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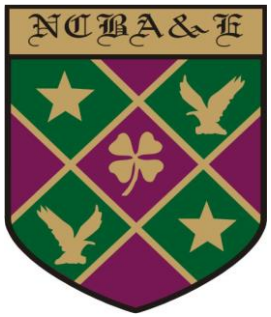

FACTORS AFFECTING CHILDREN'S WORK AND SCHOOLING: A CASE STUDY OF PUNJAB (PAKISTAN)

BY

UZMA ABBAS

MASTER OF PHILOSOPHY
IN
ECONOMICS

FEBRUARY, 2023

NATIONAL COLLEGE OF BUSINESS ADMINISTRATION & ECONOMICS

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Uzma Abbas

A dissertation submitted to
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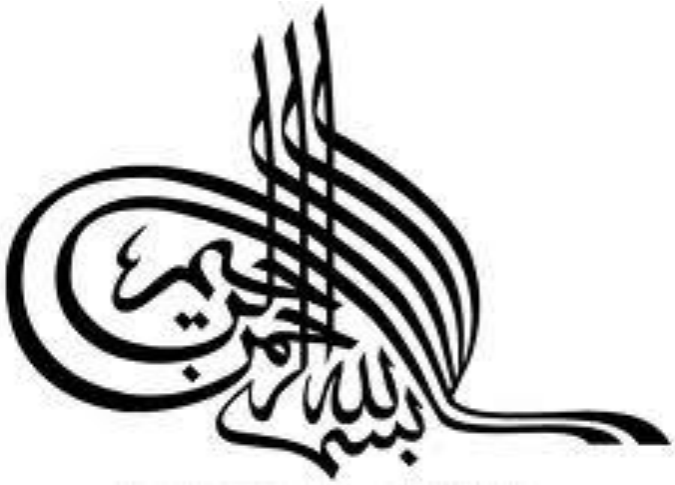

In the name of ALLAH,
The Most Beneficial,
The Most Merciful,

NATIONAL COLLEGE OF BUSINESS ADMINISTRATION & ECONOMICS LAHORE

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MASTER OF PHILOSOPHY IN ECONOMICS

Dissertation Committee:

_____
Chairman

_____
Member

_____
Member

_____
Director Research
National College of Business Administration & Economics

DECLARATION

It is to declare that this research work has not been submitted for obtaining similar degree from any other university/college.

UZMA ABBAS
February, 2023

DEDICATED

TO

I'd like to dedicate my work to
'William Wordsworth' who used these
expressions in his poem.

My heart leaps up when I behold
A rainbow in the sky:
So was it when my life began;
So is it now I am a man;
So be it when I shall grow old,
Or let me die!
The Child is father of the Man;
And I could wish my days to be
Bound each to each by natural piety.

ACKNOWLEDGEMENT

All praises and thanks to Almighty Allah who has given us the wisdom and knowledge to identify the right path and reach the truth. With profound gratitude, I wish to thank some marvelous people who have encouraged and helped me in the completion of my research work.

I express my profound feelings of gratitude and indebtedness to my honorable supervisor, Dr. Zahid Pervaiz for his ever inspiring guidance and constructive suggestions. Without his positive feedback, this thesis would not have materialized.

I would like to acknowledge the role of my teachers Prof. Dr. A.R. Chaudhary and Dr. Khadija Khan who always helped me whenever I needed it. I would like to express my sincere gratitude to Mr. Haroon Jamal Technical Advisor, Social Policy and Development Centre (SPDC), Syed Wasim Abbas, Director Pakistan Bureau of Statistics, Mr. Sohail Ahmad Research Officer (Statistics), Planning and Evaluation Directorate, Livestock Department, Government of Punjab, Lahore. Their cooperations and suggestions helped me to produce this research work in the present form. Their brilliant and skillful knowledge enriched this study higher than my expectation. This research work would not be possible without their stimulation inspiration and cooperation.

Finally, I would like to thank my parents and brothers for emotional support. I would also thank to my classmates, Mr. Ateeq ul Rahmaan, Mr. Muhammad Sarfraz and Mr. Bismillah Khan from The University of Lahore for their prayers, encouragement and unconditional support throughout the entire process; as they always have been my inner strength and support.

RESEARCH COMPLETION CERTIFICATE

Certified that the research work contained in this thesis entitled **"Factors Affecting Children's Work and Schooling: A Case Study of Punjab (Pakistan)"** has been carried out and completed by **Ms. Uzma Abbas** under my supervision during her **M.Phil. Economics** Programme.

