Factors Determining Child Labor: Empirical Evidence from Khyber Pakhtunkhwa, Pakistan

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ABSTRACT

Children are forced to work when their families face financial pressures due to poverty, illness, or the loss of jobs. There is, however, still a perceived lack of research on the key factors contributing to child labor in Pakistan. This study examines the determinants of child labor in Mardan and Nowshera districts of Khyber Pakhtunkhwa, a province of Pakistan. A total of 200 households were interviewed. A semi-structured questionnaire was developed to collect data from the

family heads whose children are in child labor. A stepwise-regression model was adopted to explore the strength of the relationship between independent variables and dependent variable. The dependent variable was the child labor ratio and the independent variables were the socio-economic and demographic' characteristics such as age, education, family size, parents' occupation, the number of adult males and females, family income. The findings show that the family size was the most important determinant of child labor. Likewise, the number of adult females, parents' occupation as daily wages labor, and the parents' age had a positive influence on the extent of child labor. However, the number of adult males, family income, and parents' education had a negative relationship with the extent of child labor. The questionnaire survey had shown that families considered poverty to be the main reason behind child labor, unemployment was the second reason and the third was number of dependent females within the families. Therefore, the government may target these families from lower socio-economic backgrounds to disseminate information about family planning and also include these people in the current governmental program to help them financially.

KEYWORDS
child labor, family size, dependency, poverty, Pakistan

1. Introduction

Child labor is frequently characterized as work that affects children in their initial stage of life; it effects their hidden capacity, dignity, and is harmful to their physical and mental health (Hilowitz et al., 2004; Shalhoub-Kevorkian 2020). It is estimated that 121 million children will be engaged in child labor by 2025. Among these children, 48% are aged 5–11; 28%, 12–14; and 25%, 15–17 (Thévenon & Edmonds, 2019). Boys are more often than girls engaged in outside domestic work. However, according to the Sustainable Development Goal (SDG) target No. 8.7 aimed to eradicate child labor in all its forms by 2025 (Thévenon & Edmonds, 2019). Therefore, national governments and international organizations are trying to reduce child labor, which has already brought some results: in 2016, 152 million children were in child labor compared to 246 million in 2000 (Thévenon & Edmonds, 2019). However, the COVID-19 pandemic is likely to cause in increase in child labor. Not all types of work are considered child labor, but only those that can influence children's health and deprive them of education (Ibrahim et al. 2019). Moreover, child laborers are from poor families and may suffer from malnutrition, which makes them more vulnerable to various diseases (Ibrahim et al., 2019).

According to the International Labour Organization, in 2008, 8.3% (3.3 million) out of 40 million children (UNICEF, n.d) were full time and/or low protection laborers in all the territories of Pakistan (Ahmad et al. 2020; Asis & Piper 2008). Furthermore,

low-income families cannot afford to pay school fees and have to send their children to labor to add to the family's income. The main factors involved in child labor are the socio-cultural factors, i.e., large family size, agro-based economy, family issues, divorces, and the joint family system. According to Awan et al. (2011), the prevalence of child labor results from the combination of issues and factors, i.e., illiteracy of the parents/guardians, health issues, failure in child law enforcement, social inequality and poverty. However, other social factors contribute to the curse of child labor (Lareau, 2011) such as living from hand to mouth, and lack of job opportunities for parents (Lassus et al., 2015). According to the United Nations understanding, "children are classified as child labourers when they are either too young to work, or are involved in hazardous activities that may compromise their physical, mental, social or educational development" (UN, 2020). Poverty, income level, migration, education level, and family size were the primary determinants for child labor (Khan et al. 2003). There is also evidence that low family income is the main source of child labor (Abrar & Arsalan, 2010; Ahmed et al., 2012).

