Developing a Policy Solution to Address Child Labor: The Case of Afghan Refugee.

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Abstract

Among socioeconomic issues that are closely linked with the formation of human capital is the threat of child labor. And, the right to acquire education is the fundamental human right. Indeed, the phenomenon of child labor is prominent among Afghan refugees living in Pakistan. The socioeconomic factors play an important role in determining child labor. In fact, these factors are the main driving forces of the country's economic development. Thus, the objective of this study is to identify the socioeconomic factors of child labor among Afghan refugees. The sample for this study comprises of 281 refugee's household, and, 916 Afghani's children aged 5-14 years are obtained through household survey by the researcher in district Quetta, district Pishin and Lorlahi. In order to determine the probability of child labor among afghan refugees the logistic model is estimated. The estimation of the logistic models shows that the child factors Age and Ethnicity and gender has significant impact on child labor. And, child labor is prominent in Lorlahi Refugees cam as compare to District Quetta and Pishin.

Additionally, the social welfare indicator is also affecting the incidence of child labor among Afghan refugees. There is sever lack of basic facilities which push afghan children to child labor. the primary reason the household head reported are poverty, no return to education and no access to school. Therefore, this study recommends to improve the living standard of afghan refugees. and the government and other stakeholder have to take poverty allivation programs. And, finally the study recommends formation of refugee's law in Pakistan.

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Key Words: Afghan Refugees, Child Labor, Logistic regression, Socioeconomic factors

1 Introduction

Among socio-political issues that are closely linked with the formation of human capital of a country is threat of child labor. Working of school-aged children leads to loss of educational and developmental milestones and leads to insufferable damage to child future. The International Labor Organization (ILO) defines the term “Child Labor” as “a work that destitute children of their childhood, their potential and dignity, additionally that is harmful to mental and physical development of child. Actually, it refers to work that is; socially, morally, mentally and physically hazardous and detrimental to child development. And, interferes with child schooling by, depriving them to attend school and compel them to leave school permanently or combine school attendance and work (ILO, 2021a).

In recent years, there has been a growing interest in child labor among academics, professionals, media and many international organizations. All stakeholders have universal agreement that child labor is undesirable and should be eradicated. But, have no common agenda to tackle this problem. though, it's generally believed that the starting point for child labor is associated with Industrial revolution in Europe. However, historians believe that child labor was at its peak during expansion of domestic season before the industrial revolution. And, the industrial countries first felt the negative repercussions of child labor. Therefore, the incidence of child labor latter on reduced in industrial states owing to economic prosperity, the demand for child labor reduced and child labor supply was absorbed by universal schooling (Fyfe, 1989).

On the other hand, incidence of child labor is rooted in developing countries. Unfortunately, the progress against child labor is stagnant since 2016, in fact worldwide the number of child labor increased from 151 million to 160 million by 2020 (UNICEF, 2021). Additionally, the persistence of child labor could augment to 168 million from 160 million, if immediate remedial measures are not taken. This threat is due to the covid-19 pandemic (UNICEF, 2021). In Asia and pacific 62 million children are working as child labor reveled by the International Labor Organization (ILO, 2021b). In subcontinent children were always engage in agricultural sector. Because, in majority of the villages a single school was not available. Thus, parents considered child working in farm as batter option and as a form of capital investment because children were learning while doing work in farms. However, with British entry massive exploitation of children beguine in subcontinent. Pakistan, being a developing country is also facing the incidence of child labor in different forms. In fact, child labor in Pakistan began during Ayoub khan era of 1960s when he committed to enlarge the industrial sector in Pakistan. However, two laws were passed in Pakistan to eradicate the incidence of child labor in country. The first 1991 Employment of Children Act (ECA) (PECA, 1991) which prevented the use of children under age of 14 in hazardous environment in industries or mine. And, in 1992 second law was passed as Bonded Labor Act (BLA) (BLA, 1992), which banned Peshgi system. Furthermore, Pakistan ratified Convention No 182 of UN in 2001 (UN 182, 2001, p. 18).but still exploitation of children exists in Pakistan on large scale.

Child labor is widely believed to be a social evil and have negative repercussions on socioeconomic development of developing countries such as Pakistan. And a prominent issue in Pakistan. According to child labor survey in Pakistan (1996) - ILO child labor was 3.3 million (Pakistanis ILO, 1996). however, the number of child labor increased to 12.5 million by 2015, (Pakistan labor survey 2014-15) (Labour Force Survey 2014-15, 2014). Moreover, Pakistan Social and Living Standard 2018-19 survey reveals that in Pakistan 30% of children aged between 5-6 are out of school. Indeed, regional disparity exists largest for Balochistan 59%

followed by Sindh 42%. Similarly, the literacy rate in Pakistan according to PSLM 2018-19 is 60% and lowest in Blaochistan with only 40% population in Provence are literate (PSLM / HIES 2018-19, 2018). The incidence of child labor is also common among Afghan refugee children living in Balochistan. (ILO, 2012) 45417 children having age between 10 to 14 were working. in fact, majority of them belongs to afghan refugee's children. In the same way, (Tufail et al., 2004), founded that there were around 15,000 street children in Quetta city, the key reason behind huge number is afghan immigrants. According to the United Nation of High Commissioner for Refugees (UNHCR), repot, Net enrolment ratio in primary education of refugees living in camps12% (M), 10%(F). And, in urban area 13%(M), 11%(F). Proportion of students starting grade 1 who reach grade 5 among refugees who live in camps is 52%(M), 30%(F) urban area 46%(M), 35%(F). Moreover, Literacy rate of 15-24 year-olds in camps 39% and in urban area literacy rate is 47%.

Although, work make some positive contributions to child development. Such as it makes one responsible, independent, and befit their families financially to meet subsistence, or provide an opportunity to learn some skills. On the other hand, working children face many problems and serious repercussions on child personal life and society as a whole. There is more probability of morbidity, injury and hazard risk for working children. Along with adverse health outcomes, they are exposed to environmental and psychological hazard in workplace (Graiter and lerer, 1998). Thus negative impacts are more than positive contributions. Therefore, it's important to investigate the issue before the formation of remedial measures.

Unfortunately, there is no single study that cover the issue of child labor among Afghan refugees living in Pakistan for last 40 years, with 2.4 million register population in the country (UNHCR). They are ignored by all stakeholders. In fact, the incidence of child labor among Afghan refugee's children living in Balochistan is high (45415 working children (ILO, 2012). And, have different situation therefore there might be different socioeconomic factors behind child labor among Afghan Refugees. Therefore, it's important to investigate the root causes with in context of Afghan refugees. Similarly, they deserve special policy measures to eradicate the incidence of child labor among Afghan refugees. Therefore, the objective of this study is to investigate the socioeconomic factors behind child labor among afghan refugees. And, the way forward.

2 Literature review

This section of the study comprises of the theoretical and empirical literature related the topic. Indeed, it's very necessary to have a comprehensive idea of the existing theoretical and empirical studies on the socioeconomic factors of child labor among Afghan refugees. this, require to study the existing literature relevant to the objective of the study, and to identify the gap and make clear the procedure to cover the gaps. Although there exist large number of theoretical and empirical literature on the determinants of child labor. However, there are very limited literature on Afghan refugees. thus, this section comprises of the existing literature relevant to the objectives of the study.

In fact, most of the existing studies has focused on the empirical analysis of child labor. and, important exception, however, is (Basu & Van, 1998) provided a model of an economy where the persistence of child labor is potentially essential element. According to the model economy exhibits multiple equilibria. And, the prevalence of child labor in equilibrium depends on the economies level of production. In fact, there exist inverse relationship between child labor

and productivity of the economy. Child labor in equilibrium exist if the economy is potentially unproductive, and there is no child labor is the economy is very productive. The assumptions taken for this analysis includes “Luxury Axiom” which state that Children participate in labor if the household income other than child labor earning are less than the substance level. The second “Substitution Axiom” states that child and adult labor are substitute for each other’s.

