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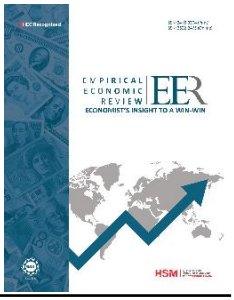

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An Analysis of Child Labor and its Subjective Well-being: Evidence from Khyber Pakhtunkhwa, Pakistan

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Abstract

This study investigates the determinants of child labor, the factors that constitute the welfare of child labor, and the factors that determine the welfare of child labor by providing evidence from three major populated districts of Khyber Pakhtunkhwa (KP), namely, Mardan, Peshawar, and Swat. This employs a structured questionnaire methodology and collects data from 200 households in each district. The research further applies Probit model to estimate the determinants of child labor and finds that income level of household, household head's employment, household head's education, joint family structure, and residence in urban location reduces the likelihood of child labor. However, household's head age, household' size, debt, and economic shock increase the likelihood of child labor. Additionally, this study uses Rees Good Childhood index to measure and compare the welfare of child labor and non-child labor. The findings suggest that child labor has a lower welfare level as compared to non-child labor. Finally, the OLS technique is applied to estimate the determinants of the welfare of child labor. The findings suggest that the wage of child, safety measures at the workplace, leisure, age, and education promote the welfare of child labor. However, the number of working hours, abuse, and hazardous work, adversely affect welfare of child labor.

Keywords: child labor, subjective well-being, probit, OLS

Jel Classification: J13, I31, B23

Introduction

Children and upcoming generations are considered to be the important development asset of any nation (Anjum et al., 2015). The development approaches believe that early child development is significantly associated with achievements in later stages of life. However, children are

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predominantly left vulnerable to long-term damage when exposed to risk events, like incongruous heavy works (Boyden & Dercon, 2012).

The development scholars consider that rising child labor is a potential threat to the social and economic progress of the nation and to the capabilities of upcoming generations. On the one hand, child labor results in lower productivity of labor and contributes to intergenerational poverty and social disadvantage (Rahman & Khanam, 2012). On the other hand, child labor adversely affects the pattern of economic growth by altering the dynamics of labor market (Edmonds, 2016).

Working in the labor market adversely affects the well-being of the children. Well-being is a set of various dimensions of life. It includes the individuals' role in economic and social matters, level of confidence and satisfaction, interaction per values, favourable environment, ability to use skills to deal with difficult situations, and protection of society. According to the World Health Organization (WHO) statement, well-being is a momentary concept; instead, it lasts over time, even the overlapping of pleasure and the individual experience of the moment. The WHO statement makes well-being a functional idea after the discourse on societal development and well-being transcended the perspective of GDP.

The concepts of life satisfaction, quality of life, and well-being are recurrently used interchangeably (Anjum et al., 2015). When the individuals in the society are able to attain the rationality of determination and are able to fulfill their specific goals, their well-being is enhanced, making it a self-motivated state. Well-being is measured with the help of two standard measures namely, subjective measures and objective measures. Subjective measures include level of happiness and satisfaction and objective measures include the income of the family, education, and health status (Statham & Chase, 2010). Subjective well-being (SWB) is an individual's cognitive and affective evaluation of his or her life (Diener et al., 2002). To measure the well-being of children, several wide-ranging domains are used.

Working in the labor market damages the children by hampering the development opportunities available to them (Aufseeser, 2018). This risk is even higher for the children working in hazardous productions (Watson, 2008). Child labor remains central to the ILO's mission and standard-setting activities because of its damaging affects. The situation in Pakistan is similar to the other less developed economies in terms of child labor and

development. The report, 'Stolen Childhood, 2017' ranked Pakistan 148th out of 172 countries. Pakistan is also ranked 8th among the top ten countries with the highest number of children out of school. Additionally, the prevalence of stunted children in Pakistan is 45% highlighting the country's worst position.

The country conducted its one and only 'National Child Labor Survey' in 1996. The survey projected 3.3 million children in Pakistan. Since then, a considerably high ratio of child labor in Pakistan has been projected by various sources, such as ILO reported 12 million children are involved in child labor. Similarly, UNICEF projected 10 million working children in Pakistan.