Child labor has venomous impacts on society. Therefore, international laws have been established to safeguard the rights of children and put an end to child labor around the globe (Doytch et al., 2014). Simultaneously, there have been laws for the protection of children's rights in Pakistan (Ullah et al., 2017). Pakistan complies with the international child protection laws; the country has banned early child labor to protect children's rights (Basu & Tzannatos, 2003).

The Constitution of Pakistan has safeguarded the rights of children (Cole, 2002). Article 11 (3) of the Constitution prohibits the employers to hire children below the age of 14 to work in mines or take up other hazardous jobs at industrial facilities. Article 3 of the ILO Minimum Age Convention states: "The minimum age for admission to any type of employment or work which by its nature or the circumstances in which it is carried out is likely to jeopardize the health, safety or morals of a young person shall not be less than 18 years" (ILO, 1973). There is a desperate need to regard children's privileges at the individual, cultural, and state levels (Edwards, 2009).

Several studies have been conducted in Pakistan that reported different determinants of child labor. For instance, Kakar et al. (2011) explored poverty, lack of resources, and bigger sizes of families in Sindh. Another study from Southern Punjab revealed a lack of educational opportunities for children from low-income families and increasing poverty (Haider & Qureshi, 2016). Moreover, parents' education level, ownership of assets, and household composition have a significant effect on schooling and child labor in central Punjab (Khan, 2003). Due to the geographical and cultural differences among all provinces of Pakistan, the determinants of child labor are different in different regions (Haider & Qureshi, 2016). To the best of our knowledge, most of the studies has explored the factors responsible for child labor. However, to rank these factors, no study has been found. This study is unique in three aspects: first, it has explored the important determinants of child labor in Pakistan. Second, we have measured on the basis of estimated results the strength of relationship of these determinants with child labor. Third, we used multiple responses technique to rank important reasons.

2. Literature Review

About, 12.5 million children in Pakistan suffer from the curse of child labor largely because of poor economic conditions (Jaafar et al., 2013). Child labor has a strong correlation with poverty (Anderson, 2018). According to Hafeez and Hussain (2019), the primary areas for child labor are manufacturing, transportation, and agriculture. According to the study of Srivastava (2011), child labor has associated with many issues and factors i.e. illiteracy of the parents/guardians.

We have searched the literature and summarized the obtained data in tables. The literature that was most relevant to our study objectives is included in review. Moreover, the literature on the consequences of child labor is also included in this section. The literature review summarized in Table 1 shows that there are several factors (Latif et al., 2018) responsible for child labor that include poverty, parents' education, or low social status Two categories of child labor are identified: children working in factories, and children engaged in work (Latif et al., 2018). Poverty is a global issue, which affects developing countries all over the world. Pakistan is one of the countries in South Asia with millions of people living in extreme poverty (Abdullahi et al., 2016), supposed to be the main reason of child labor.

3. Conceptual Framework

In Table 1, we have reviewed the literature. The literature review has helped us to find out the determinants of child labor that are shown in Figure 1. To guide do such analysis, we have developed a new framework for explaining child labor (Webbink et al., 2013). Our framework is based on considering (a) demographic factors and (b) economic factors. These factors affect the child labor which is our dependent variable.

Figure 1
Factors of Child Labor
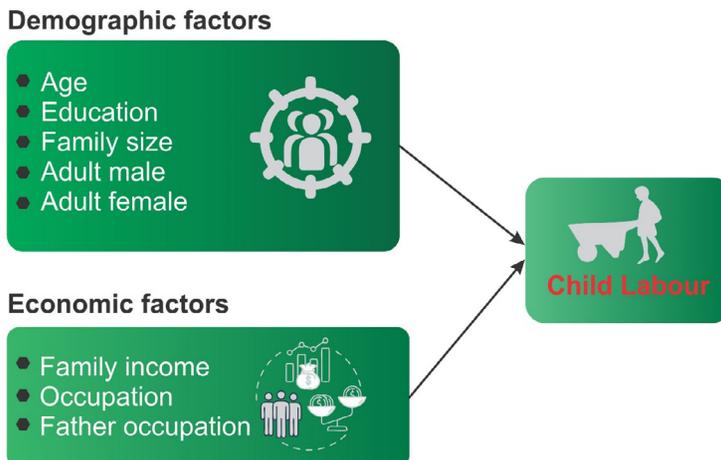
Note. We created it on the base of the literature review.