Although these two essential axioms concerned with the micro-behavior of firms or households, Swinnerton & Rogers, (1999) have added an additional axiom to (Basu & Van, 1998) which is important for macro level behavior. That is " Distribution Axiom " which state that the income from non-labor sources are concentrated to few elites in economy. And, if the wealth is distributed equally than a bad equilibrium in BV model cannot exist. Moreover, they indicated three possible levels of labor supply. One is same is that of BVs good equilibrium where, the adult wages are high enough to cover subsistence consumption. Similarly, other as BVs bad equilibrium, where all household send their children to work. And, finally only those send children to work who do not get dividends. And, the children belonging to households who own capital do not send children to work. Thus, the main reason behind child labor they consider is inequality or uneven distribution of incomes.

Additionally, In a paper Ranjan (1999) developed a model which shows how poverty and imperfect credit market pushes to incidence of child labor. In fact, the study concludes that if parents have enough borrowing sources and the return to education is greater than the financing cost. In such circumstances parents will send their children to school rather than labor market irrespective of parent’s level of income. Moreover, in absence of credit opportunity child labor act as smoothing the household consumption. Therefore, inadequate borrowing opportunities along with poverty leads to phenomenon of child labor in developing countries. Furthermore, as policy recommendations, this study stress to improve the well-being of household to send their children to school through, income support. And, a ban on child labor further augments the difficulties of impoverished household.

Empirical studies in this area has mainly been occupied with child labor decision and intergenerational persistence of child labor. Emerson & Souza, (2003)**,** empirically studied intergeneration persistence of child labor or child labor trap in Brazil. In fact, they have found the evidence of child labor trap in economy. Moreover, the study revels statistically significant association between parent’s child labor, and education with those of the children. They found that children were more likely to be working if their parents had experience in their childhood. And, higher the level of education of parents the less likely the children are in labor market. Moreover, the grandparent’s education level indirectly impacts the child labor status through parent’s education. Additionally, earning of an adult are less if he/she inters the market earlier. All in all, the study indicates the child labor trap, when parents experience child labor incidence, they will have lower income owing to low level of human capital and thus, will chose to send their children to work. and this chain continue. Therefore, the policy makers should target household rather than individuals in order to break this cycle.

Likewise, Togunde & Weber,(2007) have studied intergenerational persistence of child labor in urban Nigeria. In fact, the analysis of the study is derived from 2002 survey which comprises of 1535 interviews from parents and children. The findings of the study show that poverty is the major cause of child labor in Nigeria. Furthermore, they perceive child work as training for future occupation. Moreover, the study reveals that child labor is a cultural practice that passes from one generation to another. In fact, the parents own socialization in child labor

also leads to ask their children to participate in labor market. However, majority of the children reveled that they do not want to continue this cycle of child labor for next generation, owing to their own bad experience in work. Furthermore, the study shows higher level of parental education, income, smaller family size, professional occupation of parents discourages children to pass this cultural practice of child labor. Thus, parent's socio-economic status strongly influences the children desire to end intergenerational persistence of child labor.

Moreover, empirical studies have investigated the probability of child labor with respect to socioeconomic factors in general and poverty in particular. (Amin et al., 2004), suggested poverty as prominent factor in deciding child work status. And, they can't afford to keep their children away from work. Furthermore, the study reflects that being in household headed by male is the second key factor of child work status. Additionally, child work probability increase with age and decrees with another year of schooling. And, household size has positive impact on child labor. Indeed, one-unit increase in household size leads to increase child work probability by 0.7. and, child parental education is negatively associated with child labor. (Avais et al., 2014), investigated socio-economic factors of child labor in carpet weaving industry in Ali WAhan, district Sakker. The finding of the shows that 58% of respondents were never enrolled to school. And, 84% of the respondents started work owing to poverty. In fact, majority of the respondents reveled they were interested to go to school. Moreover, working children's parents were illiterate. To sum up, the study shows that poverty constraint is the primary factor behind child labor in carpet weaving industry. Other socio-economic factor includes the lack of education, discrimination towards female education, lack of awareness and materialistic objectives.

(Lodhi et al., 2011), analyzed the effects of various individual, household and community level characteristics on probability that children engage in different activities. They found that per capita income had a significant impact in determining child activities. Increased income was associated with a decline in child labor, combined work and secular attendance, inactivity and rise in secular school attendance. (Bar & Basu, 2009) examine the impacts of rising household land ownership on incidence of child labor using overlapping generation model. The results indicate that child labor rises with small rise in land ownership. And, as the household land ownerships continues to rise the child labor declines. All in all, a rise in land ownership increase incidence of child labor in short-run but, in long-run child labor declines with land ownership.

(Kuépié, 2018) tested the hypothesis that child labor is rational response to low returns to education in Mali. The results of the study show that when the earn more than predicted given their education level or when they perceive that return to education are high in labor market this leads to lower the probability of child being engage in work, vice versa. Moreover, the conceptual model after the literature review suggest that education is not always a guarantee of good integration in Sub-Sharan African labor markets and revels that this failure is the result of insufficient investment in education of children by parents.

(Mohamed Baqutayan et al., 2020) examined the issues and way forward to eliminate child labor, based on opinion of Malaysian Civil Servant. Moreover, grouped eight factors which are contributing to curb the incidence of child labor. These are religion, awareness, humanity,

ethic, culture, demand side, supply side and policy. The results indicate that from religious points of view, importance of knowledge as an obligation is key factor that influence child labor issues. Similarly, awareness on child education as long-run returns associated. Moreover, among humanity factor lack of access to education and socio-economic disparities are contributing to child labor. And, cultural factor indicate that cast system, discrimination and biasness towards girls leads them to child labor. In addition to, on supply side study revels child labor as household poverty driven. And on demand side its low cost of hiring child labor as compare to adult.

(Jafarey & Lahiri, 2005) examine the effects of two main policy proposals related to child labor, which includes food for education and investment in education system both in quantity and quality of education, that how these effects the household decision to send children in market for works. And, their choice of sending children to school, Using two period model. The findings of the study suggest that an increase in food for education subsidies financed through foreign aid will decrease the incidence of child labor irrespective of credit market situation. On the other hand, the second policy proposal investment or improvement in the quality of education will reduce child labor if the supply curve of the credit is elastic. However, if the credit is inelastic, the supply tends to sufficiently inelastic, then the investment in education can augment child labor. Additionally, the study reveals the best option between two policy proposals depends on nature of elasticity of credit supply, thus given the fixed amount of resources, more resources should be allocated for food-for education if the credit supply is inelastic. Because these will prevent from borrowing, but if they (household) have no borrowing constraints and, faces elastic supply of credit, then the best option is to allocate more resources for improvement in education.

2.1 Human Capital Theory

Anything that increase income or yield useful output with passage of time is capital. Thus, investment in education, training, health and honesty are capital. Because these are associated with increased income, batter health and skills. And, these are called human capital because these produces human and one can’t separate health, skills or knowledge from a person. However, education and training are the most important investment in human capital (Becker, 2009). In fact, investment in human capital is associated with increased earnings and productivity. Moreover, education is key element for human capital and essential for sustainable socio-economic development of a society. Indeed, education leads to reduce poverty, inequality, improved health and civilized society.

(Nelson, 1996), suggested that education increases human capital formation, which intern leads to economic growth and development. (Sianesi & Reenen, 2003) identified that along with direct effect of education to economic growth it enhances economic growth and development indirectly by providing other inputs of production. Different studies have suggested different impacts of level of education at different stages of economic growth of a country. (Petrakis & Stamatakis, 2002) suggested that for developing countries primary and secondary education more impacts on their economic growth. And, founded that higher education is more important for economic growth in developed countries. All in all, human capital formation leads to economic growth, batter health, reduces inequality, civilized society and implementation of law and order in country.

However, the findings of the study suggest loss of human capital in context of Afghan Refugees, living in Balochistan, Pakistan. which has, serious repercussion on socioeconomic

development. Indeed, the study shows the on average 74% of the household head are illiterate and, the literates are only able to read and write but have no skills. Moreover, more than 52% of the children among Afghan refugees have no formal education. Likewise, about 53% of the children are participating in child labor. These facts revel the loss of capital formation among afghan refugees. and, they will have stuck in this trap for log time, if didn't invested in education. Similarly, the lack of human capital adversely affects the refugee's standard of living as indicated in the study.

