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Women' Working Status and their Children' Education in Pakistan: An Evidence from PSLM Survey

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Abstract

Working women contribute to household welfare in the form of child education, health, recreation, and nutrition. It also increases the welfare of household members. However, the situation varies depending on the formal and informal labor market, the adaptation of technology, the economic level of the country, and the socio-cultural status of the women in the household, community, and country. In this situation, the issue of the contribution of working women in child schooling is the focus of the current study. The study empirically investigates the relationship between female labor force participation and child schooling (5-15 years children) Pakistan by using micro data of Pakistan Social and Living Standard Measurement Survey (PSLM) 2011-12. The results of binary logistic regression show that women's employment has negative impact on child schooling, i.e. there is less probability of children to attend school as the mothers participate in the labor force. It is due to the higher ratio of female labor force participation in the informal labor market. The parental education, household income, gender of household head, and provision of electricity to the household have shown a positive impact on child schooling, while the number of children in the household and female gender of the child has shown a negative impact on child schooling.

Keywords: working status, women, children, education, labor force

1 Introduction

The participation of women in the labor force increases their economic position in society and improves the overall productive efficiency of the country. The increasing rate of women's participation in the labor force helps to increase their share of income in the household, different sectors of the economy, and at the national level. It also increases maternal health, woman empowerment, women's participation in decision-making at the community and national level and reduces the gender disparities in the sphere of life.

Some studies have attempted to see the impact of a mother's employment on child schooling particularly and child welfare and household welfare generally. Glick (2002) reviewed the research on the impact of women's employment on children's human capital of schooling and health in developing countries. Korupp, et al (2002) focused on how a mother's socioeconomic status, including with father's socioeconomic status, affects the children's educational attainment. Weiss, et al (2003) explored the relationship between maternal work and

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family educational involvement in elementary-age children for low-income mothers and found that full-time maternal work and schooling involve barriers to the educational involvement in their children. Hoerisch (2011) analyzed the impact of parental employment on children's educational attainment and found that father's average hours worked is weakly significant and positive while mother's hours worked have no significant effect on children's schooling. Francavilla, et al (2013) found a negative association between mother's work and the education of children. Most of the women working outside the home are poor and their economic condition pushes them into the labor market. There are several causes of the low rate of women's employment and child schooling in LDCs. Non-availability of self-employment opportunities or due to cultural norms in seeking low-status or low-wage paid work outside the home are also the causes of low rate of women employment in the less developing countries.

According to Pakistan Social and Living Standard Measurement Survey 2011-12, the children's (5-15 years) schooling status in Pakistan is as: 32 percent of all children, 25.90 percent of male and 38.59 percent of female children are not attending the school.

Informal employment is a large source of employment for women in developing countries (Khan and Khan 2009). The study found evidences that women's headship of household, education, and assets ownership was positively affected their contribution to family survival. Azid, et. al. (2010) highlighted the labor force participation of married women in Punjab Pakistan (informal sector and rural areas of Pakistan) and found that increase in the employment opportunities and income of working women in the informal sector will reduce the household poverty and ultimately move to the economic development.

The objective of the current study is to analyze whether mothers' economic activity increases the investment in human capital (i.e. child schooling) or not. The precise objective is to see the impact of female labor force participation on child schooling using the PSLM survey 2011-12. In economic literature, several studies can be seen discussing the impact of women's employment on child schooling.

2 Methodology

The study used the micro-data of PSLM 2011-12 (Pakistan Social and Living Standard Measurement Survey 2011-12) provided by the Federal Bureau of Statistics (FBS 2012). The survey collects a broad range of information on all household members including demographic characteristics such as education, age, marital status, etc. and geographic characteristics (i.e. rural and urban) and other characteristics such as health, employment, water supply, per-capita income of the household, head of household, type of household, etc. The survey comprised of information about 106, 494 households.

The logit model is used to estimate the child schooling. In our logit model, the dependent variable is child schooling. It is binary variable which takes value 1 = for going to school and 0 = otherwise

Model for children going to school is expressed as:

$$\boldsymbol{CH\_SCH} = f\,(MEMP + MEDU + FEDU + CH\_AGE + CH\_AGE^2 + CH\_GEN + NO\_CHILD + LOG\_INC + HHH\_GEN + HH\_SIZE + HH\_ELECT) \quad (1)$$

Operational definitions of variables used in the model are given in table 1.