Table 1

Summary of Research Literature

S. No	Author, year	Country/ region of the study	Publication Type	Depended Variable	Independent Variables	Findings
1	Bhalotra and Heady (2000)	Pakistan and Ghana	Discussion paper	Child labor both girls and boys	Farm size, household income. Household size	Child labor is increasing with increase in farm size and decreasing with increase in household size for both boys and girls in Pakistan and Ghana. Increases in household income have a negative impact on work for boys in Pakistan and for girls in Ghana.
2	Daga (2000)	India	Journal article	Physical and mental health of child labor	Child labor work, rural and urban areas	Various types of illnesses were associated with child labor in rural areas.
3	Brown et al. (2002)	Global	Discussion paper	Prevalence of child labor	Socio-economic factors	Poverty and low household income sources are the main source of child labor.
4	Basu and Tzannatos (2003)	Global	Journal article	Child labor participation	Factors responsible for child labor	The poverty and less investment in education are the main reasons of the high prevalence of child labor in many developing countries.
5	Khan (2003)	Pakistan	Journal article	Prevalence of child labor	Socio-economic urban areas	Education of the head of household and parental education is positively associated with child schooling and negatively associated with child labor. The ownership of assets negatively associate with child labor, the household size affects work positively. Children from urban areas are more likely to go to school and are less involved in child labor.
6	Bass (2004)	Sub-Saharan Africa	Book	Issue of child labor	Miscellaneous occupations, poverty, illiteracy, household size, family income	Poverty, illiteracy, household size affects the child labor.
7	Hilowitz et al. (2004)	Global	Report	Issues of child labor around the globe	Parents attitude, low income, family size, parents needs help	Parents attitude is that their child should work with them and help them, they have low family income, and Many parents fear school will teach their children to rebel against the family's traditions and norms. Others fear that the children will learn bad habits away from home

Table 1 Continued

S. No	Author, year	Country/ region of the study	Publication Type	Depended Variable	Independent Variables	Findings
8	Nkamleu and Kielland (2006)	Côte d'Ivoire	Journal article	Child labor in cocoa sector	Gender and age of children, whether or not the child is the biological child of the household head, parents' education, the origin of the farmer, household welfare, household size, the household dependency ratio, the size of other perennial crop farms, the number of sharecroppers working with the household head	Parents' education, the origin of the farmer, household welfare, household size, the household dependency ratio, the size of other perennial crop farms, the number of sharecroppers working with the household head, and communities' characteristics are all pertinent in explaining the child labor
9	Dimova et al. (2008)	Tanzania	Discussion paper	Child labor	Migration and remittances	The migration and remittances sent by the emigrating parents might enable their children to stop working as a child labor.
10	Srivastava (2011)	India	Journal article	Child labor issues and challenges	Socio-economic and policy	Poverty is one of the important factors for child labor problem. The endurance of young children is higher and they cannot protest against discrimination. Many NGOs like CARE India, Child Rights and You, Global March Against Child Labor, etc., have been working to eradicate child labor in India
11	Ahmed et al. (2012)	Khyber Pakhtunkhwa, Pakistan	Discussion paper	Child labor	Socio-economic and demographic factors	Head of the household's education and household's average income are significantly and negatively correlated with child labor. The age of the child and family size are insignificantly correlated with child labor.