2.2 Research Gap

Exiting literature in context of Afghan refugees covers the health aspects (Kassam & Nanji, 2006), (Lipson, 1991), (Lipson & Omidian, 1992), (Naeem et al., 2005), (Purdin et al., 2009), Afghan refugees status (Malik et al., 2019), (Kronenfeld, 2008) and about future prospacts of afghan refugees (Ghufran, 2006), (Margesson, 2007). However, there is no single study that cover the issue of child labor among Afghan refugees living in Pakistan for last 40 years, with 2.4 million register population in the country (UNHCR). They are ignored by all stakeholders. In fact, the incidence of child labor among Afghan refugee's children living in Balochistan is high (45415 working children (ILO, 2012). And, have different situation therefore there might be different socioeconomic factors behind child labor among Afghan Refugees. Moreover the phenomenon of child labor is context specific (Grootaert, 1998). Therefore, it's important to investigate the root causes with in context of Afghan refugees. Similarly, they deserve special policy measures to eradicate the incidence of child labor among Afghan refugees. Therefore, the objective of this study is to investigate the socioeconomic factors behind child labor among afghan refugees. And, to suggest the way forward.

3 Research Methodology and Field Visit

This study is based on the primary data collection which is collected from three districts of Balochistan. Including district Quetta, district Pishin and district Lorlahi. In Quetta different areas were selected where the Afghan Refugees were living. In district Pishin; two main camps Surkhab Wardag camp and Surkhab Karaz camp were selected. Similarly, in Lorlahi; Afghan Refugees camp 1 and camp 2 were selected. Mixed research strategy is used for the study. Household survey and Simi structured interviews were the main tool used for the data collection. Household survey was conducted among the refugees for the identification of socioeconomic factors of c and Simi structured interviews were designed for the policy proposal and conducted with the key informants.

The survey provides information on respondent's location, monthly income, household size, occupation, age, education level, ethnicity and key indicators of standard of living. This study has make use of Convenience Sampling method in order to collect data. The targeted population were Afghan Refugees living in Balochistan. And, the sample size of the study is 281 Afghan refugee's household, moreover, 916 children were selected for the analysis of socioeconomic factors of child labor. in order to identify the probability of child labor the study has used logistic regression.

Variables definition and summary statistics (Table 3.1)

Variables	**Definition**	**Mean / Percentage**
Dependent variable	Child labor	
	1 if the child is working	53
	O if the child is not working	47

Age of Children	1 if the child age is between 5-6	20
	2 if the child age is between 7-8	20.4
	3 if the child age is between 9-10	19.0
	4 if the child age is between 11-12	18.9
	5 if the child age is above 12 years	21.4
Child Sex	1 if the child is Male	56
	0 otherwise	44
Child Education Level	0 if child have no formal education	52.6
	1 if child have primary education	26.2
	2 is child receive religious education	18.3
	3 if child have higher education	2.84
Child Ethnicity	0 if the child ethnicity is Mughal	50.2
	1 if the child ethnicity is Pusthun	11.7
	2 if the child ethnicity is Baloch	15.6
	3 if the child ethnicity is Tajik	8.7
	4 if the child Ethnicity is Uzbek	13.8
Household Head Occupation	0 if Household Head is not working	32.8
	1 if household Head is working in Manufacture sector	7.9
	2 if household Head is working in Agriculture Sector	9.7
	3 if Household Head is working in Services Sector	33.4
	4 if household Head is working in Construction	16.3
Household Head Literacy	0 if Household Head is Illiterate	25.7
	1 if Household Head is Literate	74.3
Household Age	Household Head in completed years	50.4
Household Size	1 if Household size is Small	16.8
	2 if Household Size is Medium	42.9
	3 if household size is Large	31.6
	4 if household size is very large	8.7
Locale (Districts)	0 if respondents are living in district Lorlahi	11.4
	1 if respondents are living in district Quetta	65.1
	2 if respondents are living in District Pishin	23.8
Region	0 if Rural	65.1
	1 if Urban	34.9
Monthly Income	1 if monthly Income is less than 15k	27.0
	2 if Monthly income is between 15k-30k	23.1
	3 if monthly income is between 30k-50k	28.5
	4 if monthly income is between 50k-80k	15.4
	5 if Monthly income is above 80 thousand	6.0
Availability of Electricity	1 if Household have access to electricity	32
	2 if household have no access to electricity	68
Gas connection	1 if Household have Gas Connection	33.3
	2 if household have no gas connection	66.7
Afghan Citizen Card	1 if Household Members have Afghan citizen card	74.2
	2 if Household Members have no Afghan citizen card	25.8
Access to Public School	1 if have access to Public School	11.4
	2 if have no access to Public School	88.65
Access to Special School	0 if children have no access to Afghan Special School	28.93
	1 if children have access to Afghan Special School (NGO operated	58.30
	2 if children have access to Afghan Special School (Private)	12.80
Access to Clean Drinking Water	0 if household have no access to Clean Drinking water	34.83
	1 if household have access to Clean Drinking Water	65.2
Land Ownership	1 if household have Land Ownership in Pakistan	33
	2 if household have No Land Ownership in Pakistan	67
Availability of Basic Health Unit	1 if Basic Health Unit is available in the region	12
	2 if Basic Health Unit is not available in the region	88
Is NGO operate in the Region	1 if NGO operates	65.3
	2 otherwise	34.7
Time consume on round trip to fetch the drinking water	0 if water is inside home	3
	1 if round tripe consumes 1-15 Minutes	8.5
	2 if round tripe consumes 16-30 Minutes	18

	3 if round tripe consumes 31-45 Minutes	27
	4 if round tripe consumes 46-60 Minutes	25
	5 if round tripe consume more than 60 Minutes	19
Main Source of Drinking water	0 if the main source of water is Piped water	22
	1 if the main source of water is Hand Pump	7.1
	2 if the main source of water is Motorized pumping/tube well	4.2
	3 if the main source of water is open well	12
	4 if the main source of water is Tanker/Truck/Water bearer	10
	100 if the main source of water is Rahrhi	
How far Source of Drinking water	**0 if the water is Inside the home**	21.3
	1 if the distance to main source of water is 0- .5km	8.1
	2 if the distance to main source of water is .5+ - 1km	24.4
	3 if the distance to main source of water is 1+ -2km	28.2
	4 if the distance to main source of water is 2+ - 5km	9.4
	5 if the distance to main source of water is 5+ km	8.59
No of Rooms	0 if the number of rooms in home is 1-2	23
	1 if the number of rooms in home is 3-4	47
	2 if the number of rooms in home is 5-6	20
	3 if the number of rooms in home is 7-8	6
	4 if the number of rooms in home is above 8	4
why send to work	0 if parents consider Poverty as main reason of child work	60.6
	1 if parents consider No future returns as reason of child work	20.2
	2 if parents consider No access to school as reason of child work	15.4
	3 if parents consider Culture as reason of child work	3.8

3.1 Econometrics model

Econometric models are the statistical tools used in economics or econometrics. And the econometric models specify the relationship between variables under study. For this study we have estimated the logistics model for child labor among afghan refugees. the model estimated in the study are given as follows.

This study has estimated the relationship between child labor and the child, household head, and household characteristic. The outcome variable used in the equation or model is "Child Labor" and the explanatory variables included in the model includes the "Child, Household Head, and Household" factors. The functional forms of the equations estimated are as follows;

$$child\ labor = f(child\ , household\ head\ , household\ characteristics, welfare\ indicatotres\ )\ldots.(1)$$

Algebraically the relationship between child labor and the explanatory factors used in equation (1) can be written as follows;

$$y = \beta_o + \beta_i X_i + \mu_i \quad \ldots\ldots.(2)$$

Where y is the outcome variable , X_i is the factor of explanatory variables such as child, household, household head and social welfare characteristics. β_i is the parameter, U_s is the error term. The equation (2) can be rewrite as given;

$$y_o = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \mu_i \ldots(3)$$

the equation (3) can be written as given below

$$CL = \beta_o + \beta_1 CAG + \beta_2 CEDU + \beta_3 GEN + \beta_4 CETH + \beta_5 SIZ + \beta_6 LOC + \beta_7 INC + \beta_8 HOCU + \beta_9 LIT + +\mu_i \quad \ldots\ldots\ldots (4)$$

In the equation (4), the symbol CL is the dependent variable "Child Labor", are the is the β_o is the intercept and $\beta_1$to $\beta_{10}$are the slope parameters. And μ_i is the error term. CAG is child age, $CEDU$ is child education, GEN is child sex, $CETH$ is child ethnicity, SIZ is household size, LOC is locale, INC is household monthly income , $HOCU$ household head occupation , LIT is household head literacy.