(Dr. Zahid Pervaiz)
Supervisor

SUMMARY

This study aims to investigate the factors affecting the household's choice of child schooling, work and idleness. The dataset of MICS 2017-18 for children of age cohort 05-17 has been used for our analysis. In this study, we analyzed some important characteristics of child, their parents and households that can effect schooling, work and idleness of children. We have investigated the effect of Benazir Income Support Programme (BISP), whether it is helpful to increase school enrollment or not. It also intends to explore the significance of free of cost school education Programmes for increasing schooling and decreasing Children's Work and labour. In this study, two indices have been calculated. The first index is the Multidimensional Poverty Index (MPI). We calculated the deprivation score of each household by identify the deprived and non-deprived households or individuals according to the available facilities at an individual level or household level. After that, we assigned the weights. In this way, we got a deprivation score(s) for each household. To make differentiate between Multi-dimensionally poor and non-poor, we created a cut-off of 33.3 percent or one-third of the weighted indicators. If 's' (deprivation score) ≥ 33.3 percent, that household is multi-dimensionally poor. If 's' (deprivation score) ≥ 20 present but 's' (deprivation score) ≤ 33.3 percent, that household (and everyone in it) is vulnerable to poor. If 's' (deprivation score) ≥ 50 percent, that household (and everyone in it) is severely multi-dimensionally poor (UNDP, 2020). After getting these statuses, we created multiple categorical independent variables with the name of the economic statuses of households. We observed the impact of these statuses on Children's Work, Schooling and Idleness by using Logistic Regression Model. The second index is Gender Parity Index (GPI). The Gender Parity Index (GPI) is a socioeconomic index. This index estimates the relative opportunity to get education for boys and girls. These indexes along with characteristics of parents, children and households are used in Logistic Regression to determine the Children's Work, schooling and Idleness. We also have found that the interaction effects of some variables that may be more important than individual effects.

We applied Logistic Regression in this study due to the nature of the data. We also used Two-Stage Least Squares Technique for treating the School Enrolment variable as an endogenous variable. Enrolment of children in all schools is an Endogenous variable. This endogenous variable is correlated with the disturbance term. Tuition support (free schooling) and Financial support (BISP) are instrumental variables of School Enrolment.

The empirical results of Logistic Regression Models suggest that the wealth index quintiles have a statistically significant association with Children's Work and schooling. Consequently, it has been stated that the likelihood of involvement of child in work decreases with an increase in a household's wealth status. Similarly, the likelihood of attending school increases with an increase in a household's wealth status. The interaction effects of financial supports with all poor Wealth Index Quintiles of households have insignificant effects. But the interaction of financial support with the Fourth Wealth Quintile is significant. It reveals that the amount of financial support provided by the government is not enough to push the children back from work and increase enrolment in schools. All financial supports through any Programme by the government have a statistically insignificant association with Children's Work and schooling. It reveals that the amount of financial support provided by the government is not sufficient to push the children back from work for poor households. Financial Support as an individual has a statistically insignificant association with Children's Work and schooling, but the interaction effects of financial support with different districts of Punjab show few districts get financial benefits to reduce Children's Work and dropout rate from schools. Financial support through BISP by the government has a statistically insignificant association with Children's Work, schooling, and idleness.

The age of the child is a significant factor in a choice of child schooling, work, and idleness. It reveals that the likelihood of being engaged in Children's Work for ages 10-14 is decreasing but paid work is increasing for this age. So, a large number of children in the age group 10-14 are involved in paid work. Results of GPI show that the individual effect of GPI on child schooling is insignificant. But interaction effects of child ages and GPI have statistically significant associations with schooling. If it is given parity to girls to get an education for the age of 15-17, it increases schooling; the likelihood of children' going to school is 56.7 percent. If it is 'given parity to girls to get education for the age of 10-14, it increases schooling; the likelihood of children' going to school is 346.3 percent higher (or it increases) among the children aged between 10-14. Different Economic Statuses of households have a positive impact on child Paid Work and Idleness. The likelihood of involvement of the child in work decreases with an increase in the household's economic status. Similarly, the likelihood of attending school increases with an increase in a household's economic status. This study depicts that different groups in Punjab live completely different lives. 40.3 percent children aged 5-9 who belong to the poorest households are attending schools. Whereas 67.5 percent children aged 5-9 who belong to the richest households are attending school. The results of the variable gender show that boys have more opportunities of getting an education as compared to girls. The results of the

variable Orphanhood show that the likelihood of children for going to school is 18.2 percent lower among those children whose both mother and father are not alive as compared to the children whose both mother and father are alive. The variable region demonstrates that the likelihood of child paid and unpaid work is higher in urban areas as compared to rural areas of Punjab The likelihood of children neither at school nor at work is 12.4 percent higher among those children who belong to urban areas as compared to the children who live in rural areas. Remittances have a statistically insignificant association with Children's Work, schooling, and idleness. The education levels of parents have a statistically significant association with Children's Work, schooling and idleness. The likelihood of involvement of the child in work and idleness decreases with an increase in parents' Levels of Education. Similarly, the likelihood of attending school increases with an increase in parents' Levels of Education.

