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ANALYSIS OF GENDER GAP AT THE SCHOOL
LEVEL IN THE PUNJAB: Pakistan 2007-08

Saher YUSUF*

Using the data of Multiple Indicator Cluster Survey (MICS) for the years 2007-08, this study employs Oaxaca-Probit estimation technique to measure gender gap at the school level in the province of Punjab, Pakistan. The analysis is also disaggregated at the rural-urban level. Results suggest a strong pro-male bias under all specifications except in the urban domain where a marginal pro-female bias is found. Unobservable factors or cultural characteristics strongly and significantly determine the enrolment for both the sexes.

I.   Introduction

Education is considered to be a process through which the human centered development process is triggered. The required skills, attitudes and abilities of humans are developed, hence, it complements the economic, social and political demand of a country. However, in case of Pakistan, this process is still on-way because now the country faces lack of skills and abilities to support its economy. Stern (2001) nominates education as a key determinant of development as its quality and quantity reflects on the labor force, institutions, governance and the investment climate.

As one of the eight Millennium Development goals, education has increasingly proved itself a priority for an international community and the governments in developing countries. The growth of private sector in providing educational services has been hailed as an important determinant in the move towards achieving the goal of universal primary education. However, in developing countries like Pakistan where there is still a significant gender gap and where the private sector accounts for an increasing proportion of enrolment and institutions, the significance of public-private partnership needs to be looked at through a gender perspective. In pursuit of a clear view on progress of this segment, this study aims to measure the respec-

* Teaching Associate, Lahore School of Economics, Lahore, Pakistan.

tive gender gap at the school level in the province of Punjab, Pakistan, and aims to identify the determinants of enrolment. It is also of interest to note as to how the rural-urban divide contributes to this disparity and whether there are any important differences across the region. Following are the research questions which this study aims to answer:

1. What is the gender gap at the school level for enrollment in five years of schooling in Punjab, Pakistan?
2. How is the rural-urban divide contributing to this disparity?
3. What are the main factors determining enrollment?

In pursuit to answer the above research questions, the study is divided into six sections. Section II, gives an overview of the existing literature relevant to this analysis. Section III includes details on the data used for analysis. Furthermore, section IV explains the methodology employed in this study, followed by results presented in Section V. Lastly, Section VI concludes and summarizes the main findings.

II. An Overview of the Literature

The largest component of investment in human capital is represented by enrollment in schools [Schultz (2002)]. Stern (2001) nominated education as a key determinant of development while discussing that its quality and quantity reflects on the labor force, institutions, governance and the investment climate.

One of the key issues that undermine this sector is the disparity which exist between the male and female education which represents a forgone opportunity of the contributions that these females could have made. Lloyd et al. (2007) discussed demand and supply side factors for girls in rural Pakistan, using probit estimation technique which leads to gender disparity in schools enrollment. On the demand side the determinants of gender disparity were poverty, safety and mobility (of girls), while on the supply side the factors included low investment in girl's schooling. Furthermore, mothers' education has also been identified as an important factor affecting probability of girls to attend school. It was discussed that the least educated parents were more unlikely to send their daughters to school. Household income and female enrollment were found positively related, thus making wealth a significant factor.

Hamid and Siddique (2001) analyzed the household characteristics for formal and informal workers in industrial units in three major cities of Pakistan: Faisalabad, Sialkot and Karachi, which affect the likelihood of a child to attend the school or not. The findings include mother's education in addition to income as positive demand which affects schooling. The work status of father also influence the education decision for a child. It has been previously observed that low household income, low oc-

cupational status, low education of a household head and male dominance in decision making plays a key role in constraining demand for schooling. The perception of equality of education for males and females is found to be different; for males it is the equality in the educational expenditures, whereas for female counterparts it is the equality in terms of the level of education. Two qualitative response models were used in this study to estimate relationship between households decision to educate their children. First, the likelihood of boys and girls attending school was estimated and in the second estimation, the probability to discontinue school was studied. Other variables which have been used to explain gender gap include family size, females, working/total female members, males, working/total male members.