Additionally, we have included social welfare indicators in the logistic regression. To investigate the relationship between child labor and social indicators. The functional forms of the welfare indicators are given as follows.

$$child\ labour = f(social\ indicators) \ldots\ldots (5)$$

Algebraically the relationship between child labor and the explanatory factors used in equation (5) can be written as follows;

$$y_i = \beta_o + \beta_i X_i + \mu_i \quad \ldots\ldots (6)$$

Where y_i is the outcome variable, β_o is the intercept parameter, β_i is the slope parameters, Xi factors of social indicators and μ_i is the error term. The equation (6) can be rewrite as follows;

$$y_o = \beta_o + \beta^1 X^1 + \beta^2 X^2 + \beta^3 X^3 + \beta^4 X^4 + \beta^5 X^5 + \beta^6 X^6 + \beta^7 X^7 + \beta^8 X^8 + \beta^9 X^9 + \beta^{10} X^{10} + \beta^{11} X^{11} + \mu_i \ldots\ldots (7)$$

The equation (7) can be written as given below;

$$CL = \beta_o + \beta^1 AVWTR + \beta^2 GAS + \beta^3 ACC + \beta^4 PSCL + \beta^5 SPSCL + \beta^6 ROOM + \beta^7 LAND + \beta^8 SOWTR + \beta^9 BHU + \beta^{10} WSTW + \mu_i \ldots\ldots (8)$$

Where CL is the outcome variable "child labor" . β_o is the intercept parameter, $AVWTR$ is the variable "access to clean drinking water", GAS is the variable "gas connection" ACC is the social indicator "Afghan citizen card", ", $PSCL$ is the factor " availability of public school" , $SPSCL$ is the variable "availability of special school", $ROOM$ is the social indicator "no of rooms", ", $LAND$ is the variable "land ownership" $SOWTR$ is the variable "main source of drinking water, $WSTW$ is the factor "why send to work", μ_i is the error term.

The equation estimated we have merged equation 4 and 8. The equation is given as follow.

$$Child\ labor = f(Child\ , household\ head\ , household\ characteristics, social\ indicators) \quad (9)$$

Algebraically the relationship between child labor and the explanatory factors used in equation (9) can be written as follows;

$$y_i = \beta_o + \beta_i X_i + \mu_i \ldots (10)$$

Where, y_i is the dependent variable "child labor"

X_i is the factor of explanatory variables used in study

β_o is the intercept and β_i the slope parameters.

And, μ is the error term.

In fact, the equation (10) is estimated for this study, using logistic regression. Because the outcome variable used in the model is dictums or binary.

3.2 Logistic Regression

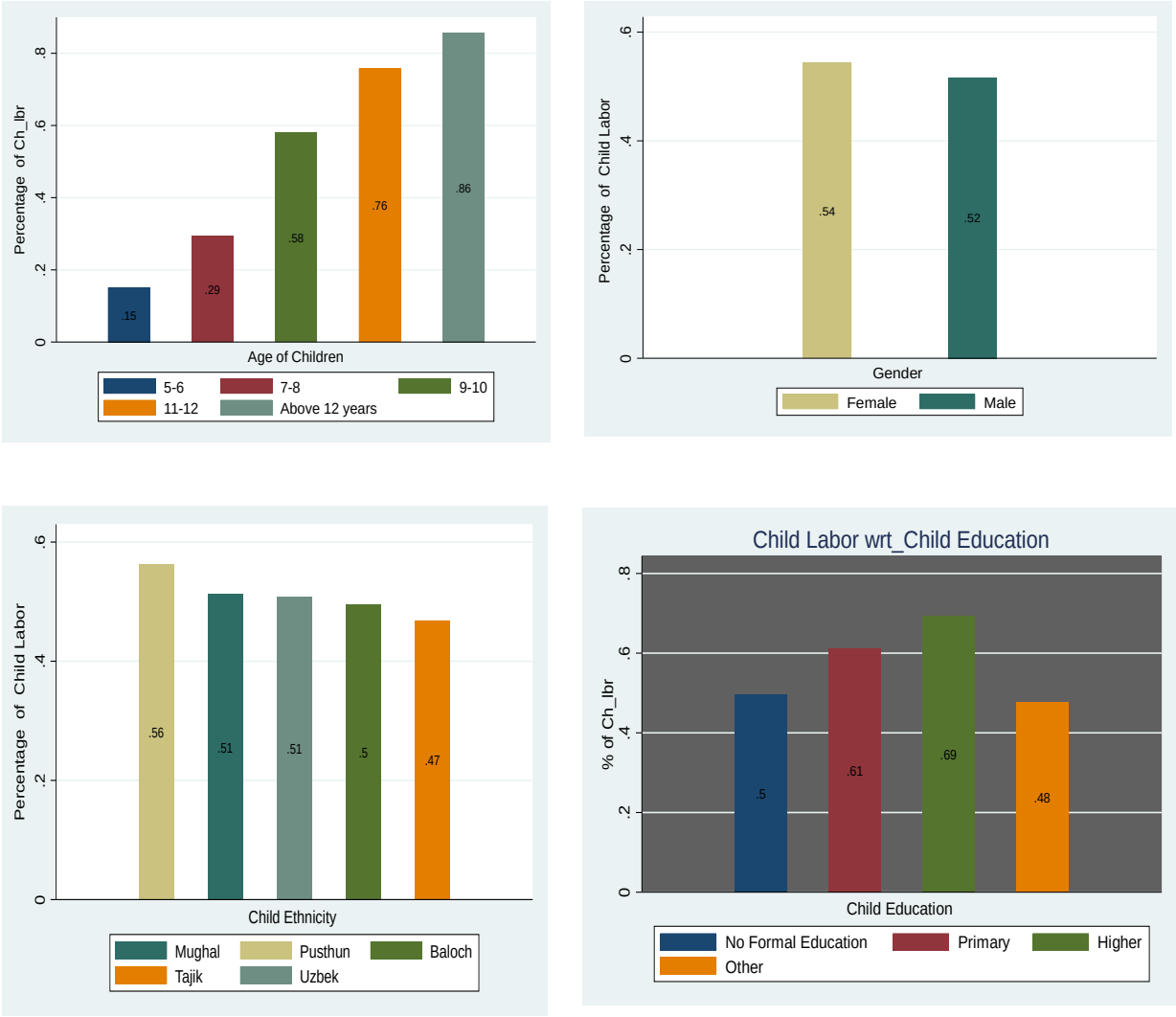
For this study we are using logistic regression to explore the way in which explanatory variables used in the study influence the likelihood of child labor. because the outcome variable is dichotomous, the (OLS) ordinary least square method is not perfect for this estimation. Rather, a logistic model is used to estimate the probability of child labor among afghan refugees. The study reports predicted odd ratios along with the marginal effects of explanatory variables used in the study. The partial derivatives of marginal effects of explanatory variable is calculated as $\vartheta p\ (y = 1)\ /\ \vartheta x = \beta p\ (1 - p)$ where x represent explanatory variable, is the logistic parameters and is the probability or likelihood that outcome variable (child labor) equals 1 , and $(1 - p)$ indicates the probability that y is o.((Liao & Liao, 1994) (Maddala, 1988) (Allison, 1999).