Driven from the discussion above, it is important to explore the factors that are responsible for child labor in Pakistan and underdeveloped province like KP. Additionally, many working children get involved in intensive work, which is hazardous, and seizes working children's liberty and decision. The joining of the labor market by the children could thus significantly affect their well-being. Hence, it seems essential to inquire about the well-being of working-class children and the factors that affect their well-being.

The present study considers the above-mentioned dimensions of child labor. In this regard, the present research contributes to the existing literature in various ways. Firstly, this study from a less developed province of Pakistan, KP, provides insight into child labor factors. Secondly, this study, as a pioneer work, estimates the subjective well-being of the working children. Thirdly, this study uncovers the factors that can affect the well-being of working children.

Literature Review

This section provides an overview of the prior studies on the issues under discussion.

Determinants of Child Labor

Most of the current literature believes that unstable and weak financial conditions of the households are the root cause of child labor. The study of Skyt and Dubey (2002) found that the rise in family income is one of the primary contributing determinants to increase attendance in schools. This is further supported by Basu and Tzannatos (2003) study, which claims that

low-income families prefer to send their children to work rather than sending them to school. Similarly, Sasmal and sasmal (2020) stated that low adulthood wages encourage unskilful workers and poverty and thus traps the children in child labor trap. These findings support Basu and Van (1998) study that the low subsistence wage level gives rise to child labor.

Germame (2021) revealed that lack of adult employment opportunities compels household heads to make their children work in the labor market. Usually, the lower levels of education of parents accompanied by unemployment discourage parents to afford the basic necessities of their children, which leads to child labor, in order to complement the meagre income of the household (Ekpenyong & Nkereuwuem, 2011). The shocks in the form of war, floods, and draughts primarily hit the poor households. It is because the poor households have a lack of reserve possessions to cope with these shocks. Nevertheless, in some extreme cases, the inability of these households to borrow to finance their current consumption requirements compels them to sell the future hours of their children's work (Fatima, 2013). Generally, the households confronted with income constraints are deprived of investing in the education and skills of children before entering in the labor market (Cigno & Furio, 2000).

Additionally, there exist two approaches about the impact of households' size on children's education and work. The first view believes that per capita income in larger households is low; therefore, chances of the children to be sent to labor market are high as compared to chances of sending them to school (Lloyd, 1994). The second approach believes that larger families have more working people; therefore, prefer to send their children to school rather than labor market (Durrant & Arif, 1998). Skyt and Dubey (2002) believe that families having a large number of younger children increase the incidences of child labor in the form of domestic chores. In such families, older children have to take higher workloads as they are responsible for taking care of their younger siblings. The existing studies observe that number of years of parents' schooling reduces the probability of child labor (Khan, 2001)

Factors Affecting Children's Well-Being

There also exist studies that inquire about the well-being of working children at the workplace. For instance, Anjum et al. (2015) examined the well-being of working children in the carpet industry of Punjab. The

presence of child labor remained damaging for the children's physical and intellectual development, which adversely affect many aspects of their life. Similarly, it is suggested by the econometric results that children involved in hazardous child labor are more likely to face health problems as compared to non-child labors (Posso, 2019). Usually he agriculture and industrial sectors use heavy machinery, which needs proper skills to be operated. However, child labor often lacks such skills; thus, they are exposed to high physical injuries (Edmonds & Pavcnik, 2005). Similarly, the long working hours are also observed to have negative impact on the child's health. The children involved in full-time work could not attend school and thus lose their fundamental right to education (Woolf, 2002). Chirla (2008) observed that children in carpet industry provide extended hour services, which adversely affect their development. Similarly, Li *et al*. (2019) observed that having recreational activities in daily routine help in the alleviation of the damaging impacts of long working hours on workers' wellness and depression.

Additionally, the education that is believed to be the most integral part of children's lives is severely affected by child labor. Kuépié (2018) revealed that less or no returns to education compel poor parents to send their children to work rather than to school. The child schooling is not the only option for child to spend time outside the workplace. Leisure is also an essential part of children's lives to spend their time that critically defines child development. Furthermore, employers treat the child labor as a slave. Child laborers are deprived of schooling and other life-satisfying activities because of the work responsibilities (Woodhead, 2004).