In one of the studies, Baluch and Shahid (2009) investigated the gender disparity at the primary school level with a magnitude of 11.13 per cent. The study calculated the gap, using probit estimation technique and found that boys were preferred group as compared to female counterparts. However, the authors discussed that such a gap might reflect other reasons like cultural, social and traditional expectations regarding females to be housewives in future, whereas males are considered to be the earning members at a family. The study also finds other social variables like age of a household head, educational status of the wife, education of the households both positively and statistically, significant for both male and female students but to a greater extent for female students. Arif et al. (1999) explored determinants of the school enrolments while focusing on gender differentials. The paper discusses the linkage between primary school enrolments and poverty, and finds that poverty does affect primary school enrolments negatively, particularly in case of girls schooling. The paper also finds that poverty affects male and female enrolment rates at the same degree whereas the effect of income is different for both. In case of girls, it is the availability of additional financial resources that support their enrollments. This was measured using Logit model technique and dividing households of the sampled children into poor and non-poor categories.

This paper adds to the existing literature by decomposing the gender disparity at school level in addition to quantifying the gap and identifying determinants of enrolment in the province of Punjab, Pakistan. Further, disaggregated analysis is carried out for rural and urban areas of Punjab. Oaxaca-Probit methodology employed in this paper facilitate the analysis by providing an insight into the explained and unexplained portions of the gap calculated.

III. The Data

The data for analysis has been taken from the Multiple Indicator Cluster Survey (MICS) for the years 2007-08 for the province of Punjab, Pakistan. It is a tehsil level representative survey with a total sample size of 91,280 households.

The target sample is all children of school going age (5-11 years) for enrolment in the five years of schooling. In the survey (103,761 children) 57 per cent were actually enrolled in the province of Punjab (Table 1); out of which 59 per cent were boys and 55 per cent were girls. This gives the first indication of the gap in enrolment of boys and girls. Further, given the difference in the rural and urban regions of the country, the study also extends to a disaggregated analysis at the urban and rural regions to measure and compare the differentials across regions in the province of Punjab. The overall enrolment rate in urban areas (65.6 per cent) is more than 10 per cent points larger than in the rural areas (52.9 per cent). Further, the gap in urban areas between boys and girls is though negligible but it is actually in favor of girls. However, the gap is substantial in favor of boys in the rural areas (about 5 per cent).

The key variable of interest is the enrolment status of boys and girls which is expected to be determined by a host of characteristics, such as, household wealth, number of household members, mothers' education, age of the household head, education level of the household head, gender of the household head, distance to school and the proportion of male and female working in the family. The summary statistics given in Table 2 shows average characteristics of the two types of households. First, the households where children attend the public (government) schools and second, the households where children attending the private schools. The figures confirm that children attending the public (government) schools, capture the largest share of 28,122 households, followed by 16,470 households with children attending the private school.

The average of variables with their respective household type confirm trend of the hypothesized as suggested by the previous studies. For example, the wealth score of households sending children to private school is greater as compared to those sending children to public (government) schools. However, households using both public and private schools fall at an average between the wealth score of the other two types of households. Hence, these statistics are compatible with findings of previous studies that households with higher income and wealth levels tends to send their children to private schools as they perceive them to be better in providing quality education, better environment and other facilities.

The average follows a similar trend for variables; mothers' education level and education level of head of the household which are again higher for those attending a private school then those enrolled in public schools. The family size variable also shows a disparity between an average for households where children attend the public (government) schools; with an average household size of 8.1 members, and for those attending the private schools a lower average of 7.4 members is follwed. Hence, this again reiterates the difference which is found between the average household characteristics of these households.