5 Discussion of the Results

Incidence of child labor with regards to socioeconomic factors

5.1 Child Labor with Regards to Child Characteristics;

Fig; 1

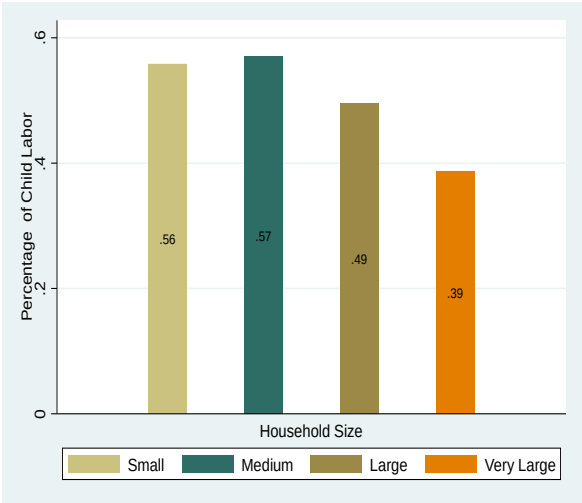


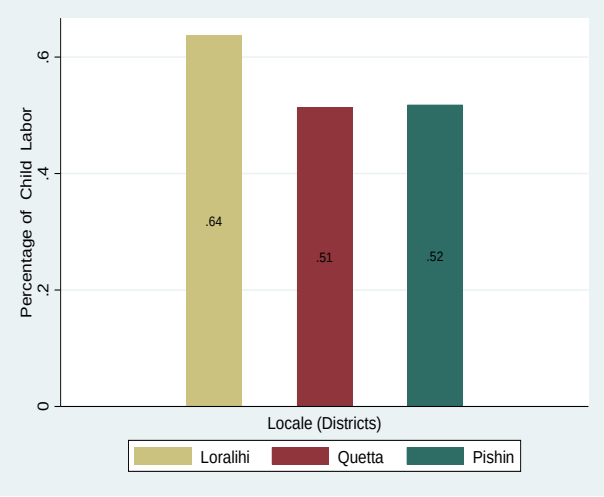
The bar graphs in figure 1 shows the relationship of child labor with respect to child characteristics. The graphic analysis indicates that the probability of child labor increases with child age. And, this is gender differentials as 54% of the girls are participating in child labor among afghan refugees. moreover, the incidence of child labor is high among Pasthun ethnic (56%) and lowest if the child ethnicity is Tajik (47%). Additionally, the children with religious

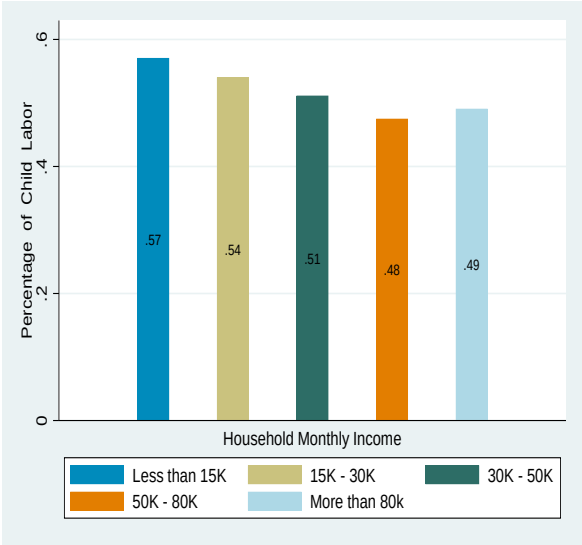
education are less likely to participate in child labor as compared to the children with higher education. This may be due to the age factor of the children.

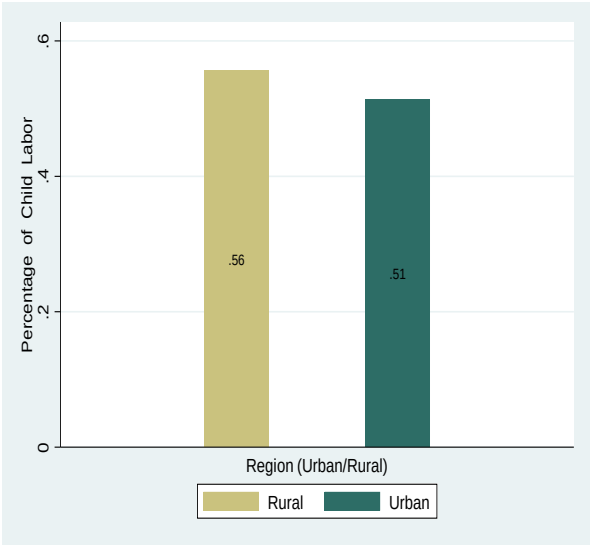
5.2 Child labor with regards to household characteristics

Fig 2





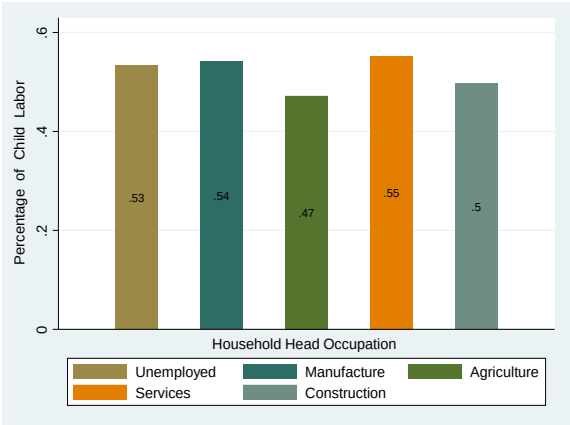




The bar graphs in the figure 2 indicates the phenomenon of child labor among afghan refugees with respect to household characteristics. As shown in the figure 1, child labor is negatively associated with the size of household. In fact, the percentage of child labor decreases with the rise in household size in context of Afghan refugees. this may be due to the distribution of responsibilities among household member. And, the percentage of child labor among afghan refugees is less when the household monthly income increases but overall income has negligible impact on child labor in case of Afghan refugees. based on the locale (Districts), on average the percentage of child labor is high (64%) in district Lorlahi and the persistence of child labor is about 51% in district Quetta and Pishin. Furthermore, the figure shows the relationship of child labor with regards to region (urban/rural). The findings indicate that on average the child labor is more in rural areas (56%) as compare to the urban areas (51%) under study in case of afghan refugees.

5.3 Child Labor with regards to household head characteristic

Fig 3



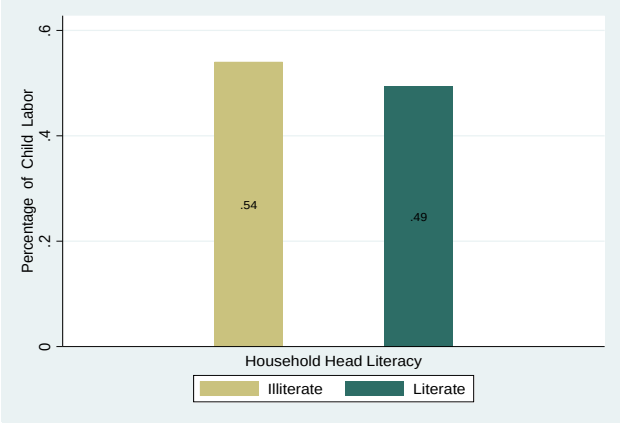
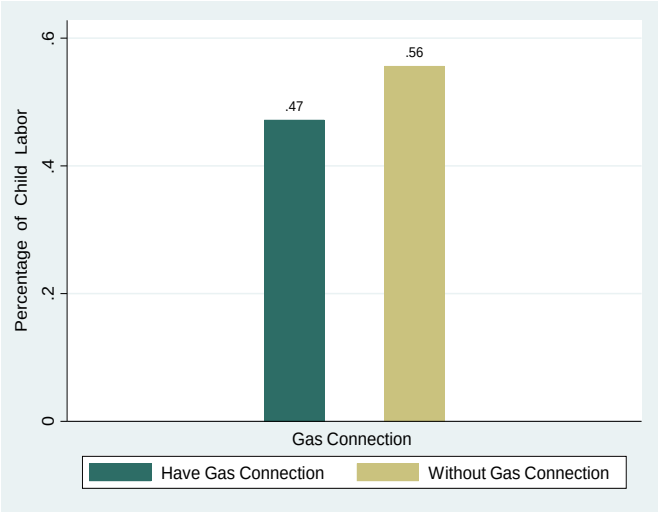


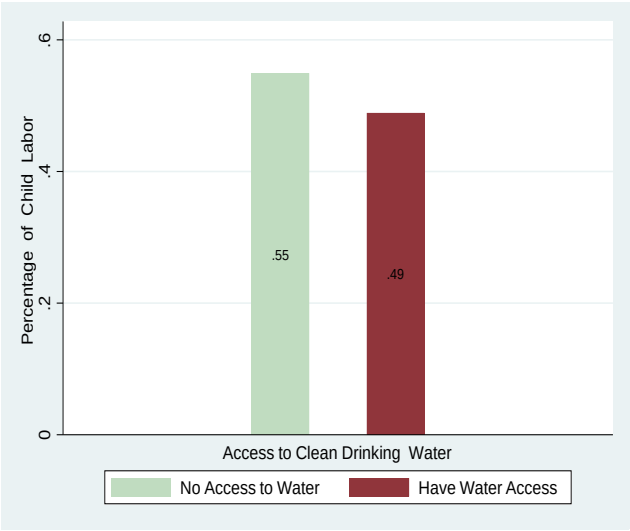
Figure 3 shows the percentage of child labor with respect to household head characteristics among afghan refugees. the analysis indicates that with respect to household occupation the percentage of child labor is less with the household head occupation is agriculture and highest when the household head work in services sector. And, the factor literacy indicates that the child labor among refugees is high when the household are illiterate as compare literate household in the context of Afghan refugees.