Estimation Methodology

In order to achieve the mentioned objectives, this study follows the following procedure.

Data

In order to collect data on the variable of interest, this study uses a structured questionnaire. The first part of the questionnaire collects information on determinants of child labor. The second part gathers information on the factors of subjective well-being that are based on the Rees methods. The last part of the questionnaire inquires about the factors that affect the subjective well-being of working children.

Identification of Districts and Sub-Regions

In order to ensure the current study is a representative of Khyber Pakhtunkhwa (KP), Pakistan, this study collects data from three majorly populated districts of KP, namely, Peshawar, Mardan, and Swat. However, to identify the slum areas in the districts this study contacts the Bureau of Statistics Department. This department identifies the village councils and neighbourhood councils, where more low-income families reside.

The councils, identified by the department, become the primary sampling unit (PSU) of the study. These councils help to form the clusters of the slum areas in the given districts. Additionally, to identify certain streets (Mohallahs) in the identified councils where many low-income families reside, the study approaches the local administration. The households in the identified streets become the secondary sampling unit (SSU). The study conducts the randomization in the SSU and collects the data from the selected households. Since the selection of households remains purely random, it incorporates both the child labor and non-child labor families.

Sample Size Calculation

This study uses the following 'Yamane' formula of sample size calculation to obtain an appropriate sample size. This study uses a 95% confidence interval and a 5% margin of error to decide the sample size. The local administration identifies 4 and 5 streets in district Swat, Mardan, and Peshawar, respectively, containing 450 households. This research employs the above-mentioned formula to collect data from 200 households of each district. Additionally, to decide about the share of the households' number for each street, the total sample size (200) of each district is divided by the total number of its streets.

Identification of Models

Determinants of Child Labor

In order to explore the determinants of child labor, the following model is adopted. However, the selection of the variables is based on the significance of various prior studies.

$$cl_i = \alpha + \beta_1\, inc_i + \beta_2\, hhe_i + \beta_3\, hha_i + \beta_4\, hhed_i + \beta_5\, hs_i + \beta_6\, rl_i + \beta_7\, fs_i + \beta_8\, dbt_i + \beta_9\, es_i + \mu_i \quad (1)$$

cl is child labor, which takes the value 1 if a family has child labor and 0 otherwise. The inc is the total monthly family income. The hhe is the household's head employment, which takes the value 1 if a household's head is employed and 0 otherwise. The hha is the age of the household's head in years. The $hhed$ is the level of education of the household's head in years. The hs is the household size, and the rl is households' location, which takes the value 1 for urban households and 0 otherwise. Similarly, the fs is the family structure, which takes the value 1 if a family has a nuclear system and 0 otherwise. The dbt and es are the total debt on family and economic shock that a family face, respectively. The economic shock is a dummy variable, which takes 1 if a family faces economic shock and 0 otherwise. Finally, the μ is the error term.

Subjective Well-Being of Working Children

Measuring the Subjective Well-being through Rees Good Childhood Method

To construct an index of the subjective well-being of children, this study also considers the Rees Good Childhood Method. This method incorporates the following dimensions. i. Your life as a whole, ii, Your relationships with your family, iii, The home that you live in, iv, How much choice you have in life, v, Your relationships with your friends, vi, The things that you have (like money and possessions), vii, Your health, viii, The future, ix, The school that you go to, x, The pattern of time use. Similar to the above method, each dimension of Rees's index is measured on a likert scale of 0-4. The 0 represents strongly disagree/completely unsatisfied, and 4 represents strongly agree/completely satisfied. The then constructs index of the above questions through the Principal Component Analysis (PCA).