TABLE 1

Summary Statistics for Enrolement in Five Years of Schooling

Variables	No. of Children	Rate (%)
Total sample.	59098	57.0
Rural.		52.9
Urban.		65.6
Boys – total sample.	31516	58.5
Girls – total sample.	27582	55.3
Boys in Rural region.	20444	55.5
Boys in Urban region.	11072	65.2
Girls in Rural region.	17020	50.1
Girls in Urban region.	10562	66.1

TABLE 2

Summary Statistics

Variables	Public Only Households	Private Only Households
Number of households.	28,122	16,740
Rural.	76.9%	39.9%
Urban.	23.1%	58.5%
Family size.	8.12	7.47
Age of the household head.	43.20	41.3
Education level of the household head.	2.22	3.11
Mothers' education level.	1.41	2.37
Wealth index.	2.52	3.85

The wealth index is calculated by using principal components analysis which calculates a wealth score for every household. The wealth score is further used to construct wealth quintiles. The principal component analysis is done by using household goods and assets data.

IV. The Methodology

The gender gap in school enrollment has been studied by employing the Probit model in the literature [Handa (1996), Rahji (2005)]. While this allows quantification of the gender gap but it does not allow an understanding that difference between the two groups or some unobservable characteristics like social norms contribute to the observed gap. The Oaxaca-Probit model estimation technique allows such decomposition and has been widely used in the labor economics for decomposition of the earnings gap [Watson (2007)]. This methodology is being adopted for examining gender disparity in schools enrolment.

1. Regression Analysis

The first part of the analysis entails fitting an underlying Probit model, which uses the normal distribution for estimation:

$$Pr\left(E_i = \frac{1}{X}\right) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{zi} e\frac{ud^2}{2} \tag{1}$$

where Z_i is from the estimation of the following specification:

$$Y_m = \alpha + \sum \beta_i \, X1_i + \sum \gamma_j \, X2_j + \mu_m \tag{2}$$

where $Y = 1$, if child is enrolled in school, zero otherwise. The explanatory variables include the vector of household characteristics ($X1^i$) and vector of the community characteristics ($X2_j$). Equation (2) is estimated for the overall sample and then for two different sub-samples. Initially, the study aims to estimate the overall gender gap for a sample of enrolment in five years of schooling followed by a disaggregated analysis that estimates the respective gaps in urban and rural regions of Punjab, Pakistan.

The household characteristics vector ($X1^i$) include family size which is the number of household members, wealth score of the family, proportion of females working (females working/total female members) and proportion of males working (males working/total male members) in that household. The proportion of working males and females in a family shows employment trend of a household and gives an indication of how many people work in a given household. Employment reflects better income levels in a household, and hence, can translate into increased demand for schooling as suggested in the literature. Also, the wealth score which is an indicator of a family income and assets compliments the above hypothesis. Finally, household size can act as a strain on resources, and hence, negatively impact enrolment.

Age of the head of a household is an indication of how much experience he/she has as a household head along with his/her occupational status and stability in terms of accumulated wealth. Hence, it is hypothesized to have a positive effect on schooling decisions. Moreover, education of head of a household signals parental education and was considered significant in determining children enrolment, as suggested by Lloyd et al. 2007. Education level of a mother has a very strong expected impact on schooling for both sexes but especially in the case of girls it has greater tendency to increase probability of girls attending school[1] and are more likely to have representation in the household decision making. Furthermore, a dummy for gender of the head of a household (male=1) is hypothesized to affect enrolment negatively with a much larger and negative effect on girls. Since most household heads are male in the sample, it is expected that with their dominant roles in household decision making, male heads might oppose female schooling which might even reflect cultural norms or traditions associating less importance with male education.

Community characteristics vector $(X2_j)$ include a dummy representing area of residence (one if household is in rural area) which would facilitate our analysis in finding how the location of households determine enrolments. Further, another dummy equals to one if a public (government) school is located within two kms from the household and zero otherwise. It is used as a proxy for factors like transport cost and ease of access.