Ranks of the children have a statistically significant association with Children's Work, schooling, and idleness. The likelihood of involvement of the child in work decreases with an increase in the rank of the child in a household. Similarly, the likelihood of attending school increases with the increase rank of the child in a household. The place where a child is born and brought up determines his chances of living in different statuses as well as his quality of education. This study shows that different circumstances in different districts determine the schooling and work conditions of children. Results of Logistic Regression show that children have a higher likelihood of going to school in districts Rawalpindi, Layyah, Bahawalnagar, Muzaffargarh, Faisalabad, Mandi Bahauddin, Khanewal, Sahiwal, Jhelum, Vehari, Okara, Attock, Bhakkar, Khushab, Hafizabad, T.T Singh, Jhang, Mianwali, Sargodha, Narowal, Chiniot, Pakpattan, Chakwal, Multan, Nankana Sahib, Kasur, Sialkot, Gujrat as compared to Rajanpur. The likelihood of being involved in child work is lower in some specific districts. This study is pointing out the district wise phenomenon of Child activities. Rajanpur ranks 1st out of 36 districts of Punjab for out of school children (It has the lowest school attendance rate of children). While Narowal ranks last out of 36 districts of Punjab for out of school children. Schooling and work statuses of children in the whole of Punjab reveal that about 53.5 percent children in age cohort 05-17 are currently attending school without facing the extra burden of work. Thus, overall 39.1 percent children are involved in Work. 7.3 percent fall in the residual category (neither school nor at work). This category is called 'idle'. Probably, this category is apparently 'invisible' in this dataset because this dataset seemingly shows children's activities related to schooling and work. It is not mentioned as a variable in this dataset. Mostly, children in this category are disabled or engaged in unhealthy activities.

We also used Two-Stage Least Squares Technique for treating the School Enrolment variable as an endogenous variable. We have found the fitted value of the endogenous variable that is not correlated with the error term.

We also have illustrated a graphical presentation and analysis about the environment which children are facing during their work. A large part of boys aged 14-17 are highly involved in 'Work at Heights'; 65 percent boys are involved in 'Work at Heights'. A large part of girls aged 10-14 are highly involved in caring 'Exposed to Loud Noise or Vibration'; 48.7 percent girls are involved in 'Exposed to Loud Noise or Vibration'.

Multidimensional poverty, severe poverty and vulnerability to poverty in Punjab Pakistan have been analyzed in this study. We also created the value of MPI for Punjab. This study may be helpful for organizing new policy standards. It can also provide useful information to human development experts and statisticians for assessing and using poverty indices.

LIST OF ABBREVIATIONS

MICS	Multiple Indicator Cluster Survey
MPI	Multidimensional Poverty Index
GPI	Gender Parity Index
PESRP	Punjab Education Reform Programmes
UNICEF	United Nations International Children's Emergency Fund
ILO	International Labour Organization.
PAMS	Pak Alliance for Maths and Science
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNDP	United Nations Development Programme
IBRD	International Bank of Reconstruction and Development.
OPM	Oxford Policy Management
BISP	Benazir Income Support Programme

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Out of school children and child labour are important issues globally as well as in Pakistan. During recent estimations 258 million children ages 6-17 were out of school globally (UNESCO, 2019). Pakistan is also one among those countries where a large number of children are out of school. It is estimated that 22.8 million children ages 5-16 are out of school in Pakistan, 32 percent, i.e. one third, are out of school. (UNICEF, 2020). Alone in Punjab, the out of school children between the ages 5-16 are 7.7 million. Despite being the most prosperous province of Pakistan, Punjab's educational landscape tells a depressing tale when it comes to children's education. In Punjab, the total papulation of children aged 4-16 is 32 million. 24 percent children of this population are out of school in Punjab (PAMS, 2021). Pakistan is celebrating its 75th independence anniversary in 2022 and it should be a matter of great concern for our education authorities. We have not been able to achieve a universal literacy rate, not to talk of universal primary education. There are the number of factors that affect schooling, work and idleness of children. Different financial and social supports, demographical and social characteristics of children, their parents and households can effect schooling, work and idleness of children.

Child labour is frequently associated with children being out of school. On one hand, the Punjab government has been trying to bring back those children who are out of school. On the other hand, Child labour is also affecting the education of children all over the world. Child labour entails "work which is of such a nature or intensity that it is detrimental to children's schooling or harmful to their health and development" (ILO, 1998). UNICEF (2011) categorizes child labor and domestic work in accordance with the age of child and the number of hours worked per week: "Ages 5–11: at least one hour of economic work or 28 hours of domestic work. Ages 12–14: at least 14 hours of economic work or 28 hours of domestic work. Ages 15–17: at least 43 hours of economic work or domestic work".