Determinants of the Subjective Well-being of the Working Children

After calculating the subjective well-being indices, this study inquires the factors that affect the well-being of working children.

$$sw_i = \alpha + \beta_1 wg_i + \beta_2 wh_i + \beta_3 ab_i + \beta_4 hw_i + \beta_5 sm_i + \beta_6 le_i + \beta_7 ag_i + \beta_8 ed_i + \varepsilon_i \quad (2)$$

The sw is subjective well-being of working children, wg is the monthly wage of the child. The wh is the total working hours. The ab is the physical or sexual abuse, which takes the value 1 if child labor faces any physical or sexual abuse in the workplace, 0 otherwise. The hw is a hazardous form of

work, which takes the value 1 if child labor is involved in hazardous work, 0 otherwise. The sm is the safety measures, which takes the value 1 if child labor uses safety kits during work, 0 otherwise. The le is leisure, which takes the value 1 if child labor can manage leisure time and 0 otherwise. Similarly, ag and ed are the age and level of education of the children in years. Finally, the ε is the error term.[1]

Estimation Techniques

In order to estimate empirically the above model 1 and 2, this uses the Probit and Ordinary Least Square (OLS) techniques, respectively. The probit model is appropriate for the estimation of the first model because the dependent variable, i.e., child labor, is a dummy variable, which takes the value 1 for the households having working children and 0 otherwise. The probit and models assume the non-linear functional form, which bound the probabilities between 0 and 1. Whereas, to estimate the second model the study applied the OLS. The OLS is very much applicable in model 2, because the nature of the dependent variable is continuous.

Results and Discussion

Determinants of Child Labor

In the following Table 1, the estimates of the determinants of child labor are given. In model 1, the aggregated sample estimates are presented. Whereas in models 2, 3, and 4, the disaggregated or district-wise estimates of determinants of child labor are given for Mardan, Peshawar, and Swat, respectively. We first interpret the aggregated sample estimates. The coefficient associated with household income is negative and significant at 1%. The finding suggests that a 1% increase in households' income decreases the likelihood of a child joining the labor market by more than 53%. This finding is consistent with the prior studies like Carvalho Filho (2012) and Edmonds (2005). Additionally, Fahlevi (2020) supported these results by a stating a view that the increase in the income of the families reduces the working hourse of child labor.

[1] Descriptive statistics of the variables are given in Table A1 and A2 of the appendix.

Table 1

Determinants of Child Labor (Probit Model Estimations, Marginal Effects)

Variables	Model (1) All Districts	Model (2) Mardan District	Model (3) Peshawar District	Model (4) Swat District
Log Households Income	-0.535***	-0.984***	-0.720**	-0.789***
	(0.128)	(0.364)	(0.333)	(0.229)
Household Head Employment	-0.366***	-0.676***	-0.273*	-0.196*
	(0.064)	(0.158)	(0.140)	(0.116)
Household Head Age	0.024***	0.088**	0.031**	0.048**
	(0.006)	(0.042)	(0.012)	(0.015)
Household Head Education	-0.069***	-0.176**	-0.045*	-0.064**
	(0.015)	(0.079)	(0.026)	(0.032)
Household Size	0.098***	0.101**	0.039	0.070***
	(0.016)	(0.041)	(0.030)	(0.030)
Residence Location	-0.033	-0.060	-0.156	-0.037
	(0.063)	(0.177)	(0.118)	(0.119)
Family Structure	-0.127**	-0.247	-0.081	-0.144
	(0.061)	(0.162)	(0.099)	(0.117)
Log Debt	0.140**	0.065	0.194	0.451***
	(0.056)	(0.147)	(0.172)	(0.141)
Economic Shock	0.388***	0.595***	0.336**	0.329**
	(0.070)	(0.180)	(0.168)	(0.150)
No. of Observations	600	200	200	200

Note. Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Similarly, the coefficient associated with the employment status of the head of the household suggests that compared to the unemployed, the employed household head reduces the likelihood of child labor by almost 37% at 1% level of significance. This finding is in line with the study of Germame (2021). The employed household head can afford the basic needs

of their families. Therefore, they prefer to send their children to school instead of making them part of the labor market. The coefficient associated with the age of the household is positive and significant. The finding suggests that a one-year increase in the age of the household's head increases the likelihood of child labor by almost 2% at 1% level of significance. Germame (2021) support these findings by claiming that parent's age is one of the important contributing factors to child work. This finding is compatible with the study of Ray (1999). It is evident that with the poor financial position of families, the increase in household's age raises their vulnerability to various shocks. These shocks put additional pressure on the families and compel them to send their children to the labor market to have a smooth flow of income.

Additionally, the households' head education significantly reduces a child's probability to join the labor market. This finding is compatible with the study of Mukherjee and Das (2007). The magnitude of the coefficients suggests that 1-year increase in the households' head education reduces the probability of child labor by almost 9%. This finding is supported by the argument that education creates awareness about the future return of child labor and a school-going one.

