The Determinants of Female Child Labour in Pakistan: The Case of Multan City

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ARTICLE DETAILS	ABSTRACT
History *Revised format: May 2016* *Available online: Jun 2016*	The ever-rising danger of child labour has created several problems in Pakistan. The purpose of this study is to find out those determinants which affect the female child labour in Multan and also identify some new determinants which affect the incidence of the child labour. Data has been collected for 200 female labourers, employed as maidservants, baby sitters and other household activities. The results of the study show that female child labour decreases due to increase in schools, assets, per-capita income, transfer payments, education and number of employed members in a family while on the other hand; large family size increases the female child labour. On the basis of the econometric analysis, we may suggest that government officers, media experts, members of non-government organizations and educationists should make serious and sincere efforts to achieve the objective of decreasing the incidence of female child labour and develop their living situations.
Keywords *Determinants,* *Female Child Labour,* *Per-Capita income,* *Family size*	
JEL Classification J20, J21, P44	

1. Introduction

Child labour is not a small issue in the real world. Most of the developed and developing countries try to reduce the incidence of child labour in order to increase their future productivity. Child labour indicates those children who earn at their childhood age. Child labour is the employment of children at early age and this work is not suitable for their growth (Grand, 1983). Incidence of child labour has very strong roots in destroying the children's future. So, this problem is not a current issue. During the industrial revolution large number of children were working in factories at lower wages. In Victorian era children were employed in cotton mills, chimney sweeps and mines. In the early 1900s large number of boys were working in glass making industries.

In 1979 The International Labour Organization estimated the ratio of child labour. According to their estimation 52 million children were working all over the world (ILO, 1979). After that in 1983 The

International Labour Organization re-estimated the ratio of child labour in order to correct the previous estimation and found that 100 million children were working in the world (ILO, 1983). In 1995 United Nation sub commission declared that 145 million children below the age of 14 were working around the world due to several reasons. In Pakistan the International Labour Organization reported that 2 to 3 million children are working in order to meet their family needs (ILO, 1979). These children are working in hotels, shops and factories at lower wages, Apart from this Mostly children are begging on roads and historical places.

The phenomena of child labour is growing very fast in our society due to various determinants. Some of these determinants are poverty, large family size, low income level and lack of health and education facilities etc. In developing countries due to poverty and low income level parents prefer to send their children to earn instead of school attainment. In developing countries incidence of child labour high due to market imperfection and lack of employment opportunities. So therefore all the mentioned above factors pressurize the children to work in order to meet their day by day needs. This labour force is not useful for the development of the country because they work at their learning age without any skills.

The present study has been organized in following manners: In section 2, a brief review of earlier studies has been presented. Objectives of the study have been classified in section 3.data and methodological issues have been concisely mention in section 4. Econometric specification of the model is existing in section 5. Section 6 is reserved for results and discussions. Finally, the conclusion and policy recommendations are discussed in section 7.

2.   Review of Literature on the Determinants of Female Child Labour

There have been many studies on the determinants of female child labour but in this section only specific studies are discussed in order to find out the various determinants of female child labour. Mehta et al. (1985) studied the determinants of Child labour in Bombay. This study was based on cross-sectional data. This study found that in India the incidence of child labour was high. In Bombay 30,000 children were working, most of them were migrants moreover, this study found that 68 percent children were working in hotels and 73 working children were considered as a part of Dharavi. In India 22 percent children under age 10 year started working in order to meet their family needs but they earned less than $11 per month. A part from this 40 percent children were working more than 12 hours and 16 percent of them also attended school. In Bombay due to lack of food, children were suffering from Anemia and vitamin deficiency.

Patrinos and Psacharopoulos (1995) explored the relationship between education performance and the incidence of child labour in Paraguay. This study used the data from 1990 household survey conducted in Paraguay. In this study children age of 12 to 19 were selected in order to examine the relationship between school attainment and labour characteristics. In Paraguay schooling was compulsory for all up to the age of 13 year but 28 percent children age of 13 had already left schools. This study also presented some suggestions such as education subsidies should be provided to poor household in order to decrease the child labour and increase in school attainment.