Table 1 Continued

S. No	Author, year	Country/ region of the study	Publication Type	Depended Variable	Independent Variables	Findings
12	Latif et al. (2018)	Pakistan	Journal article	Prevalence of child labor in different sectors	Occupational sectors	Child labor is present in four major sectors namely mechanical, agricultural, industry and general labor. Power looms and agricultural sector is the worst and most affected sector of child labor.
13	Ram et al. (2019)	Pakistan	Journal article	Child labor issues and consequences	Status of children daily earning. Type of work done by children and their parents/guardians. Status of education of the children engaged in child labor	The major reason of the child labor is poverty, children work to fulfill family needs. A large number of children work at automobile repair shop. The major reasons behind not going to school involve poor economic conditions, which lead to work to support family.
14	Ahmad et al. (2020)	Pakistan	Journal article	Prevalence to child labor	Socio-economic and demographic factors, and policy factors	The major factors behind child labor include generational poverty, high illiteracy ratio among the parents, unemployment, large family sizes, feudalism and flexibility in the existing child labor laws.
15	Quintero (2020)	Pakistan	Report	Child labor issues	Policy factors	In Pakistan, it is illegal to employ children under the age of 18 in factories. Until recently, the country lacked a law prohibiting children from working at home in most states. On Aug. 6, 2020, Pakistan banned child domestic labor for the first time, passing an amendment that makes it illegal for children to participate in domestic labor. The government recognized the consequences of this labor, such as trauma and abuse, among young domestic workers.
16	Enebe et al. (2021)	Nigeria	Journal article	Prevalence of child labor	Socioeconomic predictors of child labor	The prevalence of child labor among junior students in public secondary schools in study area was high, and was predicted by the level of schooling and income earned.

Demographic factors such as age, education, family size, number of adult male family members of child labor, number of adult females in the household are affecting child labor. Child labor is also more prevalent among the poor families and is often used to make ends meet (Nkamleu & Kielland, 2006). Decision-makers in these families are generally parents or caretakers of the child, but other family members may also have a voice (Dimova et al., 2008). Therefore, the socio-economic characteristics of the household and parents play a significant role in child labor (Homaie Rad et al., 2015). Child labor is a global phenomenon (de Lange, 2009) and mostly takes place in rural areas. Parents' age, their education, family size, the number of dependent family members are important determinants of child labor (Hussain et al., 2018). As for the economic factors, the following determinants are usually identified: family income, father's occupation, and household assets (Quintero, 2020).

4. Materials and Methods

4.1 Study Area

This study has been conducted in two districts Mardan and Nowshera situated in the central zone of Khyber Pakhtunkhwa, a province of Pakistan (Figure 2). Mardan district has 2.3 million inhabitants and Nowshera has 1.5 million (PBS, 2018).

Figure 2
Study Area Map

Source: Authors' adaptation

4.2 Sampling Procedure

Mardan and Nowshera districts were purposively selected because they are more densely populated than other districts in Pakistan, except Peshawar (PBS, 2018). The number of children in child labor in the province is estimated as 1.5 million (Zia, 2012). However, the total population in the province is 35.53 million (PBS, 2018). Proportionately distributing the number of children by districts we get the average figure of 164,000 for each district. According to Yamane formula (1967), the total sample of child labor households were 203.

For our study, we selected and interviewed 200 households in which the children were involved in child labor. We have obtained the data on child labor from the Education Labor Organization offices in Mardan and Nowshera districts. The Education Labor Organization office had already shared with us some information for academic purposes. These households were interviewed at their homes. Consents for interview were obtained prior to start it.

4.3 Data Collection

This is a cross-sectional study design in which we have collected data from the samples of child labor households in the Mardan and Nowshera districts at a specific point in time. The respondents were the households' heads. Through semi-structured questionnaires, the data were collected from these respondents. The questionnaire contained two parts: in the first part, the child labor information was collected, in the second the respondent's information was asked.