All over the world, 160 million children aged 5-17 are engaged in child labour. About 79 million children, half of them, are involved in hazardous work (work in dangerous or unhealthy environments). Further 8.9 million children will be in child labour by the end of 2022 as a result of rising poverty.

It has become a need of the hour for the whole world to reduce child labour (ILO, 2021). Children's Work consists of all activities such as helping in the family business, helping parents in the house, or earning pocket money outside school hours and during school holidays. "Domestic worker is someone who works within the employer's household. Domestic workers perform a variety of household services for an individual or a family, from providing care for children and elderly dependents to cleaning and household maintenance, known as housekeeping" (ILO, 1998).

Child labour has become a burning issue for developing countries. The majority of victims of child labour belong to Asia and Africa. More than 90 percent of total child labour exists in Asia and Africa. 61 percent of total child labour exists in Asia. Approximately 32 percent are found in Africa, Latin America has 7 percent, the US, Canada, Europe, and other nations have only 1 percent. Pakistan is a developing country. In Pakistan, children are found working to support their families because of poor economic status (ILO, 2021).

Pakistan ranks third in the ranking of child labour and forced labour in Asia and the Pacific. Pakistan ranks 8th out of 167 countries for the occurrence of child labour and forced labour all over the world (WFF, 2019). UNDP's latest Human Development Report, 2020 outlined 3 p's of inequality in Pakistan; Power, People, and Policy. Inequalities are widening all the time. Inequalities in Pakistan are the reason for three factors 'power', 'people', and 'policy'. Power can contribute to inequality by giving certain groups more than their fair share of benefits and privileges. People can contribute to inequality through discrimination based on gender, class, region, or more. Last but not least, a 'Policy' can lead to inequality because it may be ineffective or not helpful to the poorest and the most vulnerable. Different groups in Pakistan live completely different lives (UNDP,2020).

Prophet (PBUH) said, "The person who does not love children does not belong to us." (Abu Da'ud, Hadith: 4943). Children of today will become young and energetic people in the future. They are key to the prosperous and splendid future. Allah says in Qur'an, "Wealth and children are the splendor of the life of this world" (Surah Al-Kahf, verse 46). The last Prophet (PBUH) also said, "Love your youngsters, help and teach them" (Tirmizi Sharif). Islam has prohibited from over burdening children with work. Bible states that "Train up a child in the way he should go; even when he is old he will not depart from it." (Proverbs 22:6).

The investment of parents in the schooling of children will be continued up to the point where the marginal costs of a time of child in school (including foregone earnings from work) equal the marginal benefits. The cost of education is a factor that has an impact on the child's time allocation (work or school) (Cigno and Rosati, 2005; Edmonds, 2008). Free school Education Programmes reduce child labour a little but, it has no significant effect on the incidence of child labour for girls. Data were taken from China Family Panel Studies CFPS, 2010 (Tan et al., 2019). It is difficult for households to bear short-run economic shocks. These shocks compel parents to involve their children in child labour and drop them out from schools. (Duryea et al., 2007).

Poor Parents also want to send their children into school but they resort to child labour for getting subsistence needs. Mostly these households are credit constrained households (Basu and Van, 1998; Ranjan, 2001). In this situation, the free school education Programme does not achieve the intended purpose or desired outcome.

There is a need for financial support from the government to prop up the incomes of poor families. Poor families compel to push their children into child labour as a buffer against negative shocks such as unemployment of parents and loss of agricultural income due to droughts or other natural disasters (Edmonds, 2005). Economic shocks like sickness and accidents are the reasons for the reduction in households' income. Negative economic shocks compel parents to push their children into child labour. Poor households depend upon the breadwinner's health. When the breadwinner of the household becomes sick, all members of that household suffer from serious hardships, even to sell assets (Frölich and Landmann, 2017). Public health insurance Programmes can play an important role to reduce child labour.

The combined (interaction) effects of different financial and social supports, demographical and social characteristics of households are much more effective than individual effects on children's choice of schooling, work and idleness. To date, there is no study that can investigate the interaction effect of different social supports, demographical and Social characteristics of households.

Social safety net Programmes are helpful to decrease the poverty gap up to 15 percent throughout the world (IBRD, 2015). The Benazir Income Support Programmeme (BISP) is also known as Ehsaas Kifaalat Programmeme. It was designed for poor households to support their incomes. The amount provided by this Programme can increase the purchasing power of families earning approximately Rs. 5,000 each month by 20 percent. Mostly,

50-70 percent of total income is spent only on food by low-income families (OPM, 2020).

In a nutshell, different social support Programmes enable families to afford their basic needs like food and clothing to some extent. These financial support Programmes alone can be unable to increase child enrolment in schools. Some other factors or demographical and social characteristics of households may be the cause of decreasing out of school children and work. Consequently, we need to know such combinations along with financial support to decrease the dropout rate of children from schools and increase the enrolment of students. Policies can only be effective by improving administrational abilities and setting better targets for beneficiaries.