2. Oaxaca Decomposition Analysis

The mathematical model for calculation of the gender gap entails subtracting the average probability of enrollment for girls from that of boys where the average probability of enrolment is calculated using the Oaxaca-Probit methodology. Thus, the gender gap (GAP) in enrollement is defined as difference in the predicted enrollment rates for boys and girls:

$$GAP = P(Xb, \hat{\beta}b) - P(Xg, \hat{\beta}g) \tag{3}$$

where the predicted probability of boys being enrolled is:

$$P(Xb, \hat{\beta}b) = \frac{1}{Nb} \sum_{i=1}^{Nm} \varphi(Xb, \hat{\beta}b) \tag{4}$$

and the predicted probability of girls being enrolled is:

$$P(Xg, \hat{\beta}g) = \frac{1}{Nf} \sum_{f=1}^{Nf} \varphi(Xg, \hat{\beta}g) \tag{5}$$

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[1] Also suggested by Hamid and Siddique (2001).

The reference group in the model is the girls' group. The gap calculation (above) is composed of two portions. The first part, an explained portion, is obtained by estimating the enrollment rate of girls, if they possess the boys' characteristics. This part of the outcome differential is explained by group differences in the predictors (X_s):

$$EXP = P(Xb, \beta g) - P(Xg, \hat{\beta}g) \tag{6}$$

The second part is an unexplained portion, which is the change in enrollment, occurring if the probability of girls' enrollment is determined by boys` coefficients:

$$UEX = P(Xg, \hat{\beta}b) - P(Xg, \hat{\beta}g) \tag{7}$$

This is usually attributed to discrimination but it is important to recognize that it also captures all potential effects of differences in the unobserved variables. Hence, the total gap of both the explained and unexplained portions is composed as:

$$GAP = EXP + UEX \tag{8}$$

V.   The Results

The results are divided into Sections A and B: Section A reports the gender gap estimated at the school level for a sample for enrolments in five years of schooling; whereas Section B present results for gender disparity analysis across the rural and urban regions. Equation (1) is estimated to find the respective results under all specifications using the Oaxaca-Probit regression.

Section A: *Overall Gender gap at the school level*

For the overall sample when enrollment is determined separately for both sexes interesting results emerge. Most determinants are similar for both genders but if family size and mothers' education level differs, the family size affects enrolments (both negatively and significantly) in case of girls which is consistent with literature as larger family size increase dependency ratio and dilute resources available for each family member. However, this constraint appears to be binding only girls since family size is insignificant for boys. This may suggest that girls are disadvantaged group and their enrollment as suggested by Arif et al. (1999), depends on availability of additional funds and not regular stream of income of a household.

It is particularly interesting that while mothers' education does not impact in any significant manner the enrollment of boys has a significant and positive impact

on girls, enrollment. This might be attributable to more awareness allowing such females to overcome cultural norms giving importance to their female child's education and also to their male child.

For both boys and girls, age and education level of the household head turns out to be positive and significant. However, for girls these variables have a greater magnitude and hence there is more impact on probability of being enrolled, as compared to their male counterparts. Gender of household head, in both cases suggests a negative relation with enrolments as most of the households are lead by male members. For girls, the change in probability of not being enrolled is 11.9 per cent which is greater than boys' probability of 9.7 per cent which clearly indicate that if head of the household is a male, this would have a negative impact on both sexes but it would be more pronounced for girls.

The wealth index for both sexes is strongly positive and significant but as indicated by its magnitude, it has a stronger affect on girls enrolment with a change in probability of 25 per cent for girls as compared to 17.8 per cent for boys. This again falls in line with findings of previous literature that income is a key determinant in enrolment of both, the boys and girls. However, the proportion of working male and female affects enrollment negatively and significantly in both cases. This might suggest that boys and girls who are of this school going age cohort, might be working and hence have substituted their educational attainment with work due to financial constraints or other demand side impediments.

Turning to the community characteristics we find that residence in rural domain affect negatively and significantly, enrolment of both boys and girls. This gap is further analyzed in the next section as we turn towards disaggregated analysis. School at close proximity (less than 2 kms away) plays a significant role in increasing enrollment for both genders. However, the impact is larger for girls (20 per cent) which encourage their enrollment as compared to that for boys (16 per cent). Distance to school which capture dimension of transport cost and security issues seems to be an important impediment to enrollment particularly to girls' schooling.