4.4 Data Analysis

4.4.1 Descriptive statistics (parents and children)

The socio-economic characteristics of child labor such as age, education, and occupation were descriptively analyzed. In addition to this, the minimum, maximum, mean, and standard deviation values for household information such as the age of the household head, education, family size, number of adult males and adult females, number of children in child labor, the total number of children and occupation were calculated.

4.4.2 Regression Model

Stepwise regression has been employed in this study (see the formula). Stepwise is a kind of multiple regression that is usually used in social sciences (Fox, 1991). In stepwise regression, the researchers are more interested in explaining the most important predictors that cause variability in the dependent variable (Lewis, 2007). The dependent variable is the child labor ratio that is obtained from the number of children involved in child labor in the family and the total number of children. In our case, we have obtained the predictors with their variability in child labor.

$$y = \alpha + \beta_i x_i + \varepsilon$$

where y is the dependent variable, α is constant, β_i shows the co-efficient of predictors, x_i are the predictors in the regression model, ε is the error term.

5. Results

5.1. Socio-Economic Characteristics of Child Labor and Households

Results in Table 2 show that the mean age of parents is 34.88. It implies that the parents were mostly young. Moreover, they had only primary-level education (6.45 years of schooling). The family size was 8.35 persons. The number of adult females was 5.18 and adult males, 4.42. On average, there were 2.21 children per family. Most of the respondents were from the working class. Results in Table 3 show that the mean age of child labor was 12.21 years. They on average have received 4.27 years of schooling.

Table 2

Results of Descriptive Statistics

Variables	Explanation	Min	Max	Mean	SD
	Parent Characteristics				
Age	Parents' age in years	22.00	47.00	34.88	6.21
Education	Parents' education in years of schooling	0.00	16.00	6.45	3.81
Family Size	Number of family members	4.00	14.00	8.35	2.91
Adult Females	Number of females	2.00	8.00	5.18	1.80
Adult Males	Number of males	2.00	8.00	4.42	1.35
Monthly Family Income	Converted to USD	32.5	110.5	59.58	16.82
Child Labor	Number of family members Child Labor	1.00	3.00	1.33	0.48
Children	Total No of Children	1	4	2.21	0.52
			f		**%**
Occupation	1=labor, 0= non-labor		122		60.10

Note. Source: Field Survey.

Children were involved in different occupations (Table 3). The most part (14.8 percent) were employed in grocery shops while 9.9 percent were working as trainees in various mechanic garages (bike shops). In addition to this, 7.4 percent worked in tailors' shops.

Table 3

Child Labor Characteristics

Child Characteristics		Min	Max	Mean	SD
Age	Child age in years	6.00	16.00	12.21	2.20
Education	Of a child involved in child labor in years of schooling	0.00	9.00	4.27	1.87
Occupation	Children working in different occupations		**F**		**%**
	Bike Shop		15		7.4
	Hotel		20		9.9

Table 3 Continued

Child Characteristics	Min	Max	Mean	SD
Cycle Shop		20		9.9
Tailor Shop		15		7.4
Car Mechanic		15		7.4
General Store		30		14.8
Salesman		10		4.9
Heavy Vehicle Mechanic		5		2.5
Bakery Shop		5		2.5
Car Washing		15		7.4
Clothes Maker		5		2.5
Handcrafts		20		9.9
Bookshops		15		7.4
Medical Store		5		2.5
Ice Cream Shop		5		2.5
Driver		3		1.5

Note. Source: Field Survey.

5.2 Correlations between the Variables

The variables were used to check the correlation between the child labor ratio (as a dependent variable) and the parents' age, parents' education, family size, the number of adult males and adult females, family income and parents' occupation as independent variables (Table 4). The correlation analysis revealed seven variables that have a significant ($p < 0.05$) relationship with the dependent variables. These variables were further used for the regression analysis.