Canagarajah and Nielsen (2001) revealed all those factors which effected the child labour in Africa. This study found that the incidence of child labour was less in all those families where household had physical assets like land and business. Imperfect capital market hypothesis found that access of the credit facilities had a positive impact on child labour reduction. In Africa the ratio of child labour also increased due to the crop failure. Due to high school cost parents were preferred to send their children for work in order to meet their basic needs. Child labour was less in all those families where well-educated household existed.

Beegleet al. (2003) showed the relationship between child labour, income shocks and access of credit. This study was based on panel data of Tanzania. Ordinary Least Square was used in this study. During income shocks parents considered themselves less productive so they sent their children for work in order to meet their day by day requirements. Access of credit had negative impact on child labour. This study revealed that child labour decrease with high collateral level due to wealth effects. Access of credit and education benefits also led to decreased in child labour. Ownership of land also effect the child labour. According to this study income shocks had positive impact on child labour. If parents have farming land they send their children for work in land in order to fulfil their daily expenditures.

Okpukpara et al. (2006) defined all those causes which encouraged the child participation in economic activities in Nigeria. This study was based on survey conducted by Federal Office of Statistician in conjunction with International labour organization from July 2000 to February 200. This sample consisted of children age 8 to 17 year. Probit regression used in order to found the results. This study found that the incidence of child labour was high in Northern than Southern Nigeria. In Northern Nigeria due to lack of well-educated mothers the ratio of child labour was high. The ratio of child labour was also high in all those families where children were not living with their biological parents.

Rickey (2009) revealed all those determinants which effect the household's decision about child work and school attendance. Data of this study was based on International Labour Organization. Multinomial logit model used to find out results. This study found that Educated household head led to decrease in child labour so household head had positive impact on children education especially girls education. In rural and urban areas male were engaged more in child labour then female. In rural areas children worked full time or half time according to their family needs. All those household had large amount of land selected more children for work.

Basu et al. (2010) showed the impact of wealth on child labour. The ratio of child labour was less in all those areas where household had land and perfect labour market exist. On the other hand imperfect labour market led to increase the child labour. Due to imperfect labour market large land holding parents preferred to send their children for work instead for schooling. The ratio of child labour was also very high in all those areas where household used their land in order to meet their basic needs.

Chakrabarty et al. (2011) explained the factors that influenced the decision of child labour and child schooling in Nepal. This study also revealed the impact of Non-Governments Organizations on poverty alleviation and increased in social welfare. On-governments organizations also had great influence on child schooling. According to empirical results child labour decreased as increasing in child schooling. Labelling non-governments organizations intervention had a significant positive impact on increasing the child schooling. Improvement in household's education led to decreased in child labour. This study found that strong negative relationship existed between education level of household and child labour. Adult income had significant positive impact of child schooling and negative impact on child labour. Non-governments organizations were most important factor in preventing the child labour. This study gave some suggestions such as adult wage should be increased in order to reduce the incidence of child labour.

Banerjee and Nag (2013) showed that globalization policies and agriculture policies also effected the child labour. In this study three sector general equilibrium model was used. In order to find the results this study divided the agriculture sector into two parts such as modern agriculture and traditional agriculture. According to this study in developing countries the ratio of child labour was very high due to lack of foreign direct investment.

3. Objectives of the study

Keep in view the previous background and the objective of the study as following:

i.   To find out the effect of poverty on female child labour.

ii.   To explore the impact of number of schools and hospitals on the incident of female child labour.

iii.   To identify the impact of family characteristics on female child labour.

iv.   To find out the relationship between transfer payments and female child labour.

4. Data and Methodological issues

Data is the collection of any number which is related to observations. The present study is based on primary data which consists of 200 respondents. In order to find out the determinants of female child labour purposive sampling technique is used. Sample data is collected with the help of questionnaire and Purposive sample based on 200 respondents who send their female children for work at their childhood age in Multan. Methodology is the combination of the methods and procedures which are selected to achieve the objectives. The methodology and variables for the present study have been selected keeping in the view their relative importance on theoretical and empirical basis. Participation rate of female child in labour force is used as dependent variable. Family size, age of female child, number of employed male and female, Per-capita income, Benazir income support program, assets and number of schools are used as independent variables in order to find out the results ordinary Least Square method is used.