1.2 RESEARCH QUESTION/RESEARCH PROBLEM

More specifically, The Research Questions of our study are

1. How does financial support through any Programme by the government affect the drop out rate of children from schools?
2. How does financial support through any Programme by the government affect Children's Work?
3. How does financial support through any Programme by the government affect child paid work?
4. How does financial support through any Programme by the government affect idleness of children?
5. How does BISP affect the drop out rate of children from schools?
6. How does BISP affect Children's Work?
7. How does BISP affect child paid work?
8. How does BISP affect idleness of children?
9. How do different demographical and social characteristics of children, their parents and households affect the dropout rate of children from schools?
10. How do different demographical and social characteristics of children, their parents and households affect Children's Work?

11. How do different demographical and social characteristics of children, their parents and households affect paid Children's Work?

12. How do different demographical and social characteristics of children, their parents and households affect the idleness of children?

13. How do Economic Statuses of households affect the drop out rate of children from schools?

14. How do Economic Statuses of households affect the Children's Work?

15. How do Economic Statuses of households affect child paid work?

16. How do Economic Statuses of households affect idleness of children?

17. How does GPI affect the drop out rate of children from schools?

18. How does GPI affect Children's Work?

19. How does GPI affect paid child work?

20. How does GPI affect idleness of children?

21. How does schooling endogenously affect child labour?

1.3 OBJECTIVES OF THE STUDY

More specifically, the objectives of our study are

1. To assess the impact of different financial and social supports, demographical and social characteristics of children, their parents and households on out of school children.

2. To estimate the impact of different financial and social supports, demographical and social characteristics of children, their parents and households on the involvement of children in work.

3. To estimate the impact of different financial and social supports, demographical and social characteristics of children, their parents and households on the idleness of children.

4. Especially, analyze the impact of different financial and social supports, demographical and social characteristics of children,

their parents and households through the interaction term on children's choice of schooling, work, and idleness.

5. To estimate the endogenous effect of child schooling on child labour.

1.4 HYPOTHESES OF THE STUDY

To fulfill the objectives of our study, the following hypotheses will be tested.

Ho: Financial support through any Programme by the government does not have an impact on the out of school children.

Ho: Financial support through any Programme by the government does not have an impact on Children's Work.

Ho: Financial support through any Programme by the government does not have an impact on paid Children's Work.

Ho: Financial support through any Programme by the government does not have an impact on the idleness of children.

Ho: BISP does not have an impact on the out of school children.

Ho: BISP does not have an impact on Children's Work.

Ho: BISP does not have an impact on paid Children's Work.

Ho: BISP does not have an impact on the idleness of children.

Ho: Demographical and social characteristics of children, their parents and households do not have an impact on the out of school children.

Ho: Demographical and social characteristics of children, their parents and households do not have an impact on Children's Work.

Ho: Demographical and social characteristics of children, their parents and households do not have an impact on paid Children's Work.

Ho: Demographical and social characteristics of children, their parents and households do not have an impact on Idleness.

Ho: Economic Statuses of the household do not have an impact on out of school children.

Ho: Economic Statuses of households do not have an impact on Children's Work.

Ho: Economic Statuses of the household do not have an impact on child paid work.

Ho: Economic Statuses of household do not have an impact on idleness of children.

Ho: GPI does not have an impact on the out of school children.

Ho: GPI does not have an impact on Children's Work.

Ho: GPI does not have an impact on paid Children's Work.

Ho: GPI does not have an impact on the idleness of children.

Ho: Schooling does not endogenously impact child labour hours?

1.5 NOVELTY OF THE STUDY

Most research studies have been carried out by scholars on the determinants of child labour by using primary data for one particular district or division of Pakistan. Previous studies have almost focused on the individual effects of different variables on child labour. There is no study to date that can investigate the interaction effects among different social supports, demographical and social characteristics of households. Very few studies have investigated the all aspects of children's activities: schooling, work, and idleness. Very few research studies have been carried out on the working conditions and environment during child labour.

In order to cope with this problem, this study has estimated the effects of different interactions among financial and social supports, demographical and social characteristics of children, their parents and households. These interaction effects when combined are much more effective and significant than individual effects on Children's Work, idleness and Schooling. This study has also investigated all individual aspects of children's activities: schooling, work, and idleness. This study can be unique in the sense that no study to date has been conducted to measure the impact of 'Deprivation Score' on child labour and schooling by applying (MICS), dataset 2017-18 in regression at the

‘Household Level’. It also has measured the impact of MPI on Children’s Work, Schooling and Idleness (by using Alkire and Foster’s methodology). We calculated the deprivation scores of each household by identify the deprived and non-deprived households or individuals according to the available facilities at an individual level or household level. After that, we assigned the weights. In this way, we got a deprivation score(s) for each household. We created the household’s statuses according to deprivation scores. We created multiple categorical independent variable with the name of the economic statuses of households. We observed the impact of these statuses on Children’s Work, Schooling and Idleness by using Logistic Regression Model. (UNDP, 2020). The Gender Parity Index (GPI) is a socioeconomic index. This index estimates the relative opportunity to get education for boys and girls.

