	-35.23**	2.755	9.207+						
	(0.719)	(0.322)	(0.053)	(0.0000)	(0.613)	(0.081)						
Age group (18 to 24)	-6.597	-18.88**	-34.22**	-25.08*	12.45*	21.45**						
	(0.127)	(0.0000)	(0.0000)	(0.015)	(0.034)	(0.0000)						
Married	-95.35**	-79.07**	34.18	-25.5	-7.588	5.568						
	(0.0000)	(0.0000)	(0.134)	(0.370)	(0.608)	(0.681)						
Middle income	-15.37**	-6.806+	-6.674	-1.23	4.418	-1.314						
	(0.0000)	(0.0000)	(0.180)	(0.858)	(0.394)	(0.798)						
High Income	-14.65**	-7.884*	-7.111	3.853	14.70**	6.251						
	(0.0000)	(0.043)	(0.157)	(0.566)	(0.003)	(0.193)						
Kids less than 7 years	1.069	-40.40*	-20.19	-297.5	22.51	5.919						
	(0.950)	(0.050)	(0.444)	(.)	(0.102)	(0.716)						
Rural	-8.115**	1.056	2.696	7.516	-7.261+	1.249						
	(0.006)	(0.750)	(0.519)	(0.186)	(0.083)	(0.764)						
_cons	-7.327	21.43**	-177.7**	-119.4**	-90.28**	-80.75**						
	(0.416)	(0.002)	(0.0000)	(0.0000)	(0.0000)	(0.0000)						
sigma_cons	73.96**	69.49**	64.06**	65.91**	69.81**	59.62**						
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)						
N	3000	2030	3000	2030	3000	2030						

Notes:

- p-values in parentheses (+ p<0.1, * p<0.05, ** p<0.01).
- Student is our variable of interest. It's a 0-1 dummy variable.
- The base category for age bracket is 10-14 years (the dummies included are for age group 15-17., and age bracket 18-24).
- The base category for the income variable is low income.
- Kids less than 7 years is a dummy variable which is onr if kids less than 7 are present in the household.
- Rural is also a 0-1 dummy variable.

Table 3.4b

*Determinants of Time Spent in Different Activity Episodes (Games and Socialising)
in Location Public Space*

Dependent Variable	Games		Socialising	
	Male	Female	Male	Female
Student	74.55** <i>0.000</i>	23.55 <i>(0.165)</i>	-65.39** <i>0.000</i>	-17.47 <i>(0.443)</i>
Age group (15 to 17)	-37.26** <i>0.000</i>	-85.54** <i>(0.002)</i>	54.92** <i>0.000</i>	-2.714 <i>(0.928)</i>
Age group (18 to 24)	-68.44** <i>0.000</i>	-76.22** <i>(0.002)</i>	51.41** <i>0.000</i>	33.83+ <i>(0.058)</i>
Married	-122.8** <i>0.000</i>	-148.3** <i>0.000</i>	12.67* <i>(0.016)</i>	17.65 <i>(0.299)</i>
Low middle income	-9.472 <i>(0.158)</i>	18.21 <i>(0.347)</i>	4.663 <i>(0.378)</i>	11.37 <i>(0.546)</i>
Middle income	-2.878 <i>(0.684)</i>	18.56 <i>(0.380)</i>	13.72* <i>(0.014)</i>	19.07 <i>(0.347)</i>
High income	-1.313 <i>(0.853)</i>	46.21* <i>(0.031)</i>	2.33 <i>(0.681)</i>	26.33 <i>(0.178)</i>
Kids less than 7 years	-20.14* <i>(0.010)</i>	-42.47+ <i>(0.064)</i>	-11.26* <i>(0.018)</i>	-17.9 <i>(0.266)</i>
Rural	-1.765 <i>(0.703)</i>	-34.54* <i>(0.018)</i>	14.72** <i>0.000</i>	-51.89** <i>0.000</i>
_cons	-53.07** <i>0.000</i>	-103.2** <i>0.000</i>	-81.73** <i>0.000</i>	-193.2** <i>0.000</i>
Sigma				
_cons	133.8** <i>0.000</i>	156.4** <i>0.000</i>	122.6** <i>0.000</i>	137.1** <i>0.000</i>
N	7613	1632	7613	1632

Notes:

- p-values in parentheses (+ p<0.1, * p<0.05, ** p<0.01).
- Student is our variable of interest. It's a 0-1 dummy variable.
- The base category for age bracket is 10-14 years (the dummies included are for age group 15-17., and age bracket 18-24).
- The base category for the income variable is low income.
- Kids less than 7 years is a dummy variable which is onr if kids less than 7 are present in the household.
- Rural is also a 0-1 dummy variable.

7. SUMMARISING THE RESULTS

I began this essay by arguing that changes in the distribution of time in different “activity contexts” can be interpreted as a proxy for change in the distribution of socialisation contexts. In light of the above analysis, we can now consolidate our results. We find that even on weekends, when the institutional structure of school is not present, both male and female students spend time on the gender neutral task of learning in their own dwelling. With respect to unpaid work, however, we find that schooling, in a patriarchal society like Pakistan, is not associated with boys doing more unpaid housework/care-work in their own dwelling. Thus, although school provides girls and boys an opportunity to spend time away from their own dwelling and with peers and teachers at school exposing them to new ideas and making them more independent in their outlook, the interaction does not appear to make them more gender neutral at home and they do not start engaging in chores which are traditionally considered to be carried out by girls.