5.4 Child Labor with regards to Welfare Indicators

This section of the study shows the percentage of child labor with respect to social indicators or the Afghan refugees' standard of living. The social indicators used in the study includes access to clean drinking water, availability of electricity, gas, access to public school, Afghan special school, main source of drinking water etc. the graphic relationship of child labor with regards to social indicators is given as follows

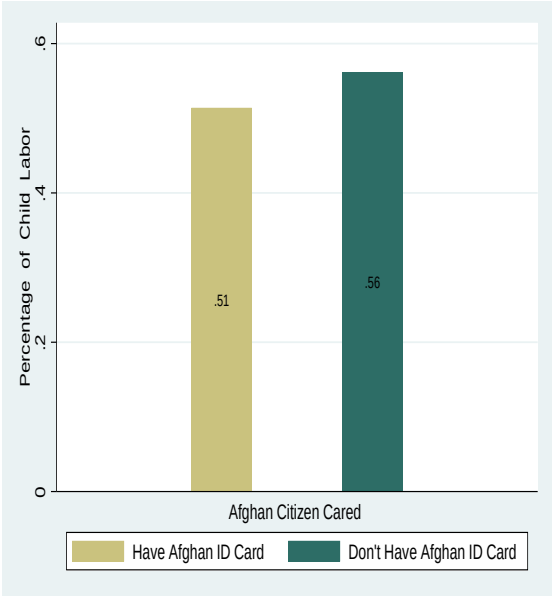
5.4.1 Child Labor and Access to Clean Drinking Water and Gas Connection

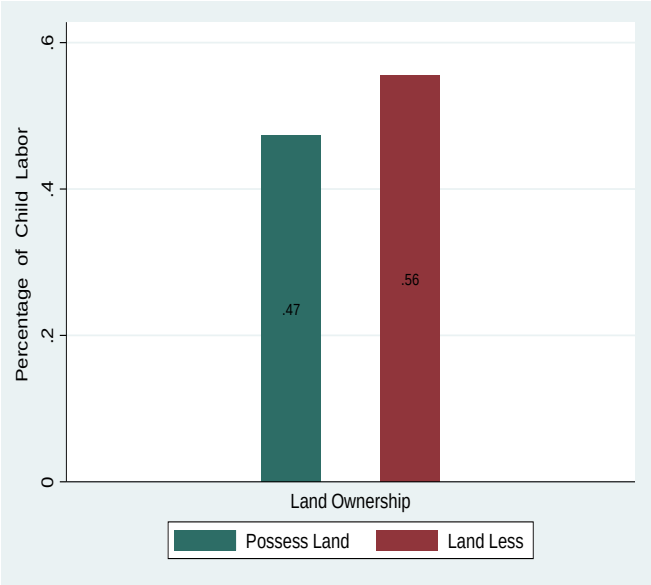


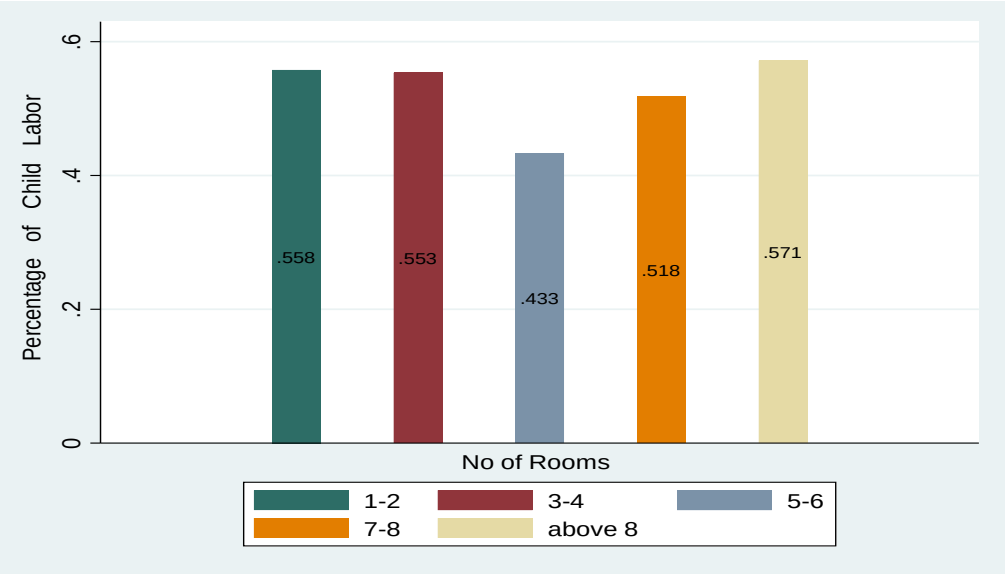


The above graps alienates the incidence of child labor with respect to clean drinking wate and electricity. Indeed, the study indicates that the incidence of child labor in negatively related with the availability of water. As shown in the fig one, on average 49% of the children are participating in child labor who have water access. On the other hand, about 55% of Afghani Children are working who have no access to clean drinking water**.** Similarly, the incidence of child labor among afghan refugees is more when they have no access to Gas connection as compare to the refugees who have Gas connection. In fact, the figure shows that on average 47% of children are working as child labor among household with Gas availability. On the other hand, about 26% of children among household who have no Gas Connection are participating in child labor.

5.4.2 Child Labor with regards to Identity, Land ownership and No-Rooms.



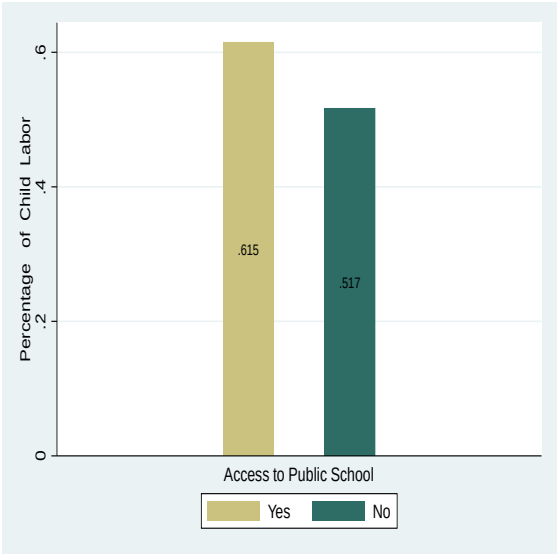


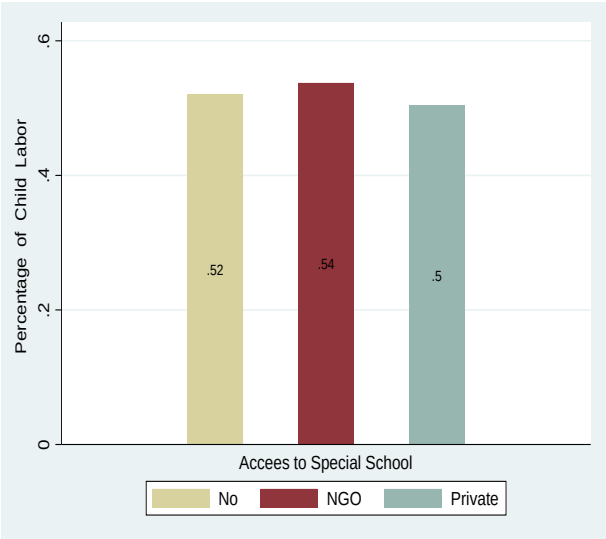


As large number of Afghan refugees have no identity (have no majar card) because they are not registered by the UNHCR or they crossed border illegally. Indeed, lack of identity have close link with child education as most of the schools or institution require some documentation. And, those with no identity of record have less probability to be a part of institution. Therefore, the child labor has some link with identity. The graph revels that the children with no identity have more chance of being engage in child labor. In fact, 56 per cent school age children are participating in child labor with no identity. On the other hand, 51 per cent of children with possession of Afghan Card are engage in child labor.