The average probability of enrollment for boys is higher at 0.55 where as for girls it is at 0.52. Further, the gap in enrollment between the two genders of 0.03 is statistically significant which points to be biased in favour of boys. Oaxaca decomposition of this gap will reveal the cause of difference in enrollment level and whether it is actually attributable to households favoring male children in schooling decision or to differences in characteristics. The observable or the explained portion of the gender gap is positive (0.001) but insignificant indicating the portion of the gap explained, if boys' characteristics were possessed by girls, which is due to endowment differences (Table 4). On the other hand, the coefficients or unexplained portion of the gap is positive (0.02) and significant suggesting that these are the unobserved characteristics which constitute a large portion of the gap. These un-

observed factors, as suggested in the literature, include factors like motivation and awareness, social and cultural constraints, parental preferences, discriminating social norms, perceptions associated with women education and low representation of women in decision making. Thus, at the aggregate level, there is an evidence of biasness towards male enrollment at this level.

TABLE 3

Marginal Effects from Probit Regression for Overall Sample

Dependent Variable: Enrolled	Boys	Girls
Family size.	-0.004	-0.01***
	(0.10)	(0.00)
Age of the household head.	0.003***	0.004***
	(0.00)	(0.00)
Education level of the household head.	0.10***	0.11***
	(0.00)	(0.00)
Mothers' education level.	0.01	0.02***
	(0.23)	(0.00)
Gender of the household head.	-0.10**	-0.12**
	(0.03)	(0.01)
Wealth index.	0.19***	0.25***
	(0.00)	(0.00)
Area.	-0.09***	-0.05**
	(0.00)	(0.02)
Proportion of Male working.	-0.36***	-0.15***
	(0.00)	(0.00)
Proportion of Female working.	-0.21***	-0.37***
	(0.00)	(0.00)
Distance to Public school.	0.16***	0.20***
	(0.00)	(0.00)
N	32123	31802

p-value in parentheses, *** p<0.01, ** p<0.05, *p<0.1

TABLE 4

Oaxaca Decomposition of Gender Gap - Overall Sample

Gender gap.	0.03***
	(0.00)
Endowments.	0.001
(Observable Factors).	(0.59)
Coefficients.	0.03***
(Unobservable Factors).	(0.00)

p-value in parentheses, *** p<0.01, ** p<0.05, *p<0.1

Section B: *Results of the Disaggregated Sample*

a)   *Gender Gap in Urban region at the school level in Punjab, Pakistan*

Referring to Table 6, this segment suggest an opposite effect in case of few variables, like family size is not significant for girls, whereas for boys it is negative and significant. In case of age of the household head, it turns out to be insignificant for girls and positive and significant for boys. However, mothers' education level is significant and positive for girls but insignificant for boys. This result is consistent with findings in literature. Sather and Lloyd (1994) discussed allocation of expenditure on education by gender in Pakistan and found that in the urban domain of children mothers who had attended school, received 60 to 75 per cent more educational expenditures as compared to children of those mothers who never attended school. The education level of the household head is positive and significant for both sexes in urban region, whereas, gender of the household head is insignificant in this case. Wealth index is again both positive and significant in determining enrolment with the same change in probabilities of being enrolled. Furthermore, the proportion of male working has a negative and significant impact on enrolments of both boys and girls whereas the proportion of female working does not significantly impact the enrolments in case of boys. Distance to school in this region has a positive and significant impact on schooling for both boys and girls given that the school is within the distance of two kilometers.

Disaggregating the analysis further, results shown in Table 5 suggest a gender gap of -0.01 at 10 per cent level of significance in the urban domain for these five years of schooling. This shows an interesting finding that in the urban region, the gender gap is negative and more girls are enrolled as compared to boys reflecting a marginal pro-female bias. Results in this region shows that average probability of enrollment for boys is low (group 1: 0.62) as compared to girls (group 2: 0.64).