The coefficient associated with the family size is positive and significant. This finding suggests that an increase in family size increases the child's probability of joining the labor market by almost 10%. This finding is match able with the prior study like Ponczek and Souza (2012). As the number of children increases in families, their financial burden increases, which pushes them to use their children as labor to supplement the income and cover their increasing economic burden.

Similarly, the residence location, i.e., the urban residence of families, lowers the likelihood of child labor. The coefficient associated with the variable suggests that urban families have more than 3% less child labor chances than rural regions; however, this impact is insignificant. This finding is compatible with Mumuni *et al.* (2019). The residence in urban area reduce the child labour because such area provides more job opportunities to people that reduce reliance over the child labour. According to Abdul-Mumuni *et al.* (2019) weak law enforcement in rural areas and lower hiring cost are the factors responsible for high prevalence of child labor in rural areas. Likewise, the coefficient associated with the family structure is negative and significant. This finding suggests that the joint

family system reduces the likelihood of child labor by almost 13% at the 5% level of significance. This impact is also observed by Webbink *et al.* (2012). In the joint family system, the economic burden is shared among various family members that reduce economic vulnerability and reliance on child labor.

The households' debt keeps a positive and significant impact on child labor. The associated coefficient shows that 1% increases in debt increase the child labor probability by 14% at the 5% level of significance. This finding is supported by the study of (Cigno & Rosati, 2000). Usually, the families get loans to overcome their economic difficulties. Nevertheless, their inabilities to repay the loans compel them to send their children to the labor market. Finally, the coefficient associated with the economic shock is positive and significant. The associated coefficient to economics shock suggests that the families who face any interrupted flow of income have almost 39% more chances to send their children to the labor market. The families under economic pressure or stress transfer children's time out of school and enter the labor force to smooth the shocks. Furthermore, for low-income families, the burden of shocks appears more prominent as they cannot cope with them efficiently (Hallegatte *et al.,* 2018)

Interestingly, the above findings are observed for the disaggregated samples. However, there are differences in the coefficients' magnitudes of the variables. For instance, the negative impact of household income on child labor is high in district Mardan, followed by Swat and Peshawar. Similarly, the negative impact of household's head employment on child labor is high in district Mardan, followed by Peshawar and Swat. Additionally, the positive impact of the age and the negative of education of the household's head on child labor is high in Mardan, followed by Swat and Peshawar. The positive and the same magnitude pattern is observed for the household size. However, the negative impact of urban residence on child labor is high for Peshawar, followed by Mardan and Swat. The negative impact of family structure on child labor is high in district Mardan, followed by Swat and Peshawar. Nevertheless, both the urban residence and family structure appear insignificant in all districts. Finally, the positive impact of debt on child labor is only significant in Swat, whereas the positive impact of the economic shock on child labor is high for Mardan, followed by Swat and Peshawar.

Comparison of Well-being of Child and Non-Child Labor

Table 2

Comparison of the Level of Welfare of the Child and Non-Child Labours

		Observations	Welfare Mean	Std. Dev.	Min.	Mix.
Overall Districts	Child Labours	370	2.322	0.658	1.2	3.9
	Non-Child Labours	230	3.140	0.340	2.4	3.9
District Mardan	Child Labours	120	2.184	0.688	1.2	3.8
	Non-Child Labours	80	3.475	0.199	2.7	3.9
District Peshawar	Child Labours	130	2.480	0.584	1.4	3.9
	Non-Child Labours	70	2.971	0.263	2.5	3.6
District Swat	Child Labours	120	2.289	0.674	1.2	3.6
	Non-Child Labours	80	2.955	0.250	2.4	3.6

In the following Table 2, the comparison of the child and non-child laborers' welfare level is given, which are based on the Ress index. It is evident from the table that the average child laborers' welfare is lower than the average welfare of the non-child laborers. For instance, the average welfare level of child laborers in overall districts is 2.322; however, the average welfare level of non-child laborers in overall districts is 3.140.