5. Econometric Specification

In order to find out the determinants of female child labour, we have specified the following econometric equation. This equation has been estimated by employing the method of Ordinary Least Square (OLS).

$$PRR = \alpha_1 - \alpha_2 AST - \alpha_3 SCH - \alpha_4 \log(PCI) - \alpha_5 BIS + \alpha_6 AGE + \alpha_7 FAS - \alpha_8 EMM - \alpha_9 EMF - \alpha_{10} EDU + \mu$$

In this study with the help of E-views Multiple regression analysis is used in order to check the effect of assets (AST), number of schools (SCH), Per-capita income (PCI), Benazir income support program (BIS), age of female working children (AGE), family size of female children (FAS), number of employed male and female (EMM, EMF), and participation rate of female children in labour force (PRR).

Assets (AST) of the families also influence the female child labour decision. Literature review shows that assets have negative effect on female child labour. Incidence of female child labour is less in all those families where household own assets on the other hand in all those families where household have no assets more send their children for work.

Benazir Income Support Program (BIS) represent the transfer payments. Transfer payments are one of the important determinant of the female child labour. According to the different studies transfer payments have negative impact on female child labour. Female child labour decreases due to increase in transfer payments.

Employed male members (EMM) represents the number of employed male member in the family of female working child. According to the studies employed male members have negative impact on female child labour. Incidence of female child labour is less in all those families where large number of male participates in labour market.

Employed female members (EMF) also have a great impact on the incidence of female child labour. According to the different studies number of the employed female members have negative impact on female child labour. Incidence of female child labour is less in all those families where large number of female participates in labour market.

Education (EDU) of the female working children also influence the incidence of female child labour. Education of the female working children have negative impact on female child labour. According to various studies less educated female children more participates in labour force. Family size (FAS) is one of the important determinant of female child labour. Family size indicates number of male and female members in a house. According to previous studies family size has positive impact on female child labour. Incidence of female child labour is high in large families. Number of schools (SCH) also have a great influence on the incidence of female child labour. According to the previous studies number of schools have positive impact on incidence of female child labour. Incidence of female child labour is less in all those areas where large number of schools exist.

Per-Capita income (PCI) is one of the important determinant of female child labour. Per-Capita income means average income per person. According to the studies Per-Capita income has negative impact on female child labour. Female child labour increases due to increase in Per-Capita income. Participation Rate (PRR) is one of the dependent variable. Participation Rate indicates number of female working children. High participation rate shows that incidence of female child labour increases while on the other hand low participation rate indicates that incidence of female child labour decreases.

6. Results and Discussions

A). Descriptive Analysis

Descriptive analysis highlights the main characteristics of collected observations. It is used to define the data more clearly. In descriptive analysis it is very simple to present the data .In case of continuous variables descriptive analysis gives more accurate results as compare to categorical variables. Descriptive statistics refers to Mean, Median, Standard Deviation, Maxima and Minima. Mean shows the average value. In descriptive statistics Median identify the most middle value of the arrange data. Maxima and Minima shows the minimum and maximum value of the variables. Jarque-Bero (JB) test is used to test the normality of the residuals in a large sample.

Table: 5.1: Results of Descriptive analysis

	PRR	SCH	PCI	FAS	EMM	AGE
Mean	0.91	0.57	1602.32	6.32	1.35	11.37
Median	0.66	1.00	1600.00	6.00	1.00	11.00
Maximum	3.00	2.00	3500.00	11.00	4.00	13.00
Minimum	0.25	0.00	1000.00	4.00	0.00	8.00
Std. Dev.	0.62	0.52	635.32	1.70	0.77	1.49
Skewness	1.63	-0.06	0.61	0.41	0.51	-0.20
Kurtosis	5.54	1.52	2.39	2.49	3.31	1.61
Jarque-Bera	142.32	18.30	15.57	7.84	9.49	17.48
Probability	0.00	0.00	0.00	0.02	0.01	0.00
Observations	200.00	200.00	200.00	200.00	200.00	200.00

Mean of participation rate of larger force is 0.91 and the median of participation rate of labour force is 0.66 and the maximum value of participation rate of labour force is 3 and minimum value is 0.25. Mean of the AGE of child labour 11.37 and the median of AGE is 11. Maximum value of AGE is 13 and minimum value of AGE is 8. Mean of EMM is 1.35 and median is 1. Maximum value of EMM is 4 and minimum is 0. Mean of FAS is 6.32 and median is 6 maximum value of FAS is 11 and minimum value of FAS is 4. Mean of PCI is 1602.32 and median is 1600. Maximum value of PCI is 3500 and

minimum is 1000. Mean value of number of schools is 0.57 and median is 1 and maximum value is 2 and 0 is minimum value.