This study has also examined the phenomenon of Economic Activities of Children in conditions where child labour is hazardous (work which places a child at risk to suffer physical or mental injury). However, this study has focused on the interaction effect among different financial supports, demographical and social characteristics of households because no study to date can analyze the dataset MICS, 2017-18 to even determine the individual effects of these characteristics on child schooling, work and idleness. Therefore, an in-depth analysis has been provided by this dataset. It has considerably higher explanatory power to get results by the large sample size. For the first time, Tuition support and Financial support (BISP) are used as instrumental variables for School Enrolment. School Enrolment is an Endogenous variable and child labour is the dependent variable for this Model. The findings of the study will be helpful for policymakers in adopting suitable measures to overcome the issue of the drop out rate of children from schools in Pakistan and decrease child labour and work.

CHAPTER 2

LITERATURE REVIEW

Education plays an important role in human progress. It enables the citizens to get awareness of their basic rights. It has a close link with the economic and social development of any country. Sustainable economic development is not possible without sustainable investment in human resources. Child labour is prevailing in developing countries, where millions of children are working in workshops, fields, mines and firms.

Martey et al. (2022) investigated the impact of parental time poverty on Children's Work and education. Here, parental time poverty means 'time poor household heads'.

The heads of households work long hours for earning more income to provide accommodations for the cost of child schooling. They used the data from the Ghana Living Standard Survey, the sixth and seventh rounds of the GLSS6 and GLSS7. This study estimates that parental time poverty increases children's walking hours to and from school. Walking hours to and from school show educational costs. They used the data of children ages below 15 years. The findings of this study show that parental time poverty has a negative impact on the number of children attending public school whiles it has a positive impact on walking hours to and from school, the number of children attending private school and the number of children working. The Two-Staged Least Square (2SLS) estimation technique is used due to endogeneity in the Model. This method addresses the potential reverse causality between time poverty and the outcome indicators (schooling, Children's Work and travel time to and from school). In our critical view, this study lacks key child indicators such as child poverty, health, school performance and household indicator financial support.

Ejaz (2017) emphasizes that the exploitation of children in social sectors should be eliminated. He develops a schedule of comprehensive interviews and examines the primary data from auto workshops. He highlights the different problems of Children's Workers in auto workshops. This study investigates that poverty, lack of attention in education and cruel behavior of the teachers are the main reasons of drop out from school. Mostly children do not have an interest in going to school. This identifies that children do not have awareness of their exploitation. They seem to be also unaware of the befits of getting an education. Mostly children consider that schooling is not good,

these results are contradicted by the results of Khan (1982). Children do not have deep knowledge about their own future career. They think according to their feelings which are made by what they hear.

Ashfaq et al. (2017) examine the causes of child labour. This data was taken from the district Gujrat (Pakistan). A total of 150 children were selected from the district Gujrat (Pakistan). They investigate that poverty, lack of attention of the child in the study, large family size, death of earning member and illiteracy are the causes of child labour. They examined the primary data and observed it through percentage and frequency. In our critical point of view, regression analysis can give a clearer picture instead of frequency and percentage examination of data which is missing in this study.

Dammert et al. (2017) find that access to a poor household in credit markets is the need of the hour. Easy access to the credit market reduces child labour. Properly functional credit markets play a vital role to reduce child labour. The poor can get credits from UCT Programmes (Unconditional cash transfer Programmes). These Programmes provide loans without any conditions. There are some other Programmes related to getting loans such as CCT Programmes (Conditional cash transfer Programmes). These types of Programmes provide a loan with some conditions. So, CCT should also be provided loans with some conditions under compulsion with sending the children to school and vaccinating them. A loan should not be provided to the parents until they fulfill these requirements. It is an informative discussion on different results of research papers about easy access to the credit market for reducing child labour.

Frölich and Landmann (2015) find that economic shocks like sickness and accidents are the reasons for the reduction in households' income. Shocks compel parents to push their children into child labour. Health insurance can be helpful to decrease child labour. It is also a fact that a rise in medical costs pushes children into child labour. Data were taken from Hyderabad (Pakistan). This data consist of all clients from 13 NRSP branches who have their credit appraisal in September/ October 2009. The Ordinary Least Squares approach was applied. There are few studies which show the impact of conditional and Unconditional cash transfer Programmes on schooling and child labour. In our observation, mostly people are not aware of how to get a loan for the education of their children.

