Determinants of Child Schooling, Work and Idleness in Rural areas of Pakistan

Supervised by:

Dr. Muhammad Jahangir khan

Submitted by:

Saima Nazeer

24/MPhil-DS/PIDE/2014

Pakistan Institute of Development Economics Islamabad

CERTIFICATE

This is to certify that this thesis entitled: *"Determinants of Child Schooling, Work and Idleness in Rural Areas of Pakistan"* submitted by Saima Nazeer is accepted in its present form by the Department of Development Studies, Pakistan Institute of Development Economics (PIDE), Islamabad as satisfying the requirements for partial fulfillment of the degree in Master of Philosophy in Development Studies.

Supervisor:

Dr. Muhammad Jehangir Khan
Assistant Professor
Pakistan Institute of Development Economics
Islamabad

External Examiner:

Dr. Anwar Shah
Assistant Professor
School of Economics
Quaid-i-Azam University
Islamabad

Head,
Department of Development Studies:

Dr. Zulfiqar Ali
Assistant Professor
Pakistan Institute of Development Economics
Islamabad

Acknowledgment

First and foremost, I would like to thank Allah for giving me strength and helped me in completing difficult tasks.

Secondly, I would like to express my sincere thanks to my supervisor, Dr Mohammad Jahangir khan, for their continued support and advice throughout my thesis, for their patience, motivation and immense knowledge. His guidance helped me in all the time of research and writing of thesis. My sincere thanks also go to sir Kamran for helping me in data merging and all the quantitative problems that I had during my research.

Lastly I would like to thanks my beloved sisters and parents for their love and support, this task could not have been completed without their prayers.

Abstract

Education is the basic need that should be provided to all children, but unfortunately Pakistan is paralyzed with high dropout from school or lower enrolment. Especially, in rural areas, the child schooling ratio is very low. Thirdly, there is another activity that indicates that neither child goes to school nor for work, that's called idleness. This study analyzes main determinants of children activities regarding schooling, working, combine school and work and idleness in rural areas of Pakistan for the age cohort (5-15) years. I have used Pakistan rural household panel survey (PRHPS), 2012. The main objective of the study is to evaluate the relative influence of children characteristics, head characteristics, family characteristics and community characteristics in household decision making regarding children activity. In addition, presenting the relationships between these explanatory variables and children activities, multinomial logit estimates are estimated. The results illustrated that head's age, child education level and age, and parental education have positive and significant effects on children schooling. While an increase in family size and single parent households have negative impacts on children education and it impacts positively on children working. Child schooling is decreasing in land holdings; only for boys. Additionally, child disability and illness lead to increase the number of idle children. Based on this, it is recommended that there is a need of formulating policies to reduce child labor. And access to schools, quality of school should be provided to the rural households. Thirdly, the access to microfinance banks is needed to be established for the provision of credit. Lastly, to overcome the problem of idleness, health facilities should be provided to all rural households.

Table of Contents

List of Tables

List of Figures:

List of abbreviations

ILO	International Labour Organization
IFPRI	International Food Policy Research Institute
IDS	Innovative Development strategies

Chapter 1

1.1 Introduction

Children are an asset of our nation and they should be provided all the sufficient opportunities and the basic facilities for their physical, mental and social growth. As childhood is the constructive phase of human life so they should not be force to work that is dangerous for their mental and physical growth (Ali et al., 2012).

Education is the basic human right of every child (Chamarbhagwala & Techernis, 2010). Educational institutions, investments in education, equal access to education and quality of education plays the imperative role in the alleviation of poverty (Chaudhry & Rahman, 2009). Pakistan today is paralyzed with the low literacy rate that is only 58 percent and the school's enrolment in the primary schools is 56 percent (PSLM, 2011). Most of the children are dropped out with the increase in child level of education. (Ahmed, 2012) reported that child dropout rate was 38.5 percent in Pakistan. It shows the alarming situation, because the opportunity cost of education in terms of child paid work is getting high (Qureshi et al., 2014).

Index (2013) reported that Pakistan is among top 3 countries in the world regarding child labour. Parents force their children to work because they are afraid that after they pass their school, they will not get employment. Therefore, they are deprived from education due to the pressure of financially supporting their families (Shafqat, 2014)

As Per ILO (1998) , children who are involved in economic activities must put strong force and strength while doing work that is not good for their health and it puts negative impact on schooling. (Latif, 2011) described that 17.6 percent of Pakistani children are going for the work to financially support their families.

Moreover, there is another activity other than child working and schooling that is idleness. This activity differs from the other activities of the children like those who work, from the category of the children who both work and study, and those children who only go to school. There are also many reasons of the children idleness. According to Ranjan (2004), lack of school facilities can be the reason of idleness. Similarly, Biggeri et al. (2003) found that high fees of schools, chronic illness or disability, low wages of the work and because children (especially girls) are needed at home for household's chores can be the reason behind children remaining idle.

Research Gap

An enormous amount of studies has examined the factors of child schooling and child labour. Many authors have examined the parents' decisions whether to send their children to school or send them to work. With respect to previous theoretical and empirical research, there are few studies, from Pakistan, which addressed a non-economic determinant of children's activities, which is referred as idleness. Secondly, previous studies neglected the role of children health that is major determinant for the parents' decision making about their children. Because children with poor health, chronic illness cannot attain education and they can't work even in the same way as the healthy children especially in rural areas of Pakistan. This research differs from the previous literature by allowing for the factors of child labour, schooling and idleness decision and it focused on the children health that cause children remaining idle due to insufficient and poor health facilities. Our study uses data from recently collected nationally representative survey, Pakistan Rural Household Panel Survey (PRHPS) 2012, which covers rural areas of three provinces in Pakistan that are Punjab, Sindh and KPK. Multinomial logit analysis technique is used to analyse the determinants of child activities.

1.2 Statement of the Problem

In Pakistan, the ineffective education system has led to an increase in child labour. Keeping in view the problem of unsatisfactory education, this piece of research will find out the main determinants of child activities in Pakistan. For this, the study will focus on the work, idleness and education of children and the trade-off between these three activities. Children might be enrolled in school at some level but cannot complete their education due to financial problems or because of the lack of the ability. In developing countries like in Pakistan, most of the people are living below the poverty line so they want all members of the households to participate in the economic activities to meet their household expenditures. Moreover, due to credit constraints and low incomes, parents are reluctant to send their children to schools that cause prolonged poverty into the next generation.

Secondly another main problem is child idleness. It is regarded as the number of children who neither work nor go to school. The reason of the idleness can be lack of access to school or quality school, and less child ability. Parents sometimes don't want their children to go to schools due to the poor quality of schools, scarcity of the schools, transport problems, poor infrastructure, social norms and increasing cost of education. Secondly, another reason of children remaining idle is poor health of children. In rural areas of Pakistan, people are deprived from basic health facilities and scarcity of hospitals leads to increase health issues among children and elders.

1.3 Significance of the study

Low enrolments and high dropout from school are the basic problem of Pakistan education system. The main reasons of this problem are poverty, large family size and parents' low education that compel the children to participate in the economic activities. Similarly, there are large proportion of the children who neither work nor go to school. This is the worst situation for

individual wellbeing as well as country's development and there is a need to investigate the factors which affect parental decision about their children's activities. This research will understand main factors and the parental decision that affect the child activities like schooling, work and idleness. To present the relationship between these activities, I will use multinomial logit analysis in the framework of joint probability distribution.

1.4 Research questions

Q1: What are the main determinants of child activities (work, schooling and idleness) in Pakistan?

1.6 Objective:

- To investigate the main determinants of parental decision about child labour, schooling and idleness in Pakistan.
- To find out regional and gender disparity in child activities.

1.7 Organization of Study

The reminder of the study is as follows: Chapter 2 represents literature review about the time allocation of children, work schooling and idleness. Chapter 3 includes data and methodology. Chapter 4 includes empirical results and discussion. And Chapter 5 includes conclusion and policy implications.

Chapter 2

Literature Review

2.1 Introduction

Child is the future of the country that can be translated into much better scenario for the human capital formation and development of a country. But in the developing countries, child is getting deprived from the basic facilities like education and health. There is a trade-off between child schooling and work. As in poor countries, most of the people are living below the subsistence level, so they want their children to work rather than going to school. Therefore, most of the children don't get education or they are dropped out. Chaudhry (2016) reported that 62 percent children get enrolled in schools but only 20 percent children attain higher education. Moreover, 47 percent children between the ages of 5 to 15 are out of school and 18 million children have never attended school. Similarly, there exists gender disparity in school enrolments; boys' rate of going to school is higher as compared to girls.

There are also large number of children who neither work nor go to school that are referred as idleness. Numerous factors have been viewed important for parental child activity decision. However, the importance of one factor than the other (at a time) varies from country to country as well as within regions in a country. The focus of this study is to find out the main determinants of the three activities of the children in Pakistan. Some of these factors have been reviewed as follows.

2.2 Poverty

Siddiqi and Patrinos (1995) explained that child labour is the extensive problem throughout the world especially in the developing countries. They are the matter of extreme exploitation. The problem of child labour has spread all over the world that has the strong effect on children as well

as the whole society in less developing countries, children must compromise their studying and their health to support the family because of the poor financial conditions of the households.

Ali et al. (2012) examined the determinants of child working on automobiles workshops in Sargodha city and implied that the children are compel to work due to poverty, illiteracy, unemployment and parent's low education. He analysed that there is the positive relation between adult literacy and child schooling and the inverse relation between the income of the family and working of the children.

Malik et al. (2012) compared the determinants of child labour in Sukkur and Multan and analysed that ratio of child labour in Multan is higher as compared to Sukkur. Main factor of the working children is the parent's job uncertainty. The problem of child labour can be solved by making efficient job markets, quality of education in schools and providing credit facility to poor families.

Similarly, certain social and economic factors exist that lead to necessary choices between schools and working of the children. Jensen and Nielsen (1997) found poverty as major factor that compels the children to work rather than going to school. Similarly, Baland and Robinson (2000) explained that there is disparity between the classes that is rich and poor. Rich families have enough income to meet all expenditures of household so they do not send their children to work, whereas poor families must send them for work. So, the main factor of the working children is poverty.

Blunch and Verner (2001) found positive relation between poverty and child labour in Ghana. He explained that gender gap is strongly linked to child working, since girls from urban and rural areas are more likely to engage in harmful child labour as compared to boys.