Similarly, child laborers' average welfare levels in Mardan, Peshwar, and Swat are 2.184, 2.480, and 2.289, respectively. However, non-child laborers' average welfare levels in Mardan, Peshawar, and Swat are 3.475, 2.971, and 2.955, respectively.

Determinants of Child labor's Well-being

Table 3

Determinants of Child Labor's Well-being (OLS Model Estimation)

Variables	Model (1) All Districts	Model (2) Mardan District	Model (3) Peshawar District	Model (4) Swat District
Log Wage	1.157***	1.374***	1.238***	1.609***
	(0.124)	(0.449)	(0.217)	(0.097)
Working Hours	-0.032***	-0.033**	-0.059***	-0.003
	(0.009)	(0.015)	(0.012)	(0.006)
Abuse	-0.049**	-0.076*	-0.017	-0.028
	(0.023)	(0.042)	(0.027)	(0.019)
Hazardous Work	-0.053*	-0.048	-0.058	-0.121***
	(0.029)	(0.045)	(0.039)	(0.033)
Safety	0.108***	0.104***	0.063**	0.030*
	(0.021)	(0.035)	(0.024)	(0.016)
Leisure	0.116***	0.120***	0.109***	0.045**
	(0.025)	(0.042)	(0.027)	(0.019)
Age	0.084***	0.098***	0.042***	0.048***
	(0.010)	(0.025)	(0.012)	(0.013)
Education	0.027***	0.031***	0.032***	0.018*
	(0.008)	(0.011)	(0.009)	(0.009)
Constant	-7.933***	-11.579***	-8.438***	-11.775***
	(1.075)	(3.903)	(2.150)	(0.796)
No. of Observations	370	120	130	120
R-squared	0.927	0.918	0.967	0.983
Economic Controls	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes

Note. Standard errors in parentheses. *** $p < 0.01$. ** $p < 0.05$. * $p < 0.1$.

In the following Table, 3, the estimates of the determinants of child labor's well-being are given. In model 1, the aggregated sample estimates are presented. Whereas in models 2, 3, and 4, the disaggregated or district-

wise estimates of determinants of child labor's well-being are presented for Mardan, Peshawar, and Swat, respectively. We first interpret the aggregated sample estimates.

The coefficient associated with the wage of child labor appears positive and significant. The coefficients suggest that a 1% increase in the wage of child labor increases his well-being by 1.157 units. This finding is in line with Aufseeser (2012), who observed that work opportunities and reliable employment for children could be a significant source of improved well-being than living among the unemployed children in the streets.

Similarly, it is evident that the number of working hours adversely affect the well-being of working children. The coefficient associated with working hours indicates that every one-hour increase in the working time of child labor reduces their well-being by 0.032 units at 1% level of significance. The study of Spurgeon *et al.* (1997) supports the findings by observing that workers' physical and mental health are adversely affected by extended work hours; therefore, their well-being is threatened and reduced by direct and indirect ways. Whereas, the underlying reason for extended working hours is usually the additional income offered by employer.

The associated coefficient suggests that the frequency of child abuse reduces the well-being of working children by 0.049 units. This finding is supported by the study of Woodhead (2004), who observe that working children are vulnerable to maltreatment and emotional and verbal abuse perpetrated by employers, supervisors, clients or others with authority and power. The children's fear that they will be ill-treated can be just a stressful as actual incidents of abuse (Woodhead, 2004).Similarly, the coefficient suggests that the frequency of hazardous work leads to a decrease in the well-being of child labor by 0.053 units. This finding is similar to the study of Posso (2019), who classified child labor into hazardous and non-hazardous activities and observed that children doing non-hazardous work are less likely to have health problems than nonworking children. Conversely, those that work in hazardous activities are more likely to exhibit health concerns. Moayad (2020) stated that obnoxious work environment in less developed economies is considered normal for child laborers and child labor interferes with children health through their involvement in hazardous activities.

The coefficient associated with safety suggests that the provision of safety tools enhances child labor's well-being by 0.108 units. The finding is in line with Shoshani & Slone (2017) and Leather *et al.* (1999), which state that exposure to violence in the workplace can cause damage to psychological as well as physical health, leading to lower well-being.