Table 1
Operational Definitions of Variables

Variables	Operational Definitions
Dependent Variable	
CH_SCH (Child schooling)	School enrollment of children age 5-15 years. 1 = if child attends school, 0 = Otherwise
Independent Variables	
MEMP (Mother employment status)	Women working status is taken as binary 1 = Working, 0 = Otherwise
MEDU (Mother education)	Mother education is taken as 1=No education, 2=Matric, 3=Graduation, 4=Higher
FEDU (Father education)	Father education is taken as 1=No education, 2=Matric, 3=Graduation, 4=Higher
CH_AGE (Child age)	Child age is taken as a continuous variable, i.e. completed years
CH_AGE^2 (Square of child age)	The Square of child age is taken as a continuous variable.
CH_GEN (Child gender)	Child gender is coded as 1=Female, 0=Male
NO_CHILD (Number of children)	Number of children/siblings up to 15 years of age and taken as a continuous variable
LOG_INC (Log of household total income)	Log of household total income (in rupees) is taken as a continuous variable.
HHH_GEN (Household head gender)	Household head gender is 1=Female, 0=Male
HH_SIZE (Household size)	The number of household members is taken as a continuous variable.
HH_ELECT (Household electricity)	Availability of electricity in the house 1=Having electricity, 0=Otherwise

There are four main categories of variables to explain the impact of women's employment on child schooling i.e. the child characteristics, mother characteristics, household characteristics, and community characteristics. The child characteristics include age, gender, and the number of siblings other than the child schooling (and type of schooling). The mother characteristics include working status, education of mother, the household characteristics include total income, household size, gender, and community characteristics include the electricity of household.

For the analysis, the sample is restricted to 5-15 years of children which covers the 29379 observations. Binary logistic regression is applied to the sample.

The mathematical express of the equation No. I is given as:

$$CH\_SCH = \alpha_0 + \alpha_1 MEMP + \alpha_2 MEDU + \alpha_3 FEDU + \alpha_4 CH\_AGE + {}_{\alpha 5} CH\_AGE^2 + \alpha_6 CH\_GEN + \alpha_7 NO\_CHILD + \alpha_8 LOG\_INC + \alpha_9 HHH\_GEN + \alpha_{10} HH\_SIZE + \alpha_{11} HH\_ELECTR \quad (2)$$

Another way to measure the effects of independent variables is to compute their marginal effects. In our regression analysis, we will interpret and measure the effect of independent (or explanatory) variables on dependent (or response) variables by computing their marginal effects. The marginal effect of an independent variable measures the impact of change in an independent variable (i.e. X_i) on the expected change independent variable (i.e. Y) in a regression model, especially when the change in the independent variable is infinitely small. The marginal effect of an independent variable X on the dependent variable Y can be computed by taking partial derivate of E (Y|X) with respect to X if the independent variable is continuous and thus differentiable.

3 Results and Discussion

The ratio of children going to school and the female labor force participation are shown in table 2.

Table 2
Child Schooling and Mothers Working Status in Pakistan

Child Schooling status	Frequency	Percentage
No (Not Attending School) = 0	10,015	32.00
Yes (Attending School) = 1	21,279	68.00
Total	31,294	100.00
Employment status of mothers		
Not working = 0	92,521	86.88

Working = 1	13,973	13.12
Total	106,494	100.00

It is important to note that 32 percent children are not attending school and only 13.12 percent mothers are employed.

To analyze the impact of female labor force participation on child schooling, binary logistic regression is used. The regression results are reported in table 3.

Table 3

Regression Estimates of Binary Logistic Regression for Child Schooling

Ind. Variables	Coefficients	Odd Ratio	Marginal Effects	Significance level
MEMP (mother mployment)	-.1803123	.8350094	-.0301689*	0.000
Reference MEDU_1 (No education)				
MEDU_2 (mother education matric)	1.407348	4.085106	.23547*	0.000
MEDU_3 (mother education graduation)	1.778921	5.923461	.2976397*	0.000
MEDU_4 (mother education higher)	1.715029	5.556838	.2869497*	0.000
Reference FEDU_1 (No education)				
FEDU_2 (father education matric)	.7485678	2.11397	.1252464*	0.000
FEDU_3 (father education graduation)	1.036677	2.81983	.1734513*	0.000
FEDU_4 (father education higher)	1.383344	3.988216	.2314538*	0.000
CH_AGE (child age)	1.254466	3.505965	.2098906*	0.000
CH_AGE^2 (child age square)	-.0639222	.9380779	-.0106951*	0.000
CH_GEN (child gender)	-.7025272	.4953319	-.1175431*	0.000
HH_SIZE (household size)	.0027083	1.002712	.0004531	0.756
NO_CHILD (number of children)	-.0794471	.9236269	-.0132927*	0.000
LOG_INC (log of total household income)	.2472433	1.280491	.0413674*	0.000
HHH_GEN (household head gender)	.7957248	2.216047	.1331365*	0.000

HH_ELECT (household electricity)	.9308711	2.536718	.1557485*	0.000
Constants	-8.423031	.0002197	-.0301689*	0.000

Number of obs = 29379
Wald chi^2 (15) = 3150.39
prob > chi^2 = 0.0000
Pseudo R^2 = 0.1870

* represents 10 percent level of significance

3.1 Mother Employment

Mother's employment is the principal variable of our analysis and we have hypothesized that it may affect the child schooling positively or negatively depending upon the nature of the job and formal and informal kind of labor market. It is observed from table 3 that child schooling decreases with mother employment. The results show that an incremental change in mother's employment will decrease the probability of children going to school by 3.0%. These results are consistent with the results of Francavilla et.al. (2013) and Glick (2002). Here an economic factor involved that females participate in out-of-home economic activities to support the family, so children remain in the home for domestic chores. Moreover, the mother is the primary caretaker and can take good care of the child as compared to the father. So, when she will employ outside the home, she will not take care of her children which is also the reason for the negative effect on child schooling. Further, females have low-status jobs and lower social capital so they have a lower probability to engage their children in learning or schooling activities.