Access to productive assets is the effective way to reduce poverty because it contributes to the increase household income and so decreases the circumstance of child labour. Cockburn (2001) explained that rural Ethiopian families increase their access to the possessions and they use these

assets to provide education to their children. He found the tight relationship between child schooling and children participation in economic activities. Poverty alleviation can be reduced by improving access to physical assets like bulls, ploughs, oxen, which are the main sources of water and land fertility that increase household income without encouraging child work.

Ray (2002) investigates the factors of child schooling and child work in the countries Nepal and Pakistan. To examine the level of poverty, writer distinguished between household level and cluster level poverty. He provided the evidence of disparity between child labour and child schooling. By examining the impact of borrowing on child labour and child schooling and writer analysed that children who work so many hours have the detrimental effect on their schooling. Further the writer observed that by increasing the level of education of adults in the families and increasing public awareness, lunchtime school meals and enrolment subsidy can have the positive impact on the child schooling and it can help to reduce the labour hours of the children.

Ravallion and Wodon (2000) studied the effects of providing financial support on the child working in Bangladesh. The authors analysed that the parents who are living the life of extreme poverty want to send their children to work to earn extra money. Therefore, their children work at the expense of schooling and it's the major factor of poverty that can be reduced by providing financial support to the parents. According to Vasquez and Bohara (2010), children working reduces the time available for schooling and quality of schooling, as the schooling of the children depends upon the poverty reduction, lack of diseases and fertility choices that is why working of the child has the negative effect on the wellbeing of the children

2.3- Head of the Household Age and Gender

Head of the households' characteristics is critical in determining child activities. Firstly, the stage in the life cycle of head of the household plays important role in decision making about children

activities. Khan and Ali (2005) and Burki et al. (1998) have same opinion that if the head of the household is older, children are more likely to be in school because of the economies of scale of education in household. However, Bhalotra and Heady (2003) have contradictory point of view that, age of the household head have weaker effects on children activities.

Similarly, literature shows the uncertain effects of the head gender of the household on child decision making. In developing areas, children who belong to the households with female headship have to work because of the dependency ratios and restrictions on the work of females. Ray (2000) examined children activities in Bolivia, and Psacharopoulos (1997) investigated the children activities in Peru and Pakistan. Both scholars found that female head are much more dependent on children's education as compared to male head so the chances of child going for work increases. However, Bammeke (2013) contrasting opinion that children who belongs to households from female headship are more focused about their children's education and there may be less chances of children going for work. This may be possible because households with female headships, there are more than one earning members. That is why, they prefer their children to study rather than involving in other activities (Burki & Shahnaz, 2001).

2.4 Parental Education

Another factor that affects the parent's decision making to send their children to work or for attaining education to school is the parental education. Cigno and Rosati (2000) find that in rural India mothers who studied not more than primary level of education are broadly have more chances to be in full-time work, and having a mother who has acquired middle school education reduces the probability of merging school and work, while the effect of father's education is not significant. Ravallion and Wodon (2000) illustrated that mother education's effect on child activities is stronger than that of father's education.

Patrinos and Psacharopoulos (1997) find that reduction in the probability of combining school and work in comparison with probability of full-time study can be performed by years of father's education in Peru and by years of mother's education in Paraguay. Similarly, Sasaki and Temesgen (1999) determines that if parents are educated at the college level, then it will lead to reduction in the probability of combining school and work as compared with full-time study. However, fathers who are less educated and not educated, they prefer to send their children for work rather investing money on their education (Durrant & Arif, 1998).

Khanam (2008) examined the factors of child labour and school attendance in Bangladesh. He explained that the working of the children depends upon the father's education and the occupation of the father. Household head whose occupation is employed in vulnerable, like the day labour and wage labour, their children are more expected to work full time or to work and study combined. Moreover, writer analysed that girls have the more chances to combine working and school as compared to the boys in Bangladesh.

2.5 Family Size

The larger family size is also responsible for the increasing child labour in poor countries. Ali (2010) examined the determinant of child labour by interviewing the people of district Swabi. He analysed that the main determinant of child labour is the growing population. Because of the higher population, the land is divided into so many pieces for the use of other resources that cause the poverty and deficiency. Thus, the poor households want to have more children to earn money for meeting the expenditures of household. Moreover, writer explained that the reward of the children is very low and the employees exploit them and treat them harshly so they feel deprived, disappointed as compared to the other labours.

Sahu (2013) discussed the main factors of child labour in the Cuttack city of Odisha. Writer explained that children who participate in economic activities for so many hours belong to poor family background. Most of these families are involved in bad activities like drinking alcohol. They don't have any concern about children's education and they only want each member of the household to be involved in economic activities.

Ray (2000) in Peru and Emerson and Souza (2008) in Brazil found positive effect of the large number of children on the chance of child labour but negative effect on the probability of school participation analysed that family size is the non-economic factor which affect the working of the children

Siddiqi (2013) attempted to focus on the urban child labour. He examined that household poverty and household demography are the most serious and the main factors of child labour in Lahore. The economic and the social status of the household decided the fate of the children that they should work or not. Writer described that in the case of Lahore, people that are beneath the poverty line are around to 40 percent and with a very high rate of population that compel their children to participate in the economic activities for the survival and emit the family members from starvation.

Fan (2004) extended Becker and Lewis model by showing the relationship between parents' utility function and quality and quantity of children. Writer found the positive relation between fertility and income, after excluding child labour the children quantity can be taken as the normal good as it increases with the increase in parental income. However, after considering child working, there exists the negative relation between children quantity and parental income, because they will be more focused on better educational attainment of the children, so fertility will be declined with the increase in the wages of the working children. Furthermore, writer found that with the increase in the wage rate of children who participate in economic activities, there are more chances of raising

fertility, because parents to have large number of children who can help them to meet household expenditures.

Saad-Lessler (2010) concluded that the high population rate in the rural areas will increase the average child labour rate. The writer gave the solution that child labour problem can be combated by the increase in life expectancy, increasing the GDP growth rate and increasing the spending in education.

2.6 Land size, Household Composition

Land size is the major factor to make decision about sending children to schools or for the work. Bhalotra and Heady (2003) examined the children schooling and work conditions in Ghana and Pakistan and found that children with larger land size are more likely to work in farms and less likely to be in school as compared to the children with small land size. Usually, boys are more likely to inherent land as compared to girls, however, writer observed that in Ghana and Pakistan, girls' participation in farms size is larger as compared to boys and parents invest more money on boys' education because they expect more from boys to support them in old age. Rosati and Tzannatos (2006) found that household's cultivable land leads to increase the probability that children will (study and work combined).

A significant factor that should be considered is the age and gender structure of the household and whether the parents are alive or present in the household because the absence of the household would create economic hardships and increase in child labour (Rickey, 2009).

.

2.7 Child Gender and Child Age

Khan (2003) in Pakistan analysed that boys have more chances to combine school and work and schooling. Similarly, Nielsen (2001) in Zambia found that boys have more chances to study as compared to girl but there is no gender disparity in case of work decision.

The child age matters in the decision to allow children for going to school or for the work. Maitra (2000) found that in Pakistan age determines that either child goes to school only or work only. So, age of the child has the positive effect on child work decision: the older the age of a child have more chances to go for the work. Similarly Canagarajah and Coulombe (1997) examined the factors of child labour and child schooling in Ghanaian children between the age of 7 and 14 and found that both activities rise with the increase in age.

2.8 Idleness

Moreover Deb and Rosati (2002) and Rosati and Tzannatos (2002) found that there are a large fraction number of children who neither work nor go to schools. This category of the children is referred as idleness. Bacolod and Ranjan (2008) explained that child ability and household wealth both decide the child working and schooling decision. In the households, there exists the ability differences among the siblings, as children who have the less ability have more chances to stay idle rather than sending them to schools as compared to his/ her siblings who has the more ability to be in full time school.

Chamarbagwala and Tchernis (2010) discussed the child activities determinants in India and analysed that there are so many children who neither work nor go to school due the lack of access to the schools, higher cost of education and low returns to school, parents less awareness about the economic benefits of attaining education. Another category of the children in which they don't go

to school nor for paid work, parents engaged them in household chores like cleaning, cooking and for the care of their young siblings.

2.9 Credit, Health, Access to Schools

Banks measure the access to credit markets which have strong influence on incidence of child labour, schooling and idleness. Empirical studies provided mixed evidence on the impacts of credit. Hazarika and Sarangi (2008) in Malawi and Islam and Choe (2013) in rural Bangladesh found that access to micro credit increases the problem of child labour and it has the adverse effect on schooling of children. However, Dehejia and Gatti (2002) and Jacoby and Skoufias (1997) found the negative relation between child labour and access to credit.

Health is important indicator in determining children activities. Basu (1999) explained that cognitive development and abilities of children can be obtained by better subsistence and child health. However, poverty and nutritious problems have adversative effects on the abilities of children that can be reduced by investments in nutrition and health of poor households (Ranjhan, 2004). Wolfe (1985) analysed that school attendance is affected by health and nutritious problems, children disability and having handicapped siblings. Similarly Jamison (1986) estimated nutritional variables on child school performance in China. Writer observed that lower nutrition effect has adverse effect on school performance and children tend to be one grade further behind in rural areas as compared to urban areas. Thus, Malnutrition in China is sufficiently dominant to decelerate the school advancement of large number of children. Alderman et al. (2001) reported that child health and schooling both reflect the parental decision regarding human capital. And better nutrition helps to increase child schooling and reduce the substantial gender gaps in schooling.

Availability of schools also affects the children activities. Vuri (2008) discussed the effects of availability of primary and secondary schools on children's time allocation in Ghana and Guatemala and illustrated that in Ghana, the travel distance and availability of primary and secondary schools influence all children activities (work, schooling and household chores). However, in Guatemala, primary schools' availability has positive impacts on children attendance but no impact on other activities and secondary schools access reduce child working. Hazarika and Bedi (2003) found that an increasing cost of school in terms of direct cost and access to schools impacts positively on children tendency to work and influence negatively on children school attendance propensity. Sawada and Lokshin (1999) and Shah (1986) noted that female education is effected strongly by the availability or lack of access to school as compared to male education. They explained that parents will not allow girls to get education due to social norms and purdah and they will only allow them to go to school in case of separate schools for females.