Table 4

Correlation Matrix of the Study Variables

Variables	1	2	3	4	5	6	7	8
1. Dependent	1							
2. Parents' Age	0.11*	1						
3. Parents' Education	-.241**	.184**	1					
4. Family Size	.751**	0.041	-.144*	1				
5. Adult Females	.721**	0.052	-.169*	.469**	1			
6. Adult Males	.366**	0.045	-0.120	.375**	.261**	1		
7. Family Income	-.288**	0.091	.430**	-.242**	-.190**	-.232**	1	
8. Labor	.597**	0.035	-.195**	.634**	.312**	.295**	-.283**	1

Note. * = significant at the 5% level and ** = significant at the 1% level.

5.3 Stepwise Regression Model

The socio-economic factors are regressed by the stepwise method to explore the importance of the selected variable based on the R^2 criteria. Six models were obtained after the regression analysis. Model 1 shows that 56.4% of the variation in the dependent variable that is child labor is due to family size. Similarly, 17.4% variation is explained by the number of adult females. Moreover, daily wage labor, 2.2% by number of adult males in the household, 0.7% by parent education, 0.5% by family income, 0.4% and parentage, and 0.7% variation is explained in the dependent variable. All the models were significant at the 5 percent level of significance.

Table 5

Results of the Regression Model

Model	Depends on	R Squared (%)	Significance
1	Family Size	56.4	0.000***
2	Adult Females	17.4	0.000***
3	Labor	2.2	0.000***
4	Adult Males	0.7	0.000***
5	Family Income	0.5	0.000***
6	Parents' Education	0.4	0.012**
7	Parents' Age	0.7	0.015**

Note: * = significant at the 5% level and ** = significant at the 1% level.
1. Predictors: (Constant), Family Size
2. Predictors: (Constant), Family Size, Adult Female
3. Predictors: (Constant), Family Size, Adult Female, Labor
4. Predictors: (Constant), Family Size, Adult Female, Labor, Adult Male
5. Predictors: (Constant), Family Size, Adult Female, Labor, Adult Male, Family Income
6. Predictors: (Constant), Family Size, Adult Female, Labor, Adult Male, Family Income, Parent Education
7. Predictors: (Constant), Family Size, Adult Female, Labor, Adult Male, Family Income, Parent Education, Parent Age

5.4 Results of the Regression Model

The results of the whole regression model included all independent variables. Results for the family size show that if it is increased by one family member, the dependent variable (child labor ratio) will increase by 0.09. Furthermore, the number of adult females has a positive and significant (0.160, $p < 0.01$) relationship with child labor. Daily wage labor as father occupation, has positive and significant (0.233, $p < 0.05$) association with child labor the number of adult males in the family has a negative and significant association (–0.040, $p < 0.00$) with child labor. As for the parents' education, this indicator is highly significant and positively associated with the child labor mentioned in Table 6. As for the monthly family income, a 1 USD increase causes the child labor ratio to decrease by 0.011. Parents' age was also significantly positively associated with child labor. These results are significant at 99% ($p < 0.01$).

Table 6

Results of Regression Coefficients

Independent Variables	Un standardized Coefficients	Standard error	Standardized Coefficients	Sig.	VIP
Family Size	0.090	0.010	0.414	0.002***	1.938
Adult Females	0.160	0.014	0.452	0.000***	1.306
Labor	0.233	0.057	0.180	0.000***	1.708
Adult Males	−0.040	0.016	−0.086	0.000***	1.008
Family Income	−0.011	0.003	−0.288	0.000***	1.007
Parents' Education	−0.014	0.006	0.087	0.012**	1.099
Parents' Age	0.008	0.004	0.083	0.015**	1.047
Constant	−0.494	0.156			

Note: *=significant at the 5% level and **= significant at the 1% level.