Additionally, the relationship between leisure and well-being of child labor is positive and significant. The magnitude of the estimate depicts that the availability of leisure time increases children's wellbeing by 0.166 units. The finding is supported by the Savahl *et al.* (2020) and Parfitt and Eston (2005) that active leisure (e.g. physical activity) is positively correlated with well-being.

Additionally, the coefficient associated with the age of the children appears positive significant. The magnitude of the coefficient suggests that every additional year's child labour age increases his welfare by 0.084 units. This finding is related to the study of Shoshani and Slone (2017), which suggests every increment in age is associated with life satisfaction, empathy, self-regulation, a positive approach to learning, and lower mental health problems. Lastly, the coefficient associated with child education is positive and significant. The magnitude of the coefficient suggests a one-year increase in child educations increases the well-being of the child by 0.027 units. The result is supported by the study conducted by Shoshani and Slone (2017). They observed a positive effect of education on children's subjective well-being, mental health, and learning behaviour. Furthermore, Khan et al. (2020) stressed that the non-financial effects of education are equally important

Conclusion

This study investigates the determinants of child labor, the factors that constitute the welfare of child labor, and the factors that affect the welfare of child labor by providing evidence from three major populated districts of Khyber Pakhtunkhwa (KP), namely, Mardan, Peshawar, and Swat. The study used a structured questionnaire and collected data from 200 households in each district. The study applied the Probit model to estimates the determinants of child labor and found that income level of household, household's head employment, household's head education, joint family structure, and residence in urban location reduced the likelihood of child labor. However, household's head age, household' size, debt, and economic

shock increased the likelihood of child labor. Interestingly, in the disaggregated analysis of the factors of child labor, the study observed the same direction of the variables. Nevertheless, the study perceived the difference in the magnitudes of the estimates of the variables. Additionally, this study used Rees Good Childhood and Huebner's SLSS index to measure and compare the welfare of child labor and non-child labor. The findings suggested that child labor has a lower welfare level than non-child labor. Finally, this study applied the OLS technique to estimate the determinants of the welfare of child labor. The findings suggested that the wage of the child, safety measures at the workplace, leisure, age, and education promote the welfare of child labor. However, the number of working hours, abuse, and hazardous work adversely affected child labor welfare.

Policy Recommendations

Based on the above findings, this study suggests some policy recommendations.

1. Since most low-income families are residing in the slum area of districts; therefore, the government should give special focus to these areas in terms of developmental works to reduce child labor.
2. The government should give financial incentives to low-income families to eliminate child labour. Since wage is positively associated with child labor and well-being, these children could be encouraged towards education by providing them free education and incentives in monetary terms equal to their wage. So the opportunity cost of their labor could be covered on all scales.
3. The government should create awareness and educate the parents and societies about the long-term adverse socio-economic effects of child labour to discourage child labor.
4. The government needs to impose child labor laws to discourage child labor.
5. Additionally, it is difficult for the government in developing economies like Pakistan to completely eliminate child labor from market. Hence, the government can take certain measures that could help the children from lower income families to attain formal education and also be the part of labor market for getting various skills. Hence, the government could force the employers to properly compensate working children,

teach them new skills, not force them to do overtime work after certain fixed, and provide them safety tools to promote their wellbeing.

6. Similarly, the government should fine those employers that are involved in any activity that harm the wellbeing of working children.

The Way forward

The issue of child labor is alarming in Pakistan that can be examined from various aspects. Although, this study attempted to examine the causes of child labor and its impact on the wellbeing of child labor; yet, provides a potential area for the researchers to further explore the issue. This can be extended by considering the following points:

1. A large data should be collected that cover all major regions as well as sectors of Pakistan to obtain robust estimates about the determinants of child labor and their well-being.
2. New proxies of welfare of working children should be introduced. These welfare proxies should constructed by taking help from experts in the field of welfare analysis.
3. More advanced econometric techniques should be applied to make a robust analysis of the issue.