Summary of Literature Review

Above discussion highlighted main factors that affect child working, schooling and idleness. There is tradeoff between these three activities. Child work is increasing in developing countries that have detrimental effect on children education. Most of the authors find poverty as the main reason behind children drop out from schools. As in rural areas, parents are less educated and because of the poor financial conditions they want their children to participate in economic activities for financial assistance. Secondly, from the literature above can be observed that there exists gender disparity among children, as parents expect from boys to earn for them in future so they focus on the education of boys as compared to girls. Increasing age of the children increases the chances of child work and children drop out form schools with the increase in age. Similarly, from the previous research it's found that the effects of large land holdings, credit constraints and parent

absentees, large family size seem to be negative on children schooling and labor ratio increase with the increase of these determinants. Furthermore, another activity of the children in which children neither work nor go to school is idleness. Pool of idle children is increasing in LDC's because of the children poor health, lack of access to schools, parents less awareness about the importance of child education, and less ability of the children. Very few studies highlighted the reasons and results of children staying idle so there is a need to conduct more research on it.

Chapter 3

Data and Methodology

3.1 Data

Objective of my thesis is to find out the main determinants of child activities; work, schooling and idleness in rural areas of Pakistan. To find out these determinants, data that I have used in the study has been taken from the survey named "Pakistan Rural Household Panel Survey in Pakistan,2012" administered by International food policy research institute (IFPRI) and International development strategies (IDS) during the period of 2014. It's the first round of panel survey that covers 2090 households of the 19 districts of three provinces, 1) Punjab, 2) Sindh and 3) Khyber Pakhtunkhwa. This data has collected extensive information from 2090 households that include 13378 members from three provinces. There is detailed information about individual and household characteristics that includes expenditures, income, employment, the education status of the children like enrolment, the current level of education and drop out and other demographic events. However, this study presents the data of the children aged 5-15 years living in the rural households. So, the sample size consists of 3896 children from 1447 households.

3.1.1 Gender vice completed years of education

Table 1 shows gender vice completed years of education of children from 5 to 15. The table figures were calculated from data (PRHPS) that shows gender wise completed years of education of children. It depicts that male completed years of education is higher as compared to female. There are 54.2 percent children, who completed Katchi Pacci class. About 35.6 percent children are those who completed primary education. Similarly, percentage of children who completed middle and Matric are 8.9. Moreover, only 1.2 percent children are those who completed matric and intermediate education.

Table 1: Gender vice Completed Years of Education (Percentage)

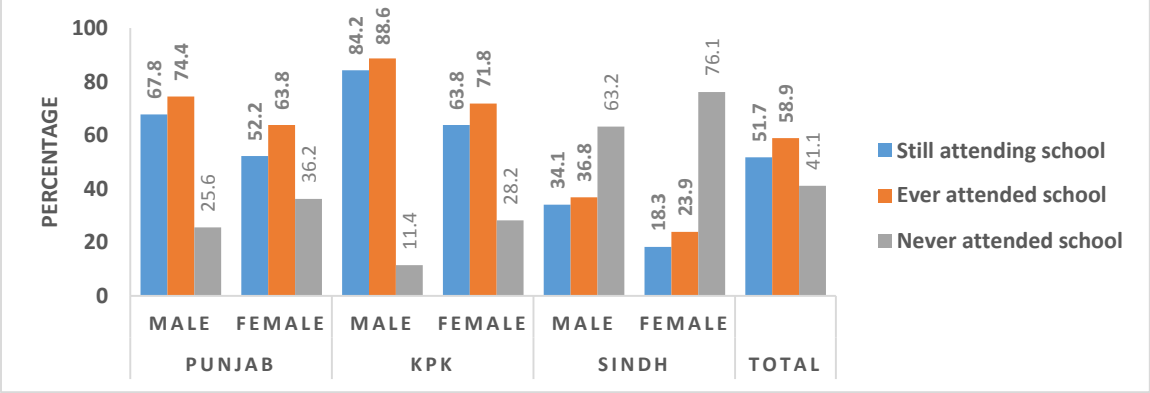
Highest class completed	Gender		
	Male	**female**	**All children**
Katchi/Pacci	45.2	63.5	54.2
Deeni madrassa	0.3	0.1	0.2
Primary	39.8	31.1	35.6
Middle	12.6	5.0	8.9
9 to 11	2.0	0.3	1.2
Total	100	100	100

Source: Calculation based on PRHPS (2012)

3.1.2 Children attendance by Gender and Province

In the same way, if we see children attendance by gender and provinces vice, data reveals that highest enrolment rate exists among male children in province KPK that is 84.2 percent. Overall, total enrolment rate of the children is 51.7 percent.

Figure 1: Child Attendance by Gender and Province



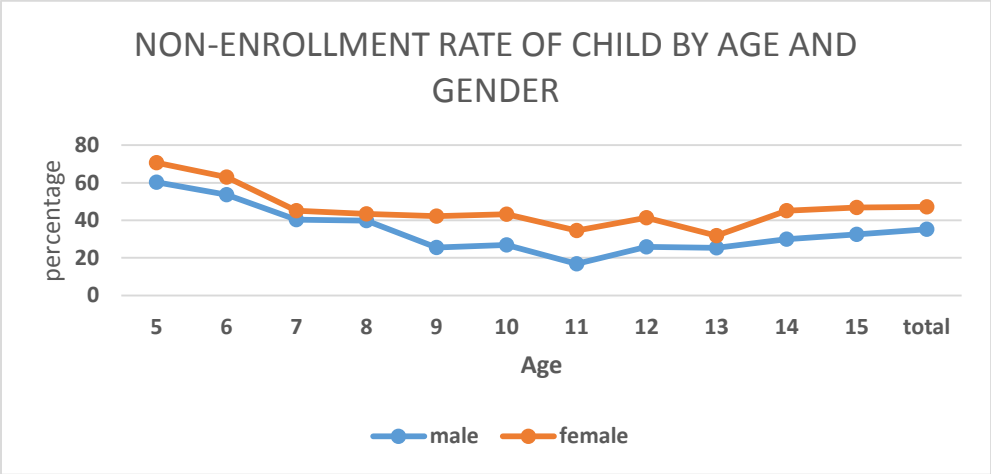
Source: Calculation based on PRHPS (2012)

Similarly, non-enrolment rate of female children is higher than males. Highest non-enrolment rate is in Sindh that is 76.1 percent of female children. Overall non-enrolment rate is 41.1 percent in all provinces.

3.1.3 Gender and Age Vice Children Non- Enrolment Rate

Figure 2 depicts age and gender variations in non-enrolment rates. It shows fluctuations in non-enrolment rate with the increase in the age of the children. Female children's non-enrolment rate is raising more as compared to the male children that is highest with 70.7 percent in the age of 5 after that it declined and raised again in the age of 10 years.

Figure 2: Age and Gender Wise Non-Enrolment Rate



Source: Calculation based on PRHPS (2012)

Similarly, 58.9 percent of children are those who attended school sometimes but dropped out due to various reasons. These reasons are given below.

Reasons behind Dropping out from School

PRHPS (2012) shows that there are so many reasons behind not attending school in these provinces. Table 2 shows the main reasons behind not being enrolled in schools and stop going to school. It can be seen from the table that overall 27 percent children are dropped out from school

because of the poverty. Moreover, 0.4 percent children dropped out from school due to family pressure. Similarly, there are other reasons behind children not being enrolled in school. These reasons are mentioned in the next page.

Table 2: Reasons of Children Drop out from Schools:

Reasons behind going out of school (5-15)	Frequency	Percent
Had completed available grades	262	6.7
Had to work	608	15.6
Not useful later in life	102	2.6
Too far	21	0.5
Too dangerous	4	0.1
Poor infrastructure quality	28	0.7
Poor teaching quality	25	0.6
Family pressure	17	0.4
Not interested	54	1.4
school was closed	493	12.7
Don't Know	1226	31.5
Poverty	1045	26.8
Due to illness	8	.2
Marriage	3	0.1
Total	3896	100.0

Source: Calculation based on PRHPS (2012)

3.2 Theoretical Framework

Households production model that is initiated by Becker (1965), DeTray (1973), Rozenwieg and Evenson (1977) will be adopted in this research as the theoretical framework. Motivated by Backer type household model, I will use the general utility maximizing framework to represent the choices of child schooling and other activities as a reduced form function of individual, family and community characteristics. According to Becker (1965), and Becker and Lewis (1973), the household is presumed to maximize utility in terms of the quantity and quality of children and the consumption of other household goods and services produced, and leisure. The household ith child activity ($W_{I)}$ is specified as:

$$W_i = w\ (X_i, X_h, X_c, v_i) \qquad (1)$$

In this equation (1), Xi is assumed as vector of child characteristic like child's age and gender, and X_h represents parents' characteristics for example parents' education, their occupation, X_c represents community level characteristics that may affect child activity like schooling attributes in the community and v_i represents the vector of the individual, household and community specific unnoticeable attributes that effect child activity. Equation (1) is the reduced form equation that contains only exogenous variables. There are three main activities, work school and idleness of the children but some children might combine school with work as shown in the diagram.