5.5 Reasons for Child Labor

The respondents were asked to select the reasons for child labor from the list of seven reasons (Table 7). Poverty was ranked as the main reason for child labor. Among the respondents, 22.6% of parents reported that they children had to get a job because of the family's poverty. Education expenses were the second-ranked reason that the patens reported, 11.3% couldn't provide their children with basic education. Unemployment (no regular work) was the third-ranked (17%) reason besides a percentage; 15.1% depend on the female while the current inflation was 13.2% according to the respondents. Because of the natural disasters and floods, the people from other areas migrated to the districts in question. There were also ongoing migrations within the district. These contributed to the level of child labor and to the lack of access to education.

Table 7

Reasons for Child Labor

(Multiple responses)

Responses	Rank	f	Percent of Cases
Poverty	I	120	22.6%
Education Expenses	II	60	11.3%
No Regular Work	III	90	17.0%
Dependent Females	IV	80	15.1%
Current Inflation	V	70	13.2%
Natural Disaster	VI	60	11.3%
Access to School	VII	50	9.4%
Total		530	100.0%

6. Discussion

The present study has applied a different approach from that of the earlier studies in the sense that this study has used the ratio of number of children involved in child labor to the total number of children in the family. Second, this study has used the step-wise regression model that was probably never used before in this field of studies. The families in which the child labor ratio was higher were larger in size and had a higher proportion of more adult females. In these families, the burden on the male earners were more. Therefore, their children were entered in child labor. Furthermore, the parents of these children were from the daily wage labor group (Chowdhury, 2021); it implies that these children were from the lower socio-economic strata of society. Moreover, most children worked in grocery stores (Camilo & Zuluaga, 2022). Many of the children were working in motorbike, bicycle, and car repair shops (Quintero, 2020).

The findings of the regression model show that the family size was the most important determinant of child labor. Child labor was more common in such households in which the household size was larger. It implies that with more household size, the dependency on parents increased. They were unable to finance their family expenditures. Therefore, they sent their child to work instead of going to school. The findings of the study agree with the results of Hussain et al. (2018) who revealed that the family size has a positive correlation with child labor. These families tend to be larger because of the large number of children, who generate more family income for the family to support their parents (Koohi-Kamali & Roy, 2021). A study conducted in Faisalabad has reported that families consider children as a means of obtaining more income (Hussain et al., 2018). Furthermore, they revealed that child labor was more prevalent among the large family-size households. In these households, poverty and illiteracy were common characteristics. They couldn't provide basic needs life to their all children such as provision of better food, education, clothing, recreation, etc. the findings of our study are in agreement with the abovementioned studies that children involved in child labor is due to large family size, low poverty level, and uneducated parents. Our results taken from Pakistan case study are similar to that of Nigeria. Olaitan et al. (2017) revealed that the family size is one of the prominent reasons behind child labor in Nigeria.

Adult females in the family are positively associated with child labor: the more females a family has, the more likely this family is to send the children to work at an early age. This situation largely stems from the socio-cultural context in Pakistan since women are expected to work at home rather than take up paid jobs. Therefore, they are dependent on care givers in the family. An earlier study conducted by Malik et al. (2019) revealed that in Pakistan the households are headed by male members and the females are dependent, which creates a positive correlation between poverty and male dominance and which further leads to the more extensive use of child labor. Ray (2000) argues that because of cultural or religious restrictions against women working outside home, households in Pakistan rely more on child labor.

The third determinant was the father's occupation. Whether the father is in formal job or working as daily wage labor. The results show that when the father was

daily wage labor, there is more child labor in those families. This variable is used as a proxy for the economic position of the family. Hence, when a person is daily wage labor, having no regular work, will send their children to work to help him in family expenditure financing. These people are mostly poor and dependent on children income. While, the poverty and low income of the families are the factors that are determine child labor (de Carvalho Filho, 2012). It implies that like other nations around the globe, poverty and low income is one of the important determinants of child labor in Pakistan. For instance, unlike the number of adult females, the number of adult males is negatively associated with the extent of child labor in the study area. It implies that as the number of adult males' increases, less children are involved in child labor.