TABLE 5

Oaxaca Decomposition of Gender Gap - Urban Region

Gender gap.	-0.01*
	(0.05)
Endowments.	0.004*
(Observable Factors)	(0.09)
Coefficients.	-0.02**
(Unobservable Factors)	(0.01)

p-value in parentheses, *** p<0.01, ** p<0.05, *p<0.1

TABLE 6

Marginal Effects from Probit Regression for Urban Sample

Dependent Variable: Enrolled	Boys	Girls
Family size.	-0.01**	0.00
	(0.02)	(0.97)
Age of the household head.	0.003 **	0.001
	(0.03)	(0.32)
Education level of the household head.	0.09 ***	0.07***
	(0.00)	(0.00)
Mothers' education level.	0.02	0.05 ***
	(0.22)	(0.00)
Gender of the household head.	-0.06	-0.08
	(0.40)	(0.33)
Wealth index.	0.15***	0.14***
	(0.00)	(0.00)
Proportion of Male working.	-0.33 ***	-0.14 **
	(0.00)	(0.02)
Proportion of Female working.	-0.05	-0.25 *
	(0.60)	(0.09)
Distance to Public school.	0.07*	0.08**
	(0.06)	(0.03)
N	9352	9520

p-value in parentheses, *** p<0.01, ** p<0.05, *p<0.1

b) *Gender Gap in Rural region at the school level in Punjab, Pakistan*

Table 7 shows the gender gap in the rural domain of Punjab, Pakistan. As expected, we have a positive gender gap 0.05 with boys having a significantly higher average probability of being enrolled at 51 per cent as compared to girls with 46 per cent. The unexplained portion of the gap in this case forms a significant portion and attributes much of the gap to the unobservable factors or cultural characteristics that could not be captured or quantified but largely contribute towards this gap.These can range from factors like motivation, ability and preferences contributing to the decision to send a child to school or not.

The decomposed analysis for boys and girls indicates the family size as insignificant for boys but are both negative and significant for girls (Table 8). This complements the trend that has been observed in the literature that larger families located in rural domain are less likely to send girls to school, due to lack of resources or funds. The age of the household head is both positive and significant in both cases, but more for girls. The education level of head of the household is both positive and significant for boys and girls and again with a greater change in probability it determines girls' enrolment. However, in case of mothers' education level, again girls are beneficiaries, whereas, boys remain indifferent to this. It has been suggested in the previous studies that for girls' likelihood of attending school; mothers' education level is more important than for boys. Interestingly, in this region, gender of the household head being a male affect the enrolment negatively, at a significance level of 5 percent with a negative change in probability of 10.5 per cent for boys and 11.2 per cent for girls. As per hypothesis of this study, the wealth score determine enrollment strongly and positively, in case of both genders, more pronounced in case of female contenders with 5 per cent additional change in probability being enrolled as compared to boys. The proportion of both male and female working in this case has a negative and significant impact on enrolment for both sexes which says much about the trade-off in the rural region between the work and schooling. Those who are self-employed in the rural areas or working elsewhere usually drop schooling due to their budget constraints. The availability of a school within a distance of two kilometers encourage rural households to send girls to school with a greater change in probability of 25 per cent as compared to 21 per cent for boys. This implies that for girls, a nearby school reduces their safety concerns and transport cost which usually lower the probability of a girl being sent to school.

However, urban domain with a marginal pro-female bias depicts a better picture as compared to rural domain that has a large gender differential in case of school enrolments. Factors like household income distance to school and parents education plays a vital role here. It is very interesting and in line with our hypothesis that mothers' education is positive and significant and it affects girls' enrolment in both regions, whereas, in case of boys it turns out to be insignificant. Gender of the household head, again provides a unique finding suggesting that if household head is a male it would affect enrollment negatively in the rural region and would be insignificant in the urban region. This shows how demographics will influence on the respective role of the household heads or their behavior.