The diagram shows different child, family and community level characteristics that affect the child activities. Child characteristics that include gender, age, age square and level of

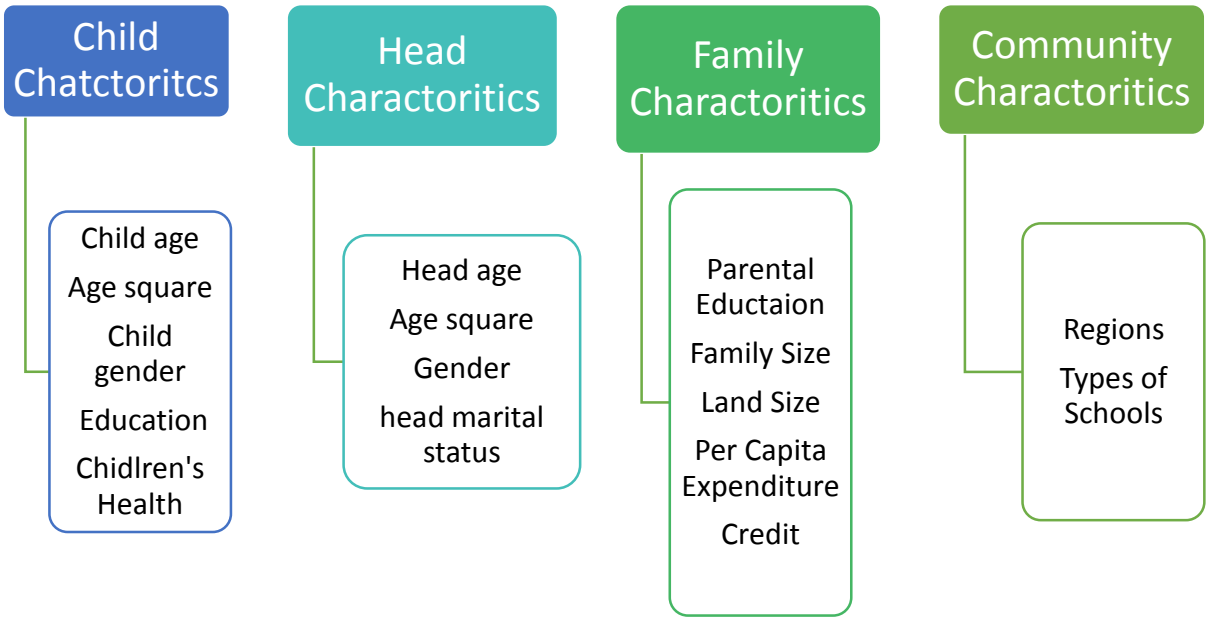


Figure 3: Theoretical Framework

education effect the parental decision to decide either children will go to school, will go for the work or they will stay idle. Furthermore, diagram is showing head age, age square and gender of the head of household. These are the important characteristics that impact strongly on children's time allocation.

Secondly the family characteristics like parental education, age, family size of the household, household expenditures, marital status are the main factors of child activities. Another main factor of child activities is community characteristics, like the region and the types of school may impact the parents to decide about their child activities. Credit availability impacts positively on children education and it declines work. Children chronic illness and disability have negative impacts on their schooling**.**

3.3 Econometrical Model

3.3.1 Measurement of Child Labour

For the classification of children activities and measuring child work, this study considered primary and secondary job and mutually exclusive categories of children. If the primary and secondary job of the child is "study" that indicates that children is a student that don't have any secondary profession. If child's primary and secondary job is work, it considers that children only work with no other secondary occupation. Another category that includes combine work and school is classified as "work and study". Other than all these activities there are so many children who neither work nor goes to school that is categorized as "idleness".

3.3.2 Child Activities by Provinces

Provinces vice children activities has been presented in table 3, that reveals highest child schooling is in province KPK that is 51 percent, in Punjab children schooling is 43 percent approximately and Sindh has lower schooling that is 20 percent. The other activities like working and idleness are in province are high in Sindh that is 17 percent and 47 percent respectively.

Table 3: Child Activities by Provinces (Percentage)

Child Activities		Schooling	Work only	Work and School	Idleness	Total
Province ID	**Punjab**	42.8	19.0	17.5	20.7	100.0
	Sindh	20.0	27.0	6.5	46.6	100.0
	KPK	51.5	9.0	23.2	16.4	100.0
Total		36.9	20.4	14.8	27.9	100.0

Source: Calculation based on PRHPS (2012)

Moreover, table 4 shows gender and age vice child activities. Female schooling is low with 29 percent as compared to male which is 44 percent. Similarly, idleness and working is higher is female children." Work and study" is higher among boys as compared to girls. It

Table 4: Child Activities by Age and Gender (Percentage)

Child Activities		Schooling	Work	Work and School	Idleness	Total
Gender	**Female**	29.4	27.6	14.2	28.8	100
	Male	44.0	13.5	15.4	27.0	100
Total		36.9	20.4	14.8	27.9	100
Age in years (5 to 15)	5	33.0	3.7	1.7	61.5	100
	6	37.6	8.8	3.8	49.8	100
	7	48.4	6.0	8.7	36.9	100
	8	45.8	9.1	11.5	33.7	100
	9	48.3	13.7	16.1	21.9	100
	10	45.2	15.4	16.5	22.9	100
	11	51.7	19.2	17.1	12.0	100
	12	33.1	29.1	22.8	15.0	100
	13	27.4	35.8	23.0	13.9	100
	14	19.7	41.3	26.6	12.4	100
	15	13.3	53.9	21.1	11.8	100
Total		36.9	20.4	14.8	27.9	100

Source: Calculation based on PRHPS (2012)

shows that in the early ages children is higher but after a certain age children are dropped out from schools due to participating in economic activities. “Working” activity is getting higher with an increase in child age. Furthermore, idleness is higher in early ages, but with the increase in ages its getting lower. Table 4 also shows that turning point starts at the age of 8 years from which child schooling is getting low and working is getting high.

To quantify the parent’s decision making about their children activities, multinomial logit model has been used. The dependent variable has been composed of four categories that are as follows.

3.4 Measurement of Child Activities

This research classifies the children activity into four main categories.

Study: Consist of the children who go to school only for attaining education.

Working: Children who participate in the economic activities

Work and School combine: Children who Study along with the Working.

Idleness: Children who neither work nor go to school.

3.4.1 Multinomial logit model

The multinomial logit model is used for this research to find out the determinants of "work only", "study only", "work and study combine" and "neither study nor work". Let Y_i referred as the polytomous variable with multiple unordered categories and j denotes the mutually exclusive categories with the probabilities P_{i1}, P_{i2}, P_{i3}..... P_{ij}.

So, we have four categories that are as follows:

J = 1: if the child goes to school only.

J = 2: if the child works only.

J =3: if child is doing combine work and school.

J = 4: if child neither goes for work nor goes to school.

These four categories are associated with the following probabilities.

$$P_r = (Y_i = 0/x_i) = P_{i0} = \frac{1}{\exp x_i'\beta_1 + \exp x_i'\beta_2 + \exp x_i'\beta_j} = \text{Probility of study}$$

$$P_r = (Y_i = 0/x_i) = P_{i1} = \frac{\exp x_i'\beta_1}{\exp x_i'\beta_1 + \exp x_i'\beta_2 + \exp x_i'\beta_j} = \text{Probility of work and study (combined)}$$

$$P_r = (Y_i = 0/x_i) = P_{i2} = \frac{\exp x_i'\beta_2}{\exp x_i'\beta_1 + \exp x_i'\beta_2 + \exp x_i'\beta_j} = \text{Probility of work only}$$

$P_r = (Y_i = 0/x_i) = P_{i3} = \frac{\exp x_i' \beta_3}{\exp x_i' \beta_1 + \exp x_i' \beta_2 + \exp x_i' \beta_j}$ = Probility of neither work nor goes to school

In these equations $\beta_1, \beta_2, \beta_3$ are the covariate effects of these four categories with the reference category j=0 where $\beta_0 = 0$.

So, the probability can be modelled for an outcome Y_i with j set as:

$P_r = (Y_i = j/x_i) = P_{ij} = \frac{\exp x_i' \beta_j}{1 + \sum_{i=1}^{j-1} \exp x_i' \beta_j}$ for j>0

And

$P_r = (Y_i = 0/x_i) = P_{i0} = \frac{1}{1 + \sum_{i=1}^{j-1} \exp x_i' \beta_j}$

Now we will estimate this model for the sample size n. All the n individuals fall into the j categories. We assume X_i as the vector of the explanatory variable which includes child household and community level characteristics.

3.4.2 Measuring Dependent Variables

Children can allocate their time in so many different activities. Using information provided by the PRHPS data, we make four categories of children that are as follows:

- Children who only goes to school
- Children who only work,
- Type of children who neither work nor goes to school,
- Children who work and study combined.

3.4.3 Measuring Independent Variables

There are so many social and economic factors that lead parents to decide that either their children will go to school, go for work, will study as well as work or children will neither work nor they will go to school. Basic aim of this study is to make parental decision about choosing one of these four categories. I have classified these factors that affect the child activities, which

are child characteristics, head characteristics, family characteristics and community characteristics. Detailed description of these characteristics is given below.

Table 5: Description of dependent and independent variable

Dependent variable:	
Pi1=child goes to school only.	1 if child goes to school and not to work, 0 otherwise.
Pi2= if child goes to school as well as work.	1 if child goes to school and for work, 0 otherwise.
Pi3= if child work only	1 if child does not go to school but to work, 0 otherwise.
Pi4= child neither goes to school nor for work.	1 if children nor go to school nor for work,0 otherwise
Independent variable:	
Child characteristics:	
Child age	Child's age from 5 to 15 years
Child gender	1 if child is male 0 otherwise.
Child age square	Age of child squared
Child education	Child education in completed years.
Head characteristics:	
Head age	Age of the head of household in years.
Head age squared	Age of the head of household squared.
Head gender	1 if head of household is male, otherwise 0
Head marital status	1 if head of household is married, otherwise 0
Family Characteristics:	
Father education	Father completed level of education
Mother education	Mother completed level of education
Family size	Number of household members
Per capita expenditures	Household per capita

Land ownership	1 if household has land 0 otherwise.
Land holdings (acres)	Land possessed by a household (in acres)
Credit (yes)	1 if household attempted to get loan from lender, 0 otherwise.
Community Characteristics:	
Locale	1 if households are from Punjab province, 0 otherwise. 1 if household from kpk, 0 otherwise. 1 if household from Sindh, 0 otherwise.
Primary school availability (yes)	1 if there are primary schooling each village, 0 otherwise.
Secondary school's availability (yes)	1 If there are secondary schools in each village, 0 otherwise.
Child health	1 if child suffered from illness or injury and disability, otherwise 0.

Source: Calculation based on PRHPS (2012)

Conclusion:

Above discussion highlighted the data and methodology for estimating the factors of children activities. Data is taken from survey PRHPS (2012). Data shows that the highest education of the children shows that child education declines with the increase in the level of education. Table 1 also shows that percentage of the boys to get education at the secondary and matric level is high as compared to girls. Secondly the gender and provinces wise table shows that highest enrolment rate of children is in the province KPK and the highest non-enrolment rate exists in province Sindh. Main reason behind children drop out from school is poverty. Following the households' production model, the theoretical framework has been made which shows four characteristics, child characteristics, family characteristics, head and community

characteristics which effect children activities. Moreover, schooling and work and school (combined) is highest in province KPK and idleness and work is high in Sindh. There are four dependent variables such as work, schooling, idleness and (work and school combined). Multinomial logit model is used for estimating the children activities.

Chapter 4

Results and discussion

4.1 Estimations, Marginal Effects and findings

This research explores the influence of community characteristics, household characteristics, family characteristics and children characteristics on the children activities of ages 5 to 15. PRHPS data provides information about children activities along with the data about these characteristics in this age cohort.