Parents' education has a negative correlation with child labor. The better educated the parents are, the less it is likely that their children will engage in child labor. Same is the case in Nigeria. Owoyomi et al. (2017) revealed a negative relationship between parental education and child labor in Nigeria. Parents' age is positively associated with child labor. The older the parents are, the more likely they are to send their children to work. When the parents are getting old age. They might have less energy to work, or unable to work. Therefore, the responsibility comes to the shoulders of children. Children starts go to work instead of school. Our results are consistent with that of Homaie Rad et al. (2015) who revealed that in Iran, the mother's age is positively associated with child labor.

The findings for the family income show that the higher is the family income, the less likely the children in the given family to be engaged in child labor. Thus, child labor is more common in among poor families. Poor families need diversification in their income sources. Therefore, they send their children to work to remove their financial hurdles. Similar to our findings, the other studies reported the same association between child labor and income. For instance, Ram et al. (2019), who reported from Sindh Pakistan that child labor was common among the low income households. Another study from Majeed and Kiran (2019) revealed that parents' income is a very important determinant of child labor.

There is ample evidence that poverty and low income are linked to the prevalence of child labor. Nizamani et al. (2019) stated that Pakistan is one of the countries in South Asia with millions of people living in extreme poverty. Certain steps are taken to decrease poverty in Pakistan but there is still much to be done in this sphere. Pakistan ranks 157th out of 188 countries in the Human Development Index (Ram et al., 2019) and 44% of children work to earn money for their families (Asian Human Rights Commission, 2011). When parents have either low wages or when they do not get enough work to provide basic needs to their families, they are forced to send children to work.

7. Conclusion

To achieve the Sustainable Development Goal (SDG) and eradicate child labor in all its forms by 2025, it is necessary to gain a more in-depth understanding of the reasons behind child labor. This study has focused on the case of Pakistan to show that the large family size, number of female family members, poverty, and low income are the

leading causes of child labor in this developing country. Moreover, the government should extend financial help to these families. Simultaneously, there is need of awareness programs to encourage these parents to send their children to schools. Moreover, the law enforcement is needed to completely ban child labor in all it's forms and all industries. Government interventions should be implemented to reduce fertility and to raise family planning awareness.

Limitations of the study

This study was conducted in two districts of the central zone of Khyber Pakhtunkhwa in Pakistan, where trade and commerce are more developed than in other districts. Therefore, the findings of the study may not be generalized to other parts of the province. Moreover, this study has explored number of adult females who are not working as one of the important determinants due to the local cultural context. The findings may be different in societies where the females are mostly working and have no cultural obligations for females to outside homes.

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Appendix 1.
Questionnaire for Household Survey

My name is *Sikandar* I am currently pursuing MPhil degree at *Abasyn University* **"MS Economics".** My research topic is **"Determining Child Labor: Empirical Evidence from Khyber Pakhtunkhwa, Pakistan".** All the information collected through this questionnaire are highly confidential and purely for academic purpose. So kindly do not hesitate to express your real situation and personal opinion. Thus, I appreciate your cooperation for giving your time and for the success of my research.

Respondent's Name: _____   Date: _____

Village: _____   Union Council: _____

Tehsil: _____

A. Demographic profile of the Respondent or Family Characteristics
1. Age: _____ (Years)
2. Education: _____ _____ (Years of Schooling)
3. How many people are there in your household _____?
4. How many are female in your household above age 18 who are not working _____
5. How many are Male in your household above age 18 who are not working _____
6. What is monthly family income _____?
7. How many children are working in your family _____?
8. What is the total number of children _____?
9. What is your main occupation _____?

B. Children Characteristics of child who is working.
Please mention below, children working in different occupations.

S. no	Age	Gender	Education	Occupation
1				
2				
3				
4				
5				

Section c: Reasons behind child labor
In your opinion what are important reasons behind that your children are working.

1. _____
2. _____
3. _____
4. _____
5. _____