Additionally, we have linked child labor with land ownership and No of room. As shown in the figure the incidence of child labor is high among children who are landless (have no land ownership) and compared to the children who possess land. Indeed, the 47% of the children who possess land are participating in child labor. Comparatively, on average 56% of the children are working as child labor, who have no land ownership.

5.4.3 Child Labor and Access to Public School and Special School



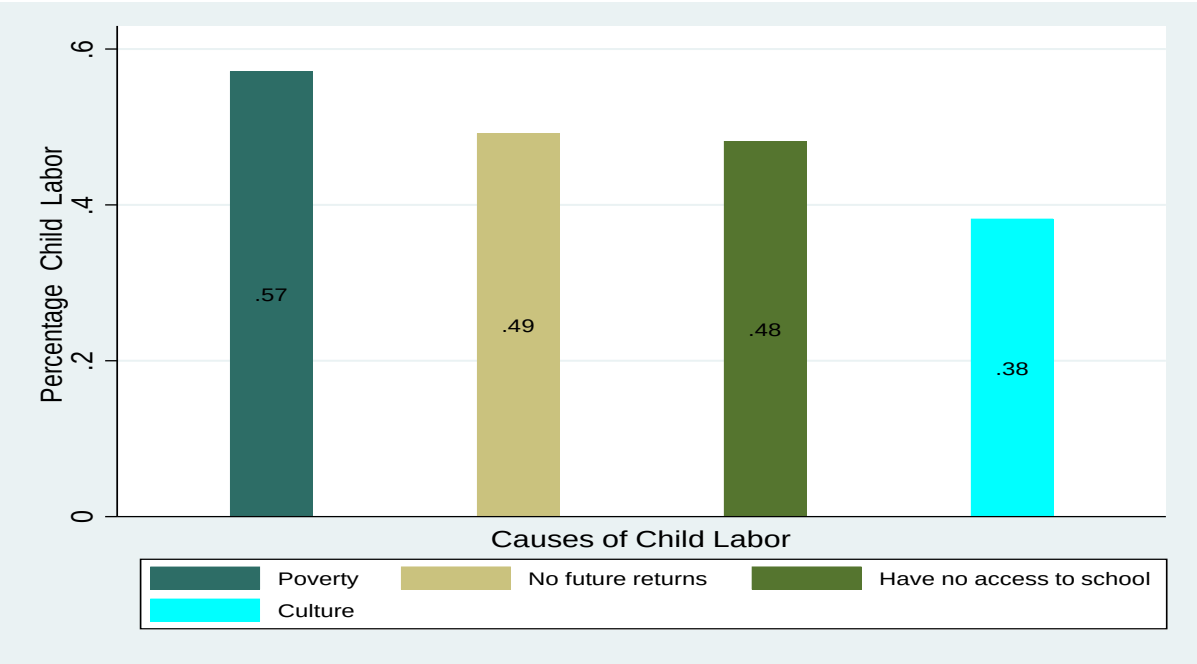


The Above graphs indicates the incidence of child labor among Afghan Refugees with respect to Child Access to Public School and Afghan Special School. As shown in the graph on average about 62% of the children are working as child labor who have access to Public School. On the other hand, the percentage of child labor is less (About 52%) among the children who have no access to public school.

Moreover, According, to the survey, this study has found three responses from the respondents. Either they (Afghan Refugees) have no access to special school or they have access to special school run by the NGOs or privately operating in the region. As shown in the graph, on average 52% of the children are participating in child labor who have no access to special school. And, percentage of child labor who have access to special school run by the NGOs is 54%. Moreover, 50% of the children are participating in child labor who have access to Afghan Special School run by the private bodies.

Likewise, the last graph indicates the association between child labor and the socioeconomic variable “No of Rooms”. As shown in the figure on the vertical axis we have plotted the percentage of child labor and on the horizontal axis the study has plotted five categories of “No of Room”. Moreover, the cross analysis shows that on average 43% of the children are working among household who have 3-4 Rooms in the house. Indeed, the incidence of child labor is lowest among Afghan Refugees with 3-4 rooms in the house. On the other hand, on average more than 57 of the children are working as child labor who have more than 8 rooms in the home. And, on average 55. % of children are engaged in child labor among afghan refugees who have 1-2 Rooms and 3-4 Rooms in the house. And, 51% of the children are working among household who have 7-8 rooms in the house. In fact, the results are consistent with the findings of variable “Household Size” used in the study

5.4.4 Child Labor with respect to Parents Perception



Finally, we linked of child labor with causes reported by the parents during survey. In fact, the respondents have reported four main reasons of child labor. The reason include poverty, no future returns, have no access to (public/ special) school. No doubt, majority of Afghan refugees are trip in poverty. Moreover, they have no future return from education because they have no access to formal sector for job. According to this study less than one percent of Afghan refugees have access to formal sector for job. Furthermore, 88 per cent of Afghan have no access to public school and more than 40 per cent of refugees have no access to special schools. The finding indicates that the percentage of child labor is highest among those household who have reported poverty as main reason behind child labor. In fact, 57 per cent of school age children are among household who have reported poverty as dominant reason of child labor. And, 38 per cent of children are participating as child labor who have reported culture as primary reason of child labor. Moreover, around 48.5 per cent of school age children are working as child labor in household who have cited no future returns and no availability of school. Indeed, all the four reason have primary role in determining child labor among Afghan refugees.

Child labor	Odd Ratios	coefficients	Std.Err	z	P>/z/

6 The Logistic Regression Outcomes

6.1 Child Labor and Social Welfare Indicators

(Table 5.1)

Clean Drinking water	1.05	0.472	.5109572	0.10	0.923
Gas Connection	1.91	.643	.7088362	1.73	0.084*
Afghan Citizen Card	1.20	.184	.3919532	0.57	0.571
Public School	.434	-.834	.2717297	-1.33	0.183
Special School					
NGO	4.61	1.52	2.53	2.78	0.005***
Private	.934	-.068	.530	-0.12	0.904
Land Ownership	.843	-.170	.367	-0.39	0.695
No Rooms					
3-4	.9230	-.0800	.300	-0.25	0.806
6-6	.478	-.738	.236	-1.49	0.136
7-8	.329	-1.113	.299	-1.22	0.221
Above 8	.927	-0.762	.921	-0.08	0.939
Main Source of Water					
Hand Pump	3.41	1.227	3.47	1.21	0.23
Tube Well	3.75	1.320	2.93	1.69	0.09
Open Well	4.67	1.541	3.97	1.81	0.07*
Tanker	5.63	1.728	5.00	1.94	0.05*
Cart (Rahri)	1.84	.609	1.18	0.95	0.34*
NGO's Presence	.188	-1.670	.105	-2.97	0.003***
Basic Health Unit	2.1	.792	1.14	1.53	0.126
Poverty	4.31	1.461	3.47	1.81	0.070*
No Future Returns	4.43	1.489	3.71	1.78	0.076*
No Access to School	4.74	1.556	4.08	1.81	0.071*

Table 5.1 shows the logistic regression analysis of child labor among Afghan refugees with respect to Social Welfare Indicators. The variable "Access to clean Drinking Water" shows the availability of water in home. The regression however, shows that probability of child labor increase if the household have no access to clean drinking water. however, the variable has insignificant impact on child labor among afghan refugees. Moreover, the children are more likely to engage in child labor if the household head have no access to "Gas connection" and statistically significant. On the other hand, the children are less likely if they have Afghan card and access to public school, but statistically in significant.

For the variable "Special School" there are three categories "No access to Special School", "Have Access, run by NGO's" and "Private". The base category is "no access to special school". The results however, shows that the probability of child labor is high if they have access to NGO operated school. And, statistically significant at 1% of confidence intervals. Moreover,

Afghan children are less likely to participate in child labor if they have land ownership and more no of rooms. However, the results are statistically insignificant. Furthermore, the odd ratios suggest that the Afghan Children are more likely to participate in child labor if household main source of drinking water is Open Well, Tankker and Cart (Rahri) and have significant impacts on child labor among Afghan refugees.