In this empirical study, dependent variables are referred as the time that is spent by children in different activities. Time that is represented by variables like, value 1 is given to those children who go for work, if children go for schooling are denoted by value 2, those children who work and study combined are characterized by value 3, and those children who neither work nor study are presented by 4.

Multinomial logit model is used for child activity decisions making and finding the probability that either child will go for work, schooling, idleness or they go for work and study both.

Mean and standard deviation of independent variables are shown in table 6. Taking work activity as base, the sequential multinomial logit results are shown in table 7 that represent coefficients and standard errors. marginal effects are shown in table 8 that reports the derivatives of parameters estimates with respect to schooling. These derivatives represent the percentage change in the probability for a one unit change at the means of given explanatory variable constant. Table 9 shows marginal effects with respect to work and schooling and table 10 shows derivative with respect to idleness. Table 11 shows the marginal effect based on children working.

Table 6: Summary Statistics (Mean and Sd. Deviation)

Child activities	Mean	Std. dev	Min	Max	Observation
Child characteristics:					
Child age	9.75	3.15	5	15	3896
Child gender	0.51	0.499	0	1	3896
Child education	1.02	1.16	0	4	3896
Child age square	105.12	63.5	252	225	3896
Child health	0.09	0.28	0	1	3896
Head characteristics:					
Head age	46.6	11.4	18	92	3896
Head age square	2312.2	1168.9	324	8464	3896
Head gender (male)	.98	.10	0	1	3896
Head Marital status	0.95	0.21	0	1	3896
Family Characteristics:					
Father education	0.45	0.49	0	5	3896
Mother education	0.65	1.06	0	5	3896
Family size	3.49	1.57	1	9	3896
Per capita expenditures	19963.71	26464.8	475	391970.3	3896
Land ownership (yes)	.3534394	.478099	0	1	3896
Land (Acres)	1.64	4.65	0	80	3896
Land (acre) square	24.35823	190.4569	0	6400	3896
Credit (yes)	0.32	0.46	0	1	3896
Community Characteristics:					
Primary schools (yes)	0.02	0.16	0	1	3896
Secondary schools (Yes)	0.02	0.22	0	1	3896

KPK	0.29	0.89	0	1	3896
Punjab	0.60	0.49	0	1	3896
Sindh	0.59	0.91	0	1	3896

Source: Calculation based on PRHPS (2012)

Table 7 : Multinomial Logit Coefficients Estimates children from (5 to 15 years)

Variable	Schooling			Work and school			Idleness		
	Boys	**Girls**	**Overall children**	**Boys**	**Girls**	**Overall children**	**Boys**	**Girls**	**Overall children**
Constants	0.18* (2.01)	0.6*** -7.59	-2.735* (-2.48)	-1.9*** (-11.25)	-2.5*** (-14.7)	-5.3*** (-4.10)	0.87*** (10.63)	0.32*** (4.74)	4.75*** (4.31)
Child characteristics									
Child age	0.80*** (3.98)	0.35 (1.75)	0.46*** (3.35)	1.16*** (4.64)	0.51* (2.23)	0.7*** (4.35)	-0.526* (-2.57)	-0.83*** (-4.25)	-0.74*** (-5.36)
Child age sq.	-0.05*** (-5.64)	-0.04*** (-4.39)	-0.04*** (-6.42)	-0.05*** (-4.95)	-0.03** (-3.01)	-0.04*** (-5.24)	0.008 (0.91)	0.014 (1.55)	0.014* (2.24)
Child Edu	0.99*** (13.00)	0.73*** (12.07)	3.62*** (24.38)	1.5*** 15.7	1.38*** (15.49)	3.58*** (22.91)	-0.6*** (-5.99)	-0.9*** (-9.12)	-0.42** (-2.87)
Child health	-0.0637 (-0.24)	-0.242 (-0.90)	-0.0701 (-0.44)	0.274 (0.90)	0.303 (1.07)	0.155 (0.82)	-0.07 (-0.26)	-0.170 (-0.66)	0.218 (1.35)
Child gender (male)	-	-	0.399*** (3.72)	-	-	0.59*** (4.69)	-	-	-0.00671 (-0.06)
Head Characteristics									
Head gender (male)	-1.999 (-1.62)	-0.921 (-1.23)	-0.155 (-0.38)	-2.382 (-1.86)	0.933 (0.98)	0.0872 (0.16)	-2.423 (-1.95)	0.745 (0.92)	0.211 (0.46)
Head age	0.00700 (0.15)	0.103* (2.38)	0.0630* (2.11)	0.0602 (-1.18)	0.088 (1.81)	0.0244 (0.72)	-0.008 (0.17)	-0.066 (1.51)	-0.0508 (1.60)
Head age sq.	0.00006 (0.14)	-0.0007 (-1.89)	-0.0004 (-1.52)	0.0006 (1.23)	-0.000 -1.67	-0.0001 (-0.58)	-0.0000 (-0.02)	-0.000 (-1.57)	-0.000 (-1.53)
Head Marital	0.505 (1.25)	0.212 (0.48)	0.274 (0.96)	0.527 (1.16)	-0.383 (-0.85	-0.0288 (-0.09)	1.022* (2.05)	-0.613 (-1.41)	0.0864 (0.27)
Family characteristics:									
Father Edu	0.0305 (0.14)	0.348 (1.75)	0.170 (1.20)	-0.107 (-0.42)	-0.427 (-1.80)	-0.239 (-1.41)	0.001 (0.00)	-0.189 (-0.92)	-0.132 (-0.89)
Mother Edu	0.223* (2.09)	0.127 (1.36)	0.19** (2.92)	0.150 (1.23)	0.29** (2.73)	0.222** (2.90)	-0.057 (-0.48)	0.158 (1.60)	-0.0670 (0.91)
Family size	-0.0201 (-0.27)	0.0714 (1.05)	-0.0276 (-0.76)	-0.007 (-0.09)	-0.04 (-0.57)	-0.0455 (-1.10)	0.016 (0.21)	0.133 (1.91)	0.0220 (0.58)
Per capita exp	0.00*** (4.76)	0.00000 (0.51)	0.00*** (4.91)	0.00*** 3.88	-0.000 (-0.53)	0.00*** (3.55)	0.00*** (3.52)	-0.0000 (-0.68)	-0.000* (-2.09)
Land owning (Yes)	0.73*** (4.58)	0.583*** (4.60)	0.55*** (5.84)	0.99*** (5.41)	0.440** (2.83)	0.64*** (5.64)	0.197 (1.13)	-0.115 (-0.86)	-0.0323 (-0.31)

Land (Acres)	0.128** (2.83)	0.488*** (3.69)	0.0697* (2.54)	0.21** (3.79)	0.336* (2.09)	0.0674* (2.22)	0.04 (0.85)	-0.170 (-1.22)	0.0407 (0.85)
Land (acre) square	-0.0008 (-0.39)	0.00231 (1.96)	0.000629 (0.39)	-0.0064 (-1.95)	0.0024* (2.01	-0.0064 (-1.95)	0.00017 (0.08)	0.00163 (1.32)	0.00017 (0.08)
Credit (yes)	-0.0722 (-0.42)	0.175 (1.08)	0.101 (0.89)	-0.0108 (-0.05)	-0.400* (-2.18)	-0.114 (-0.87)	-0.131 (-0.71)	0.0922 (0.56)	0.0613 (0.52)
Community Characteristics:									
Primary schools' availability	-0.442 (-0.99)	0.797 (1.47)	0.02 (0.06)	0.158 (0.35)	0.118 (0.21)	0.240 (0.69)	-2.681* (-2.52)	0.371 (0.59)	-0.95* (-1.99)
Secondary schools' availability	0.427 (0.93)	-0.0235 (-0.06)	0.4 (1.62)	0.310 (0.66)	0.272 (0.73)	0.267 (0.99)	-5.897 (-0.02)	-0.314 (-0.68)	-0.01 (-0.03)
Kpk	0.72*** (4.59)	0.60*** (5.12)	0.7*** (8.85)	1.01*** (6.00)	0.93*** (7.40)	0.84*** (9.73)	-0.035 (-0.21)	-0.074 (-0.61)	0.078 (0.91)
Punjab	0.69*** (3.81)	1.12*** (6.02)	1.05*** (8.72)	1.24*** (5.45)	1.4*** (6.25)	1.35*** (8.74)	-0.59** (-3.19)	0.232 (1.38)	-0.4*** (-3.84)

*** indicates that coefficients are significant at 1 % level., ** indicates that coefficients are significant at 5 percent level. * Indicates that coefficients are significant at 10 percent level.

Table 8: Marginal effect (Schooling)

Variable	Boys		Girls		Overall	
	dy/dx	S. E	dy/dx	S. E	dy/dx	S. E
Child characteristics:						
Child age	0.176	(0.457)	0.130***	(0.0315)	0.156***	(0.0226)
Child age sq.	-0.01	(0.016)	-0.009***	(0.001)	-0.009***	(0.0011)
Child Edu	0.197***	0.0117	0.189**	(0.012)	0.692***	(0.0259)
Child health	-0.0301	(0.0929)	-0.0492	(0.0410)	-0.0469	(0.0266)
Child gender (male)	-	-	-	-	0.0614**	(0.0187)
Head characteristics						
Gender head (male)	0.04	(0.24)	-0.324*	(0.144)	-0.0634	(0.0751)
Head age	0.0052	(0.0162)	0.0119	(0.00717)	0.00794	(0.00515)
Head age sq.	-0.00002	(0.000146)	-0.0000715	(0.000069	-0.00004	(0.00005)
Head marital	-0.0150	(0.267)	0.110*	(0.0548)	0.0567	(0.0475)
Family characteristics						
Father Edu	0.0155	(0.0388)	0.109***	(0.0318)	0.0701**	(0.0235)
Mother Edu	0.0511	(0.0613)	0.002	0.0152)	0.0270*	(0.0111)
Family size	-0.00638	(0.0149)	-0.00477	(0.0111)	-0.00661	0.0063
Per capita exp	0.00000323	(0.000003)	0.00000062	0.0000005	0.00000128***	(0.0000003)
Land owning (yes)	0.0832***	(0.0234)	0.113***	(0.0222)	0.0144***	(0.00341)
Land per acre	0.0125*	(0.00539)	0.103***	(0.0228)	0.0144***	(0.00341)
Land acre square	0.000197	(0.000230)	0.000240*	(0.00011)	-0.0000433	(0.000135)
Credit (yes)	-0.00178	(0.0523)	0.0450	(0.0275)	0.03	0.01
Community Characteristics:						
Kpk	0.108	(0.238)	0.0953***	(0.0178	0.112***	(0.0117)
Punjab	0.162	(0.427)	0.223***	(0.0276)	0.227***	(0.0198)
Primary school	0.0225	(0.639)	0.138	(0.113)	0.0718	(0.0665)
Secondary schools	0.783	(33.83)	0.0123	(0.0612)	0.0881	(0.0519)

*** indicates that coefficients are significant at 1 % level., ** indicates that coefficients are significant at 5 percent level. * Indicates that coefficients are significant at 10 percent level.