Similarly, with respect to active leisure, we find that on weekend (Sundays), active leisure for adolescent girls declines while there is no significant change for adolescent boys that is associated with the probability of school enrolment. This result reinforces our result from the Tobit model that the public arena remains a masculinised space and schooling does not change this social reality.

Additionally, with respect to passive leisure, older female students spend more time than male students, enjoying watching TV and saying their individual prayers, in their own dwelling, again reinforcing the trend of being socialised in their own home. In contrast, the public spaces remain male-dominated.

8. CONCLUSION

This paper extends the time use literature on Pakistan, and mitigates issues of endogeneity present in existing studies: I employ a two-stage approach to investigate if school enrolment makes the lives of boys and girls more similar. I looked at student activities on Sundays, when the institutional structure of the school does not influence time-use activities and conclude that while girls and boys are substituting unpaid and paid work respectively for the gender neutral task of learning, we still do not find any evidence of school enrolment being associated with boys doing increased household/ care-work. Care-work still remains the deeply entrenched responsibility of girls. On weekdays we look at location data and find that public arena remains a heavily masculinised space, and school enrolment status is not associated with increased gender balance in these spaces. Of course, school enrolment, by definition, increases time away from girls and boys own dwelling and with peers and teachers at school, but is not associated with increased presence of girls in public parks, libraries, community centers and similar locations in the public arena. Findings show that girls are able to travel to school, but this does not necessarily manifest in a greater presence of women in other public spaces.

Pakistan represents a collective, predominantly Islamic culture, where parental supervision and dominance continues for much longer than is the case of the more individualistic Western societies. In the West children are encouraged to become independent at an early age, so that as they grow up they are able to take their

decisions independently. However, in collective societies like Pakistan, every individual draws their identity first and foremost from their family: their actions, in turn, reflect on the prestige and honor of the family. In such an environment, behavioural and psychological independence may not be encouraged in young adults, especially girls. Therefore, although, school in itself is an important site of socialisation and does have the potential to make an individual more autonomous and provides an opportunity for both boys and girls to substitute their time toward the gender neutral task of learning, some deeply entrenched norms associated with mobility and the traditional division of paid and unpaid work remain unchanged. This points to the need to investigate the aspects of schooling beyond enrolment, specifically quality of teaching, curriculum, and student-teacher-parent interaction that may be the pathway through which social norms maybe changed.

ANNEXURE

TIME ALLOCATION CATEGORIES

Labour Market Work: Wage and salary employment other than domestic work, out workers, contractor for supplies and other services for an establishment, home-based work for an establishment, domestic and personal services produced by domestic work, work as employer/self-employed for an establishment, construction of public works/ common infrastructure – roads, bridges, etc., paid working in apprenticeship, internship and related positions, travel to/from work and seeking employment in establishments, paid crop farming, paid tending animal and fishing, paid food preservation and making and selling textile, petty trading and street vending. Unpaid employment in establishment, unpaid work for family, including crop farming, kitchen gardening, tending animal and fishing, purchase of input and goods for subsistence purpose, food processing and preservation activities, making and selling textiles and leather crafts, building and extension of dwellings, unpaid petty trading and street vending, community services and help to other households.

Household work: Collecting fuel firewood and dung, collecting water, preparing food, cooking and serving meals, cleaning the dwelling and textiles, shopping for personal good, household maintenance and improvements, chopping wood, heating water and lighting fire not for immediate cooking purpose.

Care Work: Physical care of children, sick, disabled and elderly, accompanying children, sick, disabled and elderly for physical services and supervising children, sick, disabled and elderly.

Learning: Time spent in general education, home work and course related studies, non-formal education, additional study or preparation of exams, work related to training, and accessing information by computer and visiting library.

Active Leisure: Social and cultural activities, time spent in mass media use and rest and relaxation.

Passive Leisure: Watching TV, other mass media.

Sleep and Personal Care: Sleeping, resting due to illness, eating and drinking, time spent in personal care.

Variables	Explanatory Variables
Student	Binary variable; =1 if data collected on Sunday = 0 otherwise
P(student) = probability of being a student	Continuous variable
Control Variables	
Weekend	Binary variable; =1 if data collected on Sunday only = 0 otherwise
Weekday	Binary variable; =1 if data collected on a weekday = 0 otherwise
Age	Categorical Variable: Years
Marital Status	Binary variable; =1 if individual was ever married (includes widowed, divorced) = 0 otherwise
Wealth Quartile	Categorical Variable; Constructed using monthly household income. =1 if low income (Base) =2 if middle income =3 if high income
Children Under 7 years Province	Continuous Variable: Number of children (below 7 years) in the household Categorical Variable; =1 if individual is from Punjab (Base) =2 if individual is from Sindh =3 if from Pakhtunkhwa (KPK) =4 if individual is from Baluchistan
Remittances	Binary variable =1 if household's main source of income are remittances =0 otherwise
Clinic	Binary variable =1 if household has a clinic within 2km distance =0 otherwise
Primary School	Binary variable =1 if household has a primary school within 2km distance =0 otherwise
Secondary School	Binary variable =1 if household has a secondary school within 2km distance =0 otherwise
Bus	Binary variable =1 if household has a bus within 2km distance =0 otherwise
Suzuki / Van	Binary variable =1 if household has a van within 2km distance =0 otherwise
Train	Binary variable =1 if household has a train within 2km distance =0 otherwise

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