The results have support from the fact that woman employment is defined by the FBS in the survey as. It comprised of the formal and informal sector working women. The majority of the working women are employed in the informal sector. The informal sector has specific characteristics, i.e. the labor force in the informal sector is generally underpaid. It has no specific working hours and permanent employment. The wages are not fixed and the time of wages is also non-regulated. It results in the exploitation of the workers in the labor market. In this situation, the education of children is badly affected by the employment of mothers. There is the probability that the mothers engage their children in the work.

3.2 Parental Education

Theoretically, there is a strong link between parental education and child schooling. More educated parents are more likely to invest in the education of their children. The empirical results of the current study have demonstrated that mother's education has a positive impact on their children's schooling. It explained that matric level of education (10 years of education) increases the child schooling by 23.5 percent as compared to illiterate mothers. It explores that if all the illiterate mothers are given 10 years of education the school attendance of children (children 5-15 years) will be increased by 23.5 percent. On the same lines, the graduation level of education of mothers increases the school attendance by 29.7 percent and higher education of mothers contributes to child schooling by enhancing the school attendance by 28.6 percent. Similarly, the education of father up to matric will increase their children's schooling by 12.5%. The education of father up to graduation will increase child schooling by 17.3 percent and higher education of fathers will increase child schooling by 23.1 percent as compared to illiterate fathers. All levels of education of parents have a positive impact on child schooling. It may be conferred that the

impact of mother's education on child schooling seems stronger than the father's education. Less-educated fathers invest less in their children keeping them illiterate (Bell and Gerbach 2000; 2000; Emerson and Souza 2002).

3.3 Child Age

The child's age is an important factor for the decision of child schooling. The probability derivative of child age is found positive on child schooling. It signifies that child school enrollment is delayed. The minimum age of children to go to school is taken 5 years and at this age, children are not sent to school, this is the explanation of the positive impact of age on child schooling. The negative sign of age square shows that the probability of children going to school increases at decreasing rate in the later age. There is an inverted U-shaped (∩) relationship between age and child schooling.

3.4 Gender of the Child

The results show that male children are more likely to go to school as compared to females (Khan 2003; Sawada and Lokshin 2000; Ray 2002). There are 11.7% less chances for female children to go to school as compared to males. The reason for low female enrollment as compared to male's enrollment in school is that there is intra-household discrimination and the high opportunity cost of girl's education (Glick 2002; Sawada and Lokshin 2000). The low probability of female education may also be due to the lack of female schools (especially in rural areas), female teacher availability, and poor teaching standards in school. The high drop-out rate of girls in school is also due to restrictions on their movement outside the home and parents perceive girls' education less advantageous as compared to boys.

3.5 Number of Children

The number of children up to 15 years in the household may have a negative effect on child schooling. The results of the present study show that number of children has negative impact on child schooling. An additional child (of age up to 15 years) in the household decreases the probability of children going to school by 1.3 percent. The children living in households with a larger number of children are more likely to be living in poverty as compared to the child living in a household with few children (Ray 2002). Children from households with a large number of siblings are more likely to drop out (Sathar 1993) and students who could obtain higher education are from households with a smaller number of children (Sawada and Lokshin 2000).

3.6 Household Income

Household income is also an important explanatory variable for child schooling. It is found that household income has a positive impact on the probability of child schooling.

3.7 Gender of Head of Household

The gender of the head of the household may affect the child's schooling. It is found that in the female-headed household children are 13.3 percent more likely to attend school. Women as head of household contribute more to child welfare as compared to men (Khan and Khan 2009).

3.8 Household Electricity

In the literature, a number of proxies have been used for socioeconomic status and living conditions of households in developing countries. They include the ownership of the household,

household physical structure, connection to water supply, and connection of electricity to the household. We have taken the electricity connection as the proxy of the socioeconomic status of the household. The electricity connection to the household has positive impact on the probability of child schooling. It can be explained as electricity shows the socioeconomic status of a household, which increases child schooling.

4 Conclusion and Policy Recommendations

The current study empirically estimated the impact of female labor force participation on child schooling through binary logistic regression. The analysis was based on the micro data of PSLM 2011-12. It is concluded that mother's employment has a negative impact on their children's schooling.

It is also concluded that mother's and father's level of education has a positive effect on their children's schooling. A child's age has an inverted U-shaped effect on child schooling. It explains the delayed school enrolment of children. The female gender of the child and the number of children in the household decreases the probability of child schooling.

The household income has shown a positive impact on children's school enrollment. The female-headed households have shown showed a positive impact on the probability of child schooling. The households having electricity increases the probability of child schooling.

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