TABLE 7

Oaxaca Decomposition of Gender Gap for Rural Region

Gender gap.	0.05***
	(0.00)
Endowments.	0.001
(Observable Factors).	(0.57)
Coefficients.	0.05***
(Unobservable Factors).	(0.00)

p-value in parentheses, *** p<0.01, ** p<0.05, *p<0.1

TABLE 8

Marginal Effects from Probit Regression for Rural Sample

Dependent Variable: Enrolled	Boys	Girls
Family size.	-0.002	-0.01***
	(0.44)	(0.00)
Age of the household head.	0.003***	0.005***
	(0.00)	(0.00)
Education level of the household head.	0.09***	0.13***
	(0.00)	(0.00)
Mothers' education level.	0.02	0.04***
	(0.11)	(0.00)
Gender of the household head.	-0.11 *	-0.11*
	(0.05)	(0.05)
Wealth index.	0.21***	0.30***
	(0.00)	(0.00)
Proportion of Male working.	-0.36***	-0.14***
	(0.00)	(0.00)
Proportion of Female working.	-0.25***	-0.38***
	(0.00)	(0.00)
Distance to Public school.	0.21***	0.25 ***
	(0.00)	(0.00)
N	22771	22282

p-value in parentheses, *** p<0.01, ** p<0.05, *p<0.1

Therefore, the results discussed in the study shows gender gaps for enrolment in five years of schooling in Punjab, Pakistan, given five different specifications. The overall gender gap of 0.03 is found both positive and statistically significant implying a pro-male bias. However, the rural region has the highest differential in educational enrolment between boys and girls with a gender gap of 0.05, showing a significant pro-male bias; whereas, in case of urban domain, a marginal pro-female bias is found, indicating that more girls are enrolled in schools in the urban region as compared to boys. The two-household categories also provide an insight into the gender differentials, within the public (government) and private school sectors representing the households with children attending public schools only and those household with children attending private schools only. The gender gap in the households sending their children to public (government) schools only show a pro-male bias and exceed the gap found in the private households' category only. Furthermore, in the case of only public households, observable factors included in the model predict the gap Swell, whereas, in the case of only private households and overall gap unobservable or cultural characteristics are the main contributors towards the total gap.

VI. Conclusion

The results suggest pro-male biasness for the overall enrolment in five years of schooling for boys and girls in the province of Punjab, Pakistan. However disaggregated analysis reveals that this result is driven by boys being the preferred group in the rural domain. The urban domain on the other hand actually displays a marginally pro-female biasness. While wealth level is an expected determinant of enrollment that comes out to be significant, mother's education presents an interesting case.

The results also suggest the family size as an important determinant that has a larger and negative impact on girls as compared to boys. In addition, the presence of cultural characteristics which are difficult to account for, plays a significant role in determining the gender gap in all cases, as discussed in this study.

With findings of this study, it is important to look at the policy initiatives adopted in the recent years to narrow down these gender gaps at the school level in Pakistan. However, discussing these measures we have to consider both the demand and supply side strategies. The main two national policy documents for education in Pakistan are the Education Sector Reforms (ESR) and the National Education Policy (NEP) 2009. Both these national policy documents focus on increasing female enrolment and the socio-cultural factors that influence the demand for female education. Also, the Gender Reform Action Plan aims to reduce gender disparities at both the provincial and national levels. Amongst the initiatives there are more schools for girls which are close to their home so that distance to school is no longer

a hindrance to female enrolments. Induction of more female teachers and better school infrastructure remains a priority. Addressing fertility patterns by advocating small family size and a delay in early marriages to curb population growth and encourage female enrolments is another prime focus regarding this issue. In collaboration with the NGO sector the government is working to take proper measures in this respect. Initiatives like establishing free health clinics, distribution of free contraceptives and Lady Heath Worker Network program are undertaken by cooperation of the government and the NGO sector. Another important policy initiative is the review of gender stereotype in the curriculum and the textbooks. This measure is on way to influence the perception associated with female education in a positive way through a right-based gender-sensitive image of the female school enrolments. Reducing the cost of education remains significant through provision of free schooling, free textbooks and school feeding programs which have proved to be very significant in boosting enrolments because poverty remains a strong barrier towards education [UNICEF (2013)].

Lahore School of Economics, Pakistan

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