Table: 5.2: Correlation Matrix

	PRR	SCH	PCI	FAS	EMM	AGE
PRR	1.00	-0.21	-0.44	0.33	-0.33	0.38
SCH	-0.21	1.00	-0.02	-0.07	0.08	-0.04
PCI	-0.44	-0.02	1.00	-0.32	0.05	-0.20
FAS	0.33	-0.07	-0.32	1.00	0.40	0.14
EMM	-0.33	0.08	0.05	0.40	1.00	-0.22
AGE	0.38	-0.04	-0.20	0.14	-0.22	1.00

Table 5.2 shows the correlations among the variables such as according to this table PRR 1 percent correlated with itself, 21 percent correlates with SCH, 44 percent correlated with PCI and so on. This table also identify that these variables are positively correlated or negative correlated with each other for example in case of positive correlation both variable move in same direction and in case of negative correlation both variables move in opposite direction. This table helps to understand the strength of the relationship among the variables.

B). Econometric Analysis

Simple regression analysis is used when one variable is dependent and other variable is independent. This study discusses more than one independent variable that's why multiple regression analysis is use in this study. Multiple regression analysis shows the relationship between dependent variable and more than one independent variable. Multiple regression is explained as follows.

$$Y=\alpha_1+ \alpha_2X_{2i}+\alpha_3X_{3i}+\alpha_4X_{4i}+\mu$$

Where Y is dependent variable and X_2, X_3 are independent variable. In this Multiple regression α_1 is the intercept term. α_2, α_3 and α_4 are known as partial regression coefficient. α_2 shows how much changes occur in Y when X_2 change by one unit. α_3 indicates the change in Y due to the one unit change in X_3 and last but not the least α_4 identify the change in Y due to one unit change in X_4. According to the assumptions of Multiple regression there is no exact linear relationship among the independent variables. So there is no Multicollinearty in this model. In the presence of exact relationship it is not possible to solve the equation. The stochastic disturbance term is μ here which is used to remove the impact of all those variables which is not included in the model. In this model i shows the number of observation.

Firstly it is assumed that the dependent variable is not a linear function of the explanatory variables and all the independent variable have no relationship among each other. The value of independent variable is fixed in repeated sample. All independent variables are non-random and expected value of stochastic term is equal to zero for all observation. Each μ_t is normally distributed with zero mean and constant variance. Now it is important to discuss some properties of multiple regression. For the OLS estimators to be linear all the explanatory variables are random and their value are fixed in repeated sample. Second property is unbiasedness. $\hat{\alpha}$ will equal to true α. This mean that if sample size increases α remains equal to the last but not the estimators are BLUE (Best linear unbiased). Its means that they follow the properties of unbiased, linear and smallest variable.

Table 5.25
Dependent Variable: PRR
Method: Least Squares

Included observations: 200

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.61	0.69	3.76	0.00
SCH	-0.14	0.06	-2.50	0.01
AST	-0.29	0.06	-4.79	0.00
LPCI	-0.26	0.08	-3.10	0.00
FAS	0.17	0.03	6.42	0.00
EMM	-0.33	0.05	-7.14	0.00
EMF	-0.11	0.03	-3.40	0.00
EDU	-0.03	0.02	-1.64	0.10
BIS	-0.24	0.07	-3.33	0.00
AGE	0.02	0.02	0.91	0.36
R-squared	0.61	F-statistic		32.57
Adjusted R-squared	0.59	Prob(F-statistic)		0.00