Table 9: Marginal effect (work and schooling)

Variables	Boys		Girls		Overall	
	dy/dx	S. E	dy/dx	S. E	dy/dx	S. E
Child characteristics:						
Child age	0.0981	0.0596	0.0814***	(0.0224)	0.0918***	(0.0156
Child age sq.	-0.00322	0.004	-0.00262*	(0.00109)	-0.003***	(0.0007
Child Edu	0.117***	0.0065	0.114***	(0.00709)	0.235***	0.0136
Child Health	0.0443	(0.0539)	0.0604	(0.0377)	0.0143	0.0208
Child gender (male)	-	-	-	-	0.0494***	(0.0128)
Head characteristics:						
Gender head (Male)	-0.0484	(0.194)	0.0947*	(0.0396)	0.0119	0.0521
Head age	-0.0080	(0.00952)	0.00345	(0.0052)	-0.00269	0.0033
Head age square	0.00007	(0.000081	-0.0000331	(0.000050	0.00002	0.00003
Head Marital	-0.000977	(0.0829)	-0.0233	(0.0517)	-0.0232	0.0338
Family characteristics:						
Father Edu	-0.0153	(0.0303)	-0.0572*	(0.0243)	-0.0333*	0.0165
Mother Edu	0.00336	(0.0310)	0.0223*	(0.0107)	0.0130	0.0074
Family size	0.000043	(0.00920)	-0.0138	(0.00805)	-0.00480	0.0041
Per capita exp	0.0000001	0.0000003	-0.0000001	0.000000	0.0000007***	0.00000021
Land owning (yes)	0.0726***	(0.0179)	0.0330	(0.0171)	0.0529***	(0.0124)
Land per acre	0.0170***	(0.00482)	0.0266	(0.0174)	0.00545*	(0.00236)
Land acre square	-0.000762*	(0.000314	0.000130*	(0.00006)	-0.0000606	(0.000079)
Credit (yes)	0.00828	(0.0181)	-0.0557**	(0.0174)	-0.00991	(0.0121)
Community characteristics:						
Kpk	0.0698***	(0.0154)	0.0887***	(0.0122)	0.0582***	0.0073
Punjab	0.112***	(0.0235)	0.136***	(0.0203)	0.114***	0.0136
Primary	0.124	(0.163)	-0.0363	(0.0502)	0.0646	0.0459
Secondary	0.193	(9.022)	0.0466	(0.0391)	0.00852	0.0269

*** indicates that coefficients are significant at 1 % level., ** indicates that coefficients are significant at 5 percent level. * Indicates that coefficients are significant at 10 percent level.

Table 10: Marginal effect (idleness)

Variables	Boys		Girls		Overall	
	dy/dx	S. E	dy/dx	S. E	dy/dx	S. E
Child Characteristics:						
Child age	-0.224	(0.714)	-0.229***	(0.0330)	-0.234***	(0.0207)
Child age sq.	0.00990	(0.0316)	0.00849***	(0.00168	0.00963***	(0.00106)
Child Edu	-0.220***	(0.009)	-0.233***	(0.00990)	(0.0218)	(-0.56***)
Child health	-0.0148	(0.0581)	-0.0293	0.0415)	0.0452	(0.0258)
Child gender (male)	-	-	-	-	-0.0688***	(0.0170)
Head Characteristics						
Gender head	-0.0898	(0.284)	0.185*	(0.0719)	0.0523	(0.0636)
Head age	-0.00255	(0.0100)	-0.000819	(0.00747	-0.00205	(0.00491)
Head age square	0.000029	(0.0001)	0.0000383	(0.00007	0.00003	(0.00004)
Head Marital	0.0887	(0.327)	-0.139	(0.0831)	-0.0112	(0.0511)
Family Characteristics:						
Father Edu	-0.00005	(0.0267)	-0.0540	(0.0329)	-0.0369	(0.0216)
Mother Edu	-0.0411	(0.132)	0.00959	(0.0160)	-0.0180	(0.0110)
Family size	0.00549	(0.0201)	0.0232*	(0.0116)	0.00950	(0.00589)
Per capita exp	-0.0000003	(0.00000)	-0.0000006	(0.00000)	0.000002***	(0.000000)
Land owning (yes)	-0.0891***	(0.0201)	-0.0896***	(0.0209)	-0.0889***	(0.0145)
Per acre land	-0.0162***	(0.00472)	-0.0887***	(0.0217)	-0.0136***	(0.00339)
Per acre land square	0.000396*	(0.00015)	0.0000391	(0.00013)	0.000254*	(0.000114)
Credit (yes)	-0.0139	(0.0497)	0.0186	(0.0279)	-0.01	(0.015)
Community Characteristics:						
Kpk	-0.124	(0.395)	-0.110***	(0.0191)	-0.098***	(0.0116)
Punjab	-0.236	(0.644)	-0.280***	(0.0309)	-0.269***	(0.0190)
Primary	-0.211	(0.899)	-0.0141	(0.113)	-0.162***	(0.0486)
Secondary	-1.088	(49.58)	-0.0753	(0.0807)	-0.0619	(0.0675)

*** indicates that coefficients are significant at 1 % level., ** indicates that coefficients are significant at 5 percent level. * Indicates that coefficients are significant at 10 percent level.

Table 11: Marginal effect (working):

Variables	Boys		Girls		Overall	
	dy/dx	S. E	dy/dx	S. E	dy/dx	S. E
Child Characteristics:						
Child age	-0.0498	(0.203)	0.0180	(0.0325)	-0.0178	(0.0183)
Child age square	0.00372	(0.0109)	0.00341*	(0.00159)	0.00347***	(0.000883
Child Edu	-0.0948***	(0.00826)	-0.0691***	(0.0121)	-0.0986***	(0.00760)
Child Health	0.000561	(0.0250)	0.0180	(0.0434)	-0.1106	(0.0241)
Child gender (male)	-	-	-	-	-0.0420**	(0.0135)
Head characteristics:						
Gender head	0.0944	(0.117)	0.0442	(0.115)	0.0640	(0.0530)
Head age	0.000308	(0.00452)	-0.0162*	(0.00695)	-0.00687	(0.00391)
Head age square	-0.0000129	(0.00005)	0.000143*	(0.00006)	0.0000547	(0.0000388)
Head Marital	-0.0727	(0.0545)	0.0521	(0.0610)	-0.0162	(0.0398)
Family Characteristics:						
Father Edu	-0.000132	(0.0196)	0.00170	(0.0328	0.00589	(0.0189)
Mother Edu	-0.0134	(0.0437)	-0.0322*	(0.0157)	-0.0236**	(0.00913
Family size	0.000847	(0.00796)	-0.0142	(0.0110)	0.00237	(0.00466)
Per capita exp	-0.000002	(0.0000)	0.000000137	(0.000000	-0.000000389	(0.0000003)
Land owning (yes)	-0.0667***	(0.0149)	-0.0569**	(0.0209)	-0.0591***	(0.0130)
Land per acre	-0.0132**	(0.00510)	-0.0406	(0.0221)	0.00620	(0.00429)
Land per acre square	0.000169	(0.00025)	-0.000409	(0.00023)	0.000150	(0.000253)
Credit (yes)	0.00739	(0.0157)	-0.00784	(0.0260)	-0.0120	(0.0137)
Community characteristics:						
Kpk	-0.0546	(0.148)	-0.0741***	(0.0195)	-0.0635***	(0.0116)
Punjab	-0.0381	(0.204)	-0.0789**	(0.0288)	-0.0518**	(0.0159)
Primary	0.0645	(0.129)	-0.0881	(0.0673)	0.00291	(0.0444)
Secondary	0.112	(6.728)	0.0163	(0.0653)	-0.00694	(0.0375)

*** indicates that coefficients are significant at 1 % level., ** indicates that coefficients are significant at 5 percent level. * Indicates that coefficients are significant at 10 percent level.

4.1.1 Child Characteristics

Child characteristics includes age, gender, age square, education of children and child health. These are the important factors for the parents to choose one of these four categories. The explanatory variable child age is found to be positively significant in the category "schooling". Its Probability is increasing at decreasing rate because opportunity cost of schooling increases in terms of children work, who can have more ability and capacity now to earn more money. Similarly, coefficient of combining schooling with work is positive and significant and with the increase in children's age, probability is increasing at the decreasing rate because the increase in age doesn't effect as much the "work and school combined "as it effects schooling. Idleness coefficient is found to be negative for all children and the probability is decreasing at the increasing rate because children are less likely to stay idle with the increase in age. These results are same with the results of (Burki et al., 1998) and (Khanam and Ross, 2005).

Children gender is the important determinants that affect children activities. Child gender (male) coefficient is positive and highly significant in case of schooling and combining schooling with work and coefficient of child gender is negative for idleness. Probability of male child attaining education is increased by 6 percent, combining schooling with work probability is increasing by 5 percent. And the chances of staying idle and work are declining by 6 and 4 percent respectively.

Coefficients of child level of education show positive and significant impact on child schooling. That shows that child current level of education has increases the probability of children schooling. Furthermore, as the child education level increases, there are more chances that child will work along with study due to the increase in educational cost by 2 percent. Khan and Ali (2003) provided the homogeneous results of child education on different activities of children for rural areas of Pakistan.

4.1.2 Head Characteristics

Head age coefficients are found to be positive and significant on girls and boys schooling and in case of combining school with work and negative in case of idleness, which shows the older age of the head of household increases the likelihood of child being at school and "work and school combine" and it decrease the chances of children staying idle. Furthermore, age square of head is the inverted shape that indicates probability of schooling and combined schooling along with work is increasing at the decreasing rate and the probability of idleness is decreasing at the increasing rate. Age of the head of households is positive for children education because, it increases the earning capacity due to higher skills, work experience and awareness among household head about the advantages of education. Results match with Khan (2003).