Finally, this study has included the household head perceptions about causes of child labor among afghan refugees. they reported for major reasons behind child labor among afghan refugees. including, Cultural, Poverty, No future returns and no access to school. Using Culture as base category the results shows that the probability of child labor is high, if the household head perceives poverty, no returns on education and no access to school. In fact, all the reason has statistically positive impact on child labor in context of Afghan refugees.

6.2 Child Labor with respect to Child, Household and Household Head Characteristics

Child Labor	Odd Ratio	Coefficients	Std.Err	Z	P>/z/
Child Age (In Years)					
7-8	3.510	1.256	1.326	3.32	0.001***
9-10	16.63	2.811	6.603	7.08	0.000***
11-12	45.33	3.814	19.794	8.73	0.000***
Above 12 Years	108.4	4.685	52.01	9.75	0.000***
Gender	1.622	.485	.3965	1.98	0.048**
Child Education					
Primary	1.005	.005	.3102	0.02	0.987
Other	1.000	.0001	.3547	0.00	0.998
Higher	3.845	1.347	4.443	1.17	0.244
Ethnicity					
Pasthoon	.5779	-.548	.4643	-0.68	0.495
Baloch	1.468	.384	1.014	0.56	0.578
Tajik	1.742	.555	1.425	0.68	0.498
Uzbek	8.389	2.127	7.183	2.48	0.013*
Household Size					
Medium	1.129	.122	.4105	0.33	0.738
Large	1.053	.052	.5284	0.10	0.617
Very Large	.5201	-.652	.6890	-0.49	0.622
Locale					
Quetta	.1860	-1.682	.1727	-1.81	0.070*

Pishin	.1368	-1.989	.1146	-2.37	0.018**
Monthly Income					
21k-40k	.6318	-.459	.2337	-1.24	0.215
41k-60k	.725	-.321	.3576	-0.65	0.515
Above 60k	1.003	.004	.5842	0.01	0.995
Household Head Literacy	.484	-.724	.160	-2.19	0.029**
Head Occupation					
Transportation	.867	-.142	.529	-0.23	0.816
Daily Wage	.472	-.751	.264	-1.34	0.179
Shopkeeper	.781	-.247	.447	-0.43	0.666
Street Wander	.516	-.6620	.333	-1.02	0.306
Employ	.550	-.597	.371	-0.89	0.376

The outcomes of logistic regression for Child, Household and Household Head characteristics are in the table 1.3. The table consist of dependent variable "Child Labor" and explanatory variables used in the study. And, the regression Odd ratios, coefficients, standard error, z score and p-value. In fact, we have explained the findings using odd ratios.

As shown in the table, the explanatory variable „Child Age" of all categories have positive impact on child labor. the odd ratio indicats that the older children are more likely to participate in child labor. Indeed, the variable is significant at 1% of the confidence intervals for all categories. The findings are in line with the findings of (Lodhi et al., 2011) , (Grootaert, 1998). The probability of child labor with child age is increases because the capacity of child to perform work increase with age. However, the impacts of age are country specific (Grootaert, 1998) but, in context of Afghan refugees the probability of child work increases with the age of children, keeping other variables fixed.

many studies have highlighted the gender discrimination (Canagarajah and Nielsen, 2001), (Lodhi et al., 2011) (Petrakis & Stamatakis, 2002). similarly, in case of Afghan refugee's male children are more likely to be engage in child labor as compared to the girls. And, the finding is significant at 5% confidence intervals. Another, characteristic of the children "Ethnicity" show the ethnicity of the children. the base category used in the analysis is "Mughals" against other ethnicities of Afghan refugees. the odd ratio indicates that pasthuns are less likely to participate in child labor, but the probability of child labor increases if the children are from "Baloch", Tajik and Uzbek communities of Afghan refugees. however, the results are statistically significant for Uzbek children. additionally, for the locale the base category is District Lorlahi against two districts such as Quetta and Pishin. However, The Odd ratios for the District Quetta and Pishin revels that, the children in District Quetta and Pishin are less likely to be in Child labor. and, statistically significant. Finally, the variable "Household Head Literacy" has significant impact on child labor. in fact, the odd ratio reflects that the children are less likely to be in child labor if the head of household is literate.

7 Conclusion and Policy Recommendations

The three major factors of child labor (child, household head and household) and social welfare indicators are examined in this study. The findings of the study indicate that majority (53%) of the Afghan Refugees children are working household chores activities due to low standards of living. And, about 12% of children work in market for earnings owing to poverty. The children characteristics shows that the incidence of child labor is positively associated with Child Age, and boys are more likely to participate in child labor. education has insignificant impact on child labor. however, the ethnicity shows that children are more likely to engage in child labor if the ethnicity is Uzbeks. Among household indicators only locale has statistically negative impact on probability of child labor. indeed, the study suggest that children are less likely to be in child labor, if locale is district Pishin and Quetta. The study further indicates children are less likely to be in child labor if the household head is literate among Afghan refugees.

Among the social indicators, the variables indicate the Afghan children are more likely to be in child labor if the household have no access to clean drinking water, gas connection, and Afghan citizen cards (Majar Card). And, children are less likely to be in child labor if they have access to Public School. On the other hand, children are lees likely to engage in child labor if they have access to Special School run by NGO's. because they charge 50% of the charges and provide outdated knowledge, which discourage the household to send their children to school. However, children are less likely to be in child labor in the areas where the NGOs are functional, and have significant impact on child labor among Afghan refugees. Finally, this study suggests positive impacts of poverty, low return to education and lack of schools on child labor in context of Afghan refugees. All, in all these social indicators has significant role in determining the likelihood of child labor along with children personal, household and household head characteristics.

7.1 Policy Recommendations

Based on the opinion of key informants and the findings of the study, to root out the child labor among Afghan refugees the following measures should be taken

I. As in Pakistan the child labor survey was conducted in 1996, and the Afghan refugees were excluded and the data collection which is in process for child labor is also ignoring Afghan child. In fact, the policy makers can't formulate any effective policy until and unless they have data or base., the government should collect the data at least after every five years. Therefore, they should speed up the data collection process. And the process should be inclusive rather than exclusive.

II. we need to strengthen the institutions in Pakistan. and, we need to provide some incentives to enroll the children in school.

III. It's the parent of the children who make decision of child labor supply, moreover, we need to support the parents financially instead of children (in Pakistan the NGO's are supporting children in form of technical education or training) thus, if the parents are supported financially they will no send children to work.

IV. Complete ban on child labor has more negative repercussions than the positive outcomes. As this act further push to the poverty trap. Therefore, instead of complete ban on child labor the government or key stake holders should introduce the poverty alleviation program.

V. The Afghan Refugees Identity in context of Pakistan is ambiguous. This identity crisis leaded the Afghan refugees to face many issues such as they find it difficult to get admission or get part in the government social net programs. Moreover, in presence of identity crisis the they become dependent on their families which are already on move, thus the government should reconsider the citizenship act

of 1951about the Afghan Identity. and, they should provide citizenship of Pakistan. indeed, they deserve it.

VI. In Pakistan the Minimum wage is not implemented. In the context of Afghan refugees, they even get less than minimum wage. Therefore, the government need to increase the minimum wage level and should implement the minimum wage in the market. This will make the household well off which in the tern results in less child labor supply.

VII. Pakistan in neither party to 1951 convention related to the status of refugees nor to its protocol of 1967. This leads to deprive the refugees from the rights provided by the UN Convention on the Rights of the child. Thus based on the huge population of the refugees in Pakistan the government should become a party to 1951 convention on the status of refugees.

VIII. Moreover, there is no official refugees law in Pakistan. this legal gape is important link with the persistence of child labor. Therefore, law makers should formulate the refugees law in Pakistan.

IX. The syllabus in the Afghan special school is different from the main stream syllabus, and non-recognized which also encourage the child labor among Afghan refugees. thus, there should be the common syllabus as we follow in public schools.

X. The key stake holder of refugees in Pakistan should make the refugees aware of the importance of the education.so they will send children to school rather than to work. Indeed, education is the key to realization of those rights.

XI. The NGO's operated school charges 50% of the fee from the children which discourage the parents to send their children to school. Therefore, the NGO's or Government should provide free education to these marginalized group.

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