Chaudhry and Khan (2002) point out the main factors of child labour in the city Dera Ismail Khan. This study shows that poverty, schooling system, traditional aspects, adult literacy and family size are the major factors of child

labour. The interviews of 125 working children ages between 5-14 are conducted at different working places in City Dera Ismail Khan. This study investigates that poverty, family size, schooling system and illiteracy of parents are contributing to the issue of child labour but poverty is the main cause of it. Further, they explain at present, the child has economic value. So, by making the best use of their economic assets, parents want to maximize their utility for the satisfaction of basic needs. In our critical point of view, this study has almost focused on the individual effects of variables on child labour. The combined (interaction) effects can much more effective and significant than individual effects on child labour.

Ahmed (2012) investigates the impact of free education on child labour. The data have been taken from MICS, 2007-08. The Two-Stage Least Square technique was applied. The results suggest that schooling is a significant factor in reducing child labour. So schooling is an important factor to reduce child labour as an end onto itself because schooling has positive spillover effects as it reduces child labour events. These results call for the government to carry on spending on these Programmes such as the PESRP, that decrease the expenditure on education and rise the fascination with schooling. In our critical point of view, School Enrolment (endogenous variable) may be correlated to the error term: School enrolment can also be correlated with Tuition Support and Financial Support (BISP).

Lodhi et al. (2011) analyze the impact of different characteristics of individuals and households on child schooling and child labour. They divide schooling into two different categories. One is the enrolment of children in secular educational institutions and the second is religious education institutions. Data have been taken from field surveys. This data was taken from 40 villages in four provinces of Pakistan. They used the Multinomial Probit Model for this analysis. Results show that parents' awareness has a significant impact on enrolment in secular school attendance, education in religious institutions and child labour. Furthermore, they investigate the impact of child participation in different activities region wise and child gender wise. Thus, this study also shows that the probability of going to secular schools is lower among girls as compared to boys.

Ray (2001) simultaneously Modeled hours of child labour, educational attainment, and household poverty using Nepalese and Pakistani data. He applied the 3SLS technique in his study. He found an inverse association between schooling experience and hours of Children's Work. Further, this study also shows that poverty has a positive impact on hours of Children's Work.

Duraisamy (2000) examines the factors of child education and work. He uses large-scale data on the national survey level for children. His main contribution is including child idleness in his study into the rigorous econometric analysis. Child schooling and work are also included in this study. The logistic regression Model is used in this analysis. The empirical estimates based on both the dichotomous and trichotomous choice framework Models inferred that educated parents have a positive impact on child schooling and a negative impact on children's work. Moreover, according to his findings, mother's education has a strong impact on increasing schooling and decreasing child labour.

Edmonds and Pavcnik (2005) investigate that the improvement in the growth rate of an economy reduces child labour. The progress in the growth rate of a country increases the living standard of households. This process takes a lot of time. Further, this study explains that the development of a country is the best cure for child labour. They discuss some survey evidence on child labour. They argue that other available data on child labour do not show detailed activities of child labour. These datasets have many drawbacks related to data collection. This study analyses The data of 3,347 panel households with children aged group 06-15 from the Vietnam Living Standards Surveys (VLSS) have been used in this study. They used two rounds of these surveys. The first round is from 1992 to 1993 and the second round is from 1997 to 1998. They used Blinder – Oaxaca methodology for panel data analysis.

2.1 CONCLUSION

This chapter concludes that there are different determinants of Children's work, schooling and idleness. Poverty is the main cause of decreasing the enrolment of children in schools and increasing child labour. Other reasons for dropping out the children from school are lack of attention of the child in the study, large family size, death of parents and behavior of the teachers. Most of the children are working in the agriculture sector without any wage. This is an exploitation of children. The exploitation of gender can be seen in these studies. This is another type of self-exploitation that can be seen in a household by elder members. Most research studies have been carried out on the determinants of child labour by using primary data for one particular district or division of Pakistan. Previous studies have almost focused on the individual effects of different variables on child labour. There is no study to date that can investigate the effect of interaction among different social

supports, demographical and social characteristics of households. Very few research studies have been carried out on the working conditions and environment during child labour. However, there is a need for a study which can focus on the interaction effect among different social supports, demographical and social characteristics of households because no study to date can analyze the dataset MICS, 2017-18 to even determine the individual effects of these characteristics on child schooling, work and idleness. Tuition support and Financial support (BISP) can be used as instrumental variables of endogenous variable school enrolment. In other words, this endogenous variable may be correlated with Tuition support and Financial support (BISP).

CHAPTER 3

THEORETICAL FRAMEWORK AND METHODOLOGY

3.1 THEORETICAL FRAMEWORK

In this section, the theoretical framework of this study is being explained.