Head gender matters a lot in deciding children activities. Male head coefficient for schooling is negative and insignificant, which indicates that male headed are less likely to send their children to schools and probability of children attaining education is decreasing by 6 percent for overall children. Moreover, the study provided the interesting relationship between head of household (father) and children working, work and school and idleness decision. Probability shows that one-unit increase in male headship in rural areas of Pakistan tends to increase children working by 5 percent. Children are more likely to engage in combing schooling and work activity by 5 percent and idleness probability is increase by 6 percent. My results matched with the previous literature Burki and Shahnaz (2001) and Khan (2003).

Marital status of the head also effects child activities, because presence of both father and mother increase chances, that their children will go to school rather than combining school with work and idleness. So, coefficients of the head of the household who is currently married, their children have insignificantly positive effect on child schooling and negative effect on other activities taking work as the reference category. Probability of the married head of the household shows that children schooling, which is associated by the presence of both parents, is likely to increase by 5

percent. Furthermore, the one-unit increase in parent's marital status of head, decreases the likelihood of combining school with work by 2 percent and idleness by 1 percent. Inversely the single parent has negative impact on children schooling and positive impact on other activities. Boys influence more by absence of parent father as compared to girls. Cardoso & Souza (2004) also found the negative effects of father or mother absence on boys and girls schooling in Brazil.

4.1.3 Family Characteristics

Mother and father education both impact positively on children activities, but the mother's education is significant effect on children as compared to father's education. Marginal effect for schooling shows that an increase in father and mother's education increases the likelihood of children schooling by 7 percent and 3 percent respectively. The other activities show that father education lessens the probability of "school and work combined" and children working, and it increases in case of mother's education. Idleness probability is negative for both parents' education levels. Results also show that mothers' education has stronger impact on boys and father education impact strongly on girls schooling.

Family size is the important determinants that make parents to select choices about their children they will work, go for schooling or stay idle. Coefficients of household size are showing negative effect on schooling and positive impact on child "schooling with work" and idleness. Probability shows that an increase in size of the households, children are less likely to go to school and they are more likely to work with schooling or staying idle.

Income which is measured by (household per capita expenditure) is the important explanatory variable that represents poverty level of the household. Coefficients show that there is positive relation between income and schooling and negative relation between income and idleness and combining schooling with work. Probability derivatives shows that one-unit increase in income increases the children probability of children going to schools, because their parents can afford

the expenses on child education. Whereas, children from poor household are less likely to get education and they want their children to participate in economic activities for the substantial of household. That's why their probability of work, work along with schooling and idleness is higher as compared to the child schooling.

Land owning coefficients are showing positive and significant impact on children education and attaining education with work, because if supply of schools is available in rural areas, then children of the farmer can attain education and inter-generational tradition of working all families on land will be reduced. Probability shows that one-unit increase in owning land will increase the likelihood of children that they attain education is 1 percent, that includes 8 percent increase in boys schooling and probability and 1 percent chance of the girls to go to school. The probability of combining school with work with an association of owning land is found to be positive and it effects negatively on idleness. My results are same as Rosati and Tzannatos (2006).

Similarly, coefficients of land per capita for each household are positive and significant in case of schooling and combining schooling with work. Because, children who have large land holdings are less likely to be engaged in schooling. Marginal effect of schooling shows that with the large land holdings probability of children going to school increases but at the decreasing rate. Probability of children remaining idle or only engaged in work is negative. However, per acre land square variable shows that with an additional size of land, probability of child schooling and school and work (combined) is increasing at the decreasing rate. Probability of child idleness decreases at the increasing rate and work probability increasing more.

Coefficients of the credit for child schooling is positive and insignificant, that illustrates that one-unit increase in the access to credit increases the probability of children schooling by 2 percent. Doan et al. (2011) analysed the same results that small loans bring benefits for the education of children who belongs to poor households. Secondly, probability of other activities shows negative impacts on children working combined schooling with work and idleness. Dehejia and Gatti

(2003) provided the same evidence that access to credit is an important factor in eradicating child labour.

4.4.4 Community Characteristics

The multinomial logit estimates show that child schooling is positive and insignificant in Punjab and KPK provinces. Marginal effects illustrate that probability of children going to schools in KPK is 9 percent and 22 percent chances in Punjab. The chances of children schooling along with work is increasing in KPK and Punjab. Marginal effects of the other two activities work and idleness shows that probability of children working and staying idle is less in these provinces.

Large numbers of children are unable to work, attend schooling and they stay idle because of chronic illness so health of the children also is the determinants that affect children activity. Coefficients of the health indicate that children illness and disability have negative impacts on children schooling, work and school and positive impacts on idleness. Probability shows that one-unit increase in the illness leads to decrease schooling of children by 4 percent for boys, 6 percent for girls. Secondly health bad condition probability decreases the chances of children working by 2 percent. Moreover, with the children illness, idleness chances increase with the child's health by 4 percent.

Another explanatory variable that effect children activities strongly is availability of schools in the rural areas. Coefficient shows that access to primary and secondary schools is positive and insignificant. Probability shows that one-unit increase in availability of primary and secondary schools increases the probability of child schooling by 7 percent and 8.8 percent respectively. Access to secondary school influence on children education is high as compared to primary school. Probability of other activities such as work and schooling, work and idleness is positive. Boys are more influenced by the accessing to nearby girls as compared to girls. Chamarbagwala and Tchernis (2006) also analysed that access to primary and secondary schools decline the chances of children staying idle and combining schooling and work.

Chapter 5

Conclusion and Policy implications

The primary objective of this study is to find out and describe children activities and parental decision about deciding children activities from age 5 to 15 in rural areas of Pakistan. We have analyzed the impacts of explanatory variables such as child, household, and community characteristics on children activities; work, schooling and idleness taking work as the base category. We empirically applied the multinomial logit model on 3896 observations for the province Punjab and KPK in rural areas of Pakistan from the Pakistan Rural Household Panel Survey (PRHPS, 2012).

Our results show that an increase in the age of the children influences child activities. In the initial age, children are more likely to be in school but with the increasing age their chances of doing work with schooling increases. The results show that boys are more likely to be in school as compared to girls. Furthermore, the gender variable shows that the likelihood to combine work with school is higher for boys than girls. Whereas, girls' probability of girls od staying idle is high. The level of child education influence positively on children schooling.

Head characteristics results shows that the household head age have positive influence on children's schooling and combining schooling with work, and it impacts negatively on idleness. The gender of the household head shows that households headed by male members are less likely to send their children to school and they want their children to be engaged in working and combine school with working activities.

The results also show that parental education does matter for child education. The estimates of parental education show that father education strongly influence children schooling as compared to mother education for the whole sample. Moreover, the chances of combining school with work increases in case of mother education and declines if father is educated.

Idleness is negative in both cases. The larger is the household size the lower is child schooling and its increases the probability of work and school combined and idleness. Boys are more tend to go for work along with schooling as compared to girls, because parents expect more from them to earn money.

Higher income measured by household expenditure (per capita) increases the probability of children school and its estimated impact is negative for other activities. Land ownership dummy's impact is positive for schooling and combining schooling and work, and it has negative impact on idleness. Furthermore, we also analysed that households with large land holdings (acres) in rural areas, need more labourers to work, so that the chances of work, combining school and work is increasing and idleness is negative in this case. The availability of credit has positive effect on the education of children and negative for other activities. The chances of child education is decreasing in health prospects of the child. With chronic illness and disability of children the chances of children going to schooling is declining and its more likely that they will stay at home.

Findings of my study have numerous implications for policy. The results showed gender disparity in child schooling. It may be reduced by initiating campaigns through multimedia and print media and parents should be aware of social and economic benefits of female education. Policy of direct public funding should be introduced for the girls enrolled in school so that it may help in eradicating gender disparity in education. Interventions are needed to make by the government to support families to retain their school age children at school instead sending them for work.

Poverty alleviation programmes should be introduced, as in rural areas most of the children could attend school and they must work due to poor financial conditions. So, it is a strong intervention that is need to made for reducing child labour and increase schooling of children.

Poor household's financial condition may be improved by provision of credit through an easy access to banks without collateral and government interventions. That will be helpful to purchase capital and increase productivity and income as well and households will not rely on children earnings. Secondly there is a need of proper credit policies and procedures which will support banking industry from failure.

An easy access to primary and secondary school can increase child schooling. Similarly, establishment of hospitals nearby rural areas with technological equipment may improve health of all individuals and children that will prevent them to stay at home. To control family size in rural areas, government and non-government organizations should initialize crusades on the importance of family planning.

Glossary:

1. **Child Labor**

Per ILO, child labour depends on the type of the job and the age. If the child's age is under eighteen and if the job restricts children's education and development, it will refer as child labour (ILO, 2004).

2. **Education**

Education is the organized process that makes a child or an adult civilized, advanced and educated through attaining knowledge, experience and skills (Parankimalil, 2012).

3. **Income**

Per Hicks, (1939) income is defined as "the maximum amount a man can spend and still be as well off at the end of the week as at the beginning".

4. **Poverty**

Rowntree (1901) and Orshansky (1965) defined poverty as the condition minimum in terms of "basic needs" such as food, clothing and housing.

5. **Family Size**

Family size is defined as the number of household members including children of head wherever they live (Kamuzora & Mkanta, 2000).

6. **Idleness**

There are so many children who are neither enrolled in schools nor engaged in economic activities. These idle children do not have paid jobs but majority of these children are participating in different household work at farms or in family business (Webbink et al.)

7. **Credit**:

Central bank of Nigeria defined credit as the aggregate of banks loans, drafts, overdrafts, bills, discount bills, rents and insurance (Tajudeen, 2012).

References:

Ali, M. Rafi, S& Aslam, M. (2012), Tiny Hands on Hefty Work: Determinants of Child Labour on Automobile workshops in Sargodha (Pakistan). International journal of humanities and social sciences, vol.2 no.3.

"Pakistan Social and Living Standard Measurement (2011-12), Islamabad Pakistan: Retreived fromhttp://www.pbs.gov.pk/sites/default/files/pslm/publications/pslm2011-12/complete_report_pslm11_12.pdf." Pakistan Bureau of Statistics(May 2013).