In this table PRR(participation rate) is the dependent variable while on the other hand AGE(age of female children), AST(assets of the family), BIS(Benazir Income Support Program), EMF(employed female) and EMM employed male), FAS(family size), LPCI(log of Per-capita income) and SCH(number of schools) are independent variables. This table shows that 1 year increase in age leads to 0.02 unit increase in PRR.

p-value of AGE shows that Age is insignificant. If AST increase 1 unit it decreases 0. 29 unit of PRR. p-value of AST shows that AST (assets) is significant because its probability is 0.0000. BIS (Benazir Income Support Program) has negative impact on female child labour. Probability of BIS is 0.0010 which is significant. EMF (employed female) also has negative effect on incidence of child labour. This table indicates that 1 unit increase in EMF lead to 0.11 unit decrease in PRR and the probability of EMF is 0.00 which shows that EMF is significant. PRR decreases 0.33 unit due to 1 unit increase in EMM there is negative relationship between EMM and PRR. EMM is significant. FAS (family size) has positive impact on child labour. According to table 1 unit increase in FAS lead to 0.17 unit increase in PRR. FAS is statistically significant. PCI (Per-Capita income) also has negative impact on female child labour. In this table Per-Capita income is use inform of log in order to obtain better results. This table shows that Rs 1 increase in LPCI leads to 0.26 unit decrease in female child labour. And LPCI has statistically significant. Numbers of school is another independent variable. According to the table SCH has negative impact on female child labour which means that 1 unit increase in number of schools lead to 0.14 unit decrease in child labour. And number of schools is statistically significant. EDU (Education of the female working child) is one of the independent variable which has negative impact on incidence of female child labour. This variable is also significant and shows that 1 year increase in education leads to 0.03 unit decrease in female child labor.

The value of Adjusted R-squared is 0.59 which means that 59 percent of the variation in participation rate is described by independent variables. Value of F-statistic is 32.57which shows that 32 percent over all model is significant. Value of t- statistic shows that AGE of the female.

7. Conclusion and Policy Implications

Child labour is one of the scorching issues now a days. In developing countries the incidence of child labour is very high due to several reasons such as poverty, unemployment, lack of health and education facilities. The determinants of female child labour data are collected with the help of purposive sampling. In this study the sample is based on 200 female who send their children for work in their childhood age. Ordinary least square is used in order to find out the results. In this study participation rate use as dependent variable assets ,number of schools, Per-capita income, Benazir income support program, age of female working children ,education of female working children family size of female children, number of employed male and female are independent variables.

 In this both qualitative and quantitative techniques are use in order to find out better results. The result of this study shows that the incidence of female child labour is less in those families where large number of employed female and male exist. Low income level is the major determinant of the male and female child labour. Due to the low income level parents prefer to send their children for work in order to fulfill their family needs. So Per-capita income and income of household head has negative impact on the incidence of female child labour. Literate female children less participate in labour force while this ratio is too high where large number of illiterate child exist. Per capita income has significant effect on reduction in female child labour. According to the results transfer payments and assets also have negative impact on child labour while on the other hand large family size increases the child labour ratio. This study finds that majority female child labour are belong to those families where household head have no assets. Number of educated male and female members in a family also affect the incidence of child labour. Illiterate and less educated parents have negative impact on female child labour. Well educated parents are aware of the value of education so they prefer to send their children for school attainment. Female child labour ratio also very high in all those areas where low quality and quantity educational institutions are exist. Some suggestions are given in this study in order to decrease the incidence of child labour such as Government should provide better employment opportunities for adult and also introduce some vocational training programs for females in order to increase the income of their family. In order to decrease the incidence of female child labour in rural areas number of government schools should be established and the quality of education should be improved in existing schools. Poverty is the main determinant of female child labour. In order to increase the small business government should increase the number of microfinance institution in those areas where the ratio of female child labour is not too small. Transfer payments also play a crucial role in order to decrease the female child labour but in rural areas people are unaware about the system of receiving the transfer payments so in rural areas such institutions should be established which make the people aware about the whole procedure and also check their performance. In rural area large number of family size is considered to be a good sign in the way of increase in income level so Government and Non-Government organizations should take effective measures in order to make the people aware that this large family size is only a great hurdle in the way of poverty alleviation.

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