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Appendix

Table A1: Descriptive Statistics (Child Labor)

Variable	Mean	*SD*	Min	Max.	Mean	*SD*	Min	Max	Mean	*SD*	Min	Max	Mean	*SD*	Min	Max
	All District				District Mardan				District Peshawar				District Swat			
Household Income	10408.5	3505.2	1000	35000	12031.58	3824.39	7200	35000	9022.02	2074.4	5600	25500	10287.6	3746.6	1000	35000
Household Head Employment	0.34	0.47	0	1	0.26	0.44	0	1	0.35	0.48	0	1	0.4	0.5	0	1
Household Head Age	45.05	6.97	35	60	40.44	3.13	35	50	50.84	6.05	40	60	43.4	6.3	35	60
Household Head Education	4.56	2.29	0	8	5.13	1.74	3	8	3.78	2.72	0	8	4.8	2.0	0	8
Household Size	11.55	2.25	6	15	12.17	2.36	6	15	10.72	2.00	8	14	11.8	2.1	7	15
Residence Location	0.57	0.50	0	1	0.54	0.50	0	1	0.60	0.49	0	1	0.6	0.5	0	1
Family Structure	0.53	0.50	0	1	0.63	0.49	0	1	0.46	0.50	0	1	0.5	0.5	0	1
Debt	22592.53	7686.4	1300	38100	21852.42	7827.76	1300	34950	23958.9	7283.4	10300	38100	21852.4	7827.8	1300	34950
Economic Shock	0.75	0.43	0	1	0.75	0.43	0	1	0.75	0.43	0	1	0.8	0.4	0	1
Wage	4306.30	941.37	2000	6500	4256.67	750.38	2200	5500	4198.08	775.48	2000	5500	4473.17	1220.49	2500	6500
Working Hours	8.13	2.42	3	13	8.15	2.21	3	12	8.28	2.39	3	12	7.95	2.65	3	13
Abuse	0.65	0.48	0	1	0.68	0.47	0	1	0.62	0.49	0	1	0.67	0.47	0	1
Hazardous Work	0.67	0.47	0	1	0.63	0.48	0	1	0.61	0.49	0	1	0.78	0.42	0	1
Safety	0.58	0.49	0	1	0.50	0.50	0	1	0.68	0.47	0	1	0.54	0.50	0	1
Leisure	0.63	0.48	0	1	0.60	0.49	0	1	0.74	0.44	0	1	0.55	0.50	0	1
Child Age	11.71	2.36	7	16	12.01	2.48	7	16	11.88	2.22	8	16	11.24167	2.34071	7	16
Child Education	5.22	2.22	2	11	4.99	2.31	2	9	5.26	2.03	2	9	5.391667	2.334598	2	11

Note. $N = 370$ (All districts), $N = 120$ (District Mardan), $N = 130$ (District Peshawar), $N = 120$ (District Swat)

Table A2: Descriptive Statistics (Non-Child Labor)

Variable	Mean	*SD*	Min	Max.	Mean	*SD*	Min	Max	Mean	*SD*	Min	Max	Mean	*SD*	Min	Max
	All District				District Mardan				District Peshawar				District Swat			
Household Income	15180.9	4614.3	9000	33500	16616.50	4199.89	11100	29000	14037.43	5972.52	9000	33500	14745.75	3080.15	9700	27350
Household Head Employment	0.8	0.4	0	1	0.88	0.33	0	1	0.74	0.44	0	1	0.90	0.30	0	1
Household Head Age	37.9	5.3	30	50	34.96	3.28	30	40	42.59	4.52	35	50	36.81	4.79	30	49
Household Head Education	9.3	3.5	2	16	9.48	2.94	5	14	9.06	4.33	2	16	9.41	3.37	2	16
Household Size	9.1	1.8	5	12	9.53	1.77	5	12	8.31	1.53	6	12	9.25	1.73	6	12
Residence Location	0.6	0.5	0	1	0.64	0.48	0	1	0.53	0.50	0	1	0.61	0.49	0	1
Family Structure	0.7	0.4	0	1	0.80	0.40	0	1	0.71	0.46	0	1	0.71	0.46	0	1
Debt	12808.9	5954.1	0	34800	11865.13	2300.39	8000	15900	14965.99	9937.44	0	34800	11865.13	2300.39	8000	15900
Economic Shock	0.2	0.4	0	1	0.13	0.33	0	1	0.11	0.32	0	1	0.36	0.48	0	1

Note. $N = 230$ (All districts), $N = 80$ (District Mardan), $N = 70$ (District Peshawar), $N = 80$ (District Swat).