Alderman, H., Behrman , J. R., Lavy.V & Menon, R. (2001). "Child health and school enrollment: A longitudinal analysis." Journal of Human resources: 185-205.

Ali, G. (2010). "Economic Factors Responsible for Child Labor (A Case study of District Swabi)." Journal of Managerial Sciences **1**: 86-96.

Bacolod, M. P. and P. Ranjan (2008). "Why children work, attend school, or stay idle: the roles of ability and household wealth." Economic Development and Cultural Change **56**(4): 791-828.

Baland, J. M. and J. A. Robinson (2000). "Is child labor inefficient?" journal of Political Economy **108**(4): 663-679.

Bammeke, F. (2013). "Gender, household headship and children's educational performance in Nigeria: Debunking the myth of poor performance in female-headed households." African Population Studies **24**(1-2).

Basu, K. (1999). "Child labor: cause, consequence, and cure, with remarks on international labor standards." Journal of Economic literature **37**(3): 1083-1119.

Becker, G. S. (1965). "A Theory of Allocation of Time." economic journal, 75: 493-517.

Becker, G. S. and H. G. Lewis (1973). "On the Interaction between the Quantity and Quality of Children." Journal of political Economy **81**(2, Part 2): S279-S288.

Bhalotra, S. (2003). "Child labour in Asia and Africa." Bristol, Background Research Paper for the EFA Monitoring Report, mimeo, University of Bristol.

Bhalotra, S. and C. Heady (2003). "Child farm labor: The wealth paradox." The World Bank Economic Review **17**(2): 197-227.

Biggeri, M., Guarcello, L., Lyon, S., Rosati, F. (2003). "The puzzle of "idle" children: Neither in school nor performing economic activity: Evidence from six countries." Understanding Children's Work Project draft working paper, August, (1-31)

Blunch, N.-H. and D. Verner (2001). "Revisiting the link between poverty and child labor: the Ghanaian experience."

Burki, A. A., Fasih, T., Masleh-ud- Din. (1998). "Households' Non-leisure Time Allocation for Children and Determinants of Child Labour in Punjab, Pakistan". The Pakistan Development Review: 899-914.

Burki, A. A. and L. Shahnaz (2001). Implications of Household Level Factors for Children's Time Use in Pakistan'. Unpublished paper presented in International Conference on Child Labour in South Asia, Delhi, Oct.

Canagarajah, S. and H. Coulombe (1997). "Child labor and schooling in Ghana." World Bank Policy Research Working Paper(1844).

Cardoso, E. and A. P. Souza (2004). "The impact of cash transfers on child labor and school attendance in Brazil."

Chamarbagwala, R. and R. Tchernis (2010). "Exploring the spatial determinants of children's activities: evidence from India." Empirical Economics **39**(2): 593-617.

Chamarbagwala, R. M. and R. Tchernis (2006). "The role of social norms in child labor and schooling in India."

Chaudhry, H. (2016). "Why do so many children drop out of Pakistani schools? Retreived from https://www.dawn.com/news/1241630." DAWN **25th Feb**.

Chaudhry, I. S. and S. Rahman (2009). "The impact of gender inequality in education on rural poverty in Pakistan: an empirical analysis." European Journal of Economics, Finance and Administrative Sciences **15**: 174-188.

Cigno, A. and F. C. Rosati (2000). "Why do Indian children work, and is it bad for them?".

Cockburn, J. (2001). "Child labour versus education: Poverty constraints or income opportunities?" Center for the Study of African Economies, Oxford University.

De Tray, D. N. (1973). "Child quality and the demand for children." Journal of political Economy **81**(2, Part 2): S70-S95.

Deb, P. and F. C. Rosati (2002). "Determinants of child labor and school attendance: the role of household unobservables." Understanding Children's Work Programme Working Paper, December.

Dehejia, R. and R. Gatti (2002). Child labor: the role of income variability and access to credit across countries, National Bureau of Economic Research.

Dehejia, R. and R. Gatti (2003). "Child labor: The role of income variability and credit constraints across countries." NBER Working Paper **9018**.

Doan, T. T., Gibson, J., Holmes, M.J. (2011). "Household credit to the poor and its impact on child schooling in peri-urban areas, Vietnam."

Durrant, V. L. and G. Arif (1998). "Community Influences on Schooling and Work Activity of Youth in Pakistan [with Comments]." The Pakistan Development Review: 915-937.

Emerson, P. M. and A. P. Souza (2008). "Birth order, child labor, and school attendance in Brazil." World Development **36**(9): 1647-1664.

Fan, C. S. (2004). "Child Labor and the Interaction between the Quantity and Quality of Children." Southern Economic Journal: 21-35.

Hazarika, G. and A. Bedi (2003). "Schooling costs and child work in rural Pakistan." The Journal of Development Studies **39**(5): 29-64.

Hazarika, G. and S. Sarangi (2008). "Household access to microcredit and child work in rural Malawi." World Development **36**(5): 843-859.

ILO (1998). "Targeting the Intolerable Child Labor." International Labour Conference: 86th session 1998 , Geneva **vol 1**.

Index, G. S. (2013). "Walk free foundation." Available (consulted 9 February 2014) at: http://www.ungift.org/doc/knowledgehub/resource centre/2013/GlobalSlaveryIndex_2013_Do wnload_WEB1. pdf.

Islam, A. and C. Choe (2013). "Child labor and schooling responses to access to microcredit in rural Bangladesh." Economic Inquiry **51**(1): 46-61.

Jacoby, H. G. and E. Skoufias (1997). "Risk, financial markets, and human capital in a developing country." The Review of Economic Studies **64**(3): 311-335.

Jamison, D. T. (1986). "Child malnutrition and school performance in China." Journal of development economics **20**(2): 299-309.

Jensen, P. and H. S. Nielsen (1997). "Child labour or school attendance? Evidence from Zambia." Journal of population economics **10**(4): 407-424.

Kambhampati, U. S. (2009). "Child schooling and work decisions in India: The role of household and regional gender equity." Feminist Economics **15**(4): 77-112.

Kamuzora, C. L. and W. Mkanta (2000). "Poverty and household/family size in Tanzania: multiple responses to population pressure?".

Khan, R. E. A. (2003). "Children in different activities: child schooling and child labour." The Pakistan Development Review: 137-160.

Khan, R. E. A. and K. Ali (2003). "Determinants of schooling in rural areas of Pakistan."

Khan, R. E. A. and K. Ali (2005). Who Are Schooled in Urban Pakistan?, EconWPA.

Khanam, R. (2008). "Child labour and school attendance: evidence from Bangladesh." International Journal of Social Economics **35**(1/2): 77-98.

Khanam, R. and R. Ross (2005). "Impact of child labour on school attendance and school attainment: Evidence from Bangladesh."

Maitra, P., Ranjhan Ray (2000). "“The Joint Estimation of Child Participation in Schooling and Employment: Comparative Evidence from Three Continents”." University of Monash, Victoria, and University of Tasmania, Australia. .

Malik, A., Bhutto, N.A., Sheikh, Akhter, E., Butt, F. (2012). Another Real Fact about Child Labor: A Comparative Study between Districts of Two Provinces of Pakistan. Proceedings of 2nd International Conference on Business Management Lahore.

Nielsen, H. S. (2001). Child labor and schooling in Zambia. Child Labor and Schooling in Africa: a Case Study of Ghana, Tanzania, Côte D'ivoire and Zambia, Hdnet, World Bank Publications.

Parankimalil, J. (2012). "Meaning, nature and aims of education." Retrieved April **16**: 2013.

Patrinos, H. A. and G. Psacharopoulos (1997). "Family size, schooling and child labor in Peru–An empirical analysis." Journal of population economics **10**(4): 387-405.

Psacharopoulos, G. (1997). "Child labor versus educational attainment Some evidence from Latin America." Journal of population economics **10**(4): 377-386.

Ranjan, P. (2004). Why Children Work, Attend School, or Stay Idle: Theory and Evidence. Econometric Society 2004 Australasian Meetings, Econometric Society.

Ravallion, M. and Q. Wodon (2000). "Does child labour displace schooling? Evidence on behavioural responses to an enrollment subsidy." The Economic Journal **110**(462): 158-175.

Ray, R. (2000). "Child labor, child schooling, and their interaction with adult labor: Empirical evidence for Peru and Pakistan." The World Bank Economic Review **14**(2): 347-367.

Ray, R. (2002). "Simultaneous Analysis of Child Labour and Child Schooling: Comparative Evidence from Nepal and Pakistan." Economic and Political Weekly: 5215-5224.

Rickey, L. (2009). The Determinants of Child Labor and Schooling in the Philippines, Department Of Economics, Stanford University.

Rosati, F. C. and Z. Tzannatos (2006). "Child labour in Vietnam." Pacific Economic Review **11**(1): 1-31.

Rosenzweig, M. R. and R. Evenson (1977). "Fertility, schooling, and the economic contribution of children of rural India: An econometric analysis." Econometrica: journal of the Econometric Society: 1065-1079.

Saad-Lessler, J. (2010). "A cross-national study of child labor and its determinants." The Journal of Developing Areas: 325-344.

Sahu, K. K. (2013). "An empirical study of determinants of child labour." International Journal of Science, Environment and Technology **2**(3): 423-433.

Sasaki, M. and T. Temesgen (1999). "Children in different activities: Child Labor and Schooling in Peru." Draft, World Bank, Washington, DC.

Sawada, Y. and M. Lokshin (1999). "Household schooling decisions in rural Pakistan."

Shah, N. M. (1986). "Pakistani women: A socioeconomic and demographic profile."

Siddiqi, A. F. (2013). "Important determinants of child labor: A case study for Lahore." American Journal of Economics and Sociology **72**(1): 199-221.

Siddiqi, F. and H. A. Patrinos (1995). Child labor: Issues, causes and interventions, World Bank Washington, DC.

Vásquez, W. F. and A. K. Bohara (2010). "Household shocks, child labor, and child schooling: evidence from Guatemala." Latin American research review: 165-186.

Vuri, D. (2008). "The effect of availability and distance to school on children's time allocation in Ghana and Guatemala."

Webbink, E., Smith, J & Jong, E.D "Hidden child labour: Determinants of Housework and Family work of Children in 13 developing countries."

Wolfe, B. L. (1985). "The Influence of Health on School Outcomes: A Multivariate Approach." Medical Care **23**(10): 1127-1138.