Economic theory generally considers child labor as labour supply. It is assumed that, a single household unit, where parents maximize their utility over present consumption, schooling of children, and leisureliness. Parents have an inelastic supply of labour. This supply of labour produces an external income. It is assumed that fertility is fixed as a single child and children's involvement in education has a binary status of two opposite choices i.e. whether a child is engaged in schooling or not. Hence, the household faces the income constraint which is the total household income. This total household income is the sum of adult income and the income from child labour by subtracting the direct cost of children's education. The investment of parents in the schooling of children will be continued up to the point where the marginal costs of a time of child in school (including foregone earnings from work) equal the marginal benefits. (Cigno and Rosati, 2005; Edmonds, 2008).

3.1.1 The Supply of Labour

The number of hours a worker is willing to do and capable to work in a given time period is called the supply of labour. Income and substitution effects are the supply of an individual. Changes in income, population and expectations are three main factors affecting the supply of labour.

3.1.2 Theories of the Supply of Child Labor

In this chapter, supply side factors of child labor are being provided. Firstly, the theory of household decision making will be considered here in a perfectly competitive context. After that, we will discuss other theories of child labour and household.

Rosato and Cignati (2000), Pörtner (2001) and Rosenzweig and Evanson (1977) expressed a basic Model for Household Decision Making. Schultz (1997) further summarized the same Model. According to this Model, the household's maximize utility is defined by a function; the household's maximize utility is a function of (i) the frequency of children, (ii) child education, (iii) leisure time for child, (iv) leasure of parents, and (v) aggregate consumption of goods.

Two factors produce these goods: the first is composite commodity bought from the market and the second is the time interval spent by members of a household. The sources of income of a household are those products which produced by a household for getting money or involvement in labour for getting wage. Parents and children work tighter to produce goods. Initially, markets are completely competitive for capital, goods, and labor. The allocation of father's time is concerned with market work and leisure. The allocation of mother's time is concerned with bringing up the child, producing goods at home for selling and work at the market. Whereas the allocation of child's time is concerned with producing goods at home for selling, work at the market, schooling, and leisureliness. If the income of the father increases, the implicit price of his leisure and household's income will also increase. In this case, if the child is a normal good, the education of child will increase. If the income of the mother increases, the opportunity cost of birth will also increase. In this case, the family size becomes decrease. This decrease in family size will increase the schooling of child. Thus, increase in the income of parents will rise schooling at all.

3.1.3 Household Budget Constraints

Parents want to provide education to their children but lack of money can be a hurdle. If the parents do not have access to the credit market for future income, it can be difficult for them to provide better facilities for getting education to their children. As it happens, for two reasons spending level of money on the eldest and the youngest baby can be higher than the middle child. Firstly, poor families do not invest on their children, until they become able to work (Cigno and Rosati, 2000). When the eldest child of a family earns, it increases the income of that household. This increment in household's income brings opportunities for the youngest child to spend on his education. Secondly, a small family has more time to spend on the eldest and the youngest baby as compared to middle children (Birdsall, 1991).

3.1.4 Returns to Scale in Household Production

Children have given different abilities by birth. So, parents assign different tasks to their children according to their skills. These tasks can be consisting of learning skills, household chore activities, schooling and economic activities. Similarly, parents can be differentiating their investment in children. It may be risky for poor parents to provide education to their children due to economic shocks. So, some of the children may be chosen to get some skills that have future value: on-the-job training. Some of the children may be chosen to get an education or laboring (Levison, 1991).

3.1.5 Demand Side Factors of Child Labor

The theory of 'nimble fingers' argues that children are involved in work because of the existence of particular types of production in which children have comparative advantage. Children work more due to higher wages. This theory suggests the position of child labour in labour market (Tuttle,1999). Marx (1867) argus that the small stature of a child's body and child's hands make them particularly effective at performing certain tasks. Many new studies exposed new directions of causality by explaining the demand for child labour. Following these new studies in the same occupation, generally working children get less wage than adults. This shows that children can easily convene for lower wage rate. In this case, it becomes the cause for cost savings for firm (ILO, 1996).

The studies of ILO (1996) on the hand woven carpet and glass bracelet industries have disproved the theory of nimble fingers. These studies novelties that most of the children are working in carpet and glass bracelet industries less wage than adults or without any wage. This is an exploitation of children. The exploitation of gender can be seen in agricultural sector.

Children are involved in the worst forms of child labour as work in hazardous, face the risk of being exposed to dangerous tools and carrying heavy loads during work. This is another type of exploitation of children. Thus, all studies refuse the theory of nimble fingers of child labour.

Admassie (2002) creates a comparable explanation regarding the issue of child labor in Ethiopia. He explains that child labour can increase the share of GDP from the agriculture sector. This factor can increase child labour. Further, he argues that a 'backwards and labor intensive' production system is the reason for the greater demand for Children's Workers.

3.2 CONCEPTUAL MODEL OF THE STUDY

Drawing upon our discussion in the previous section, we can identify the effects of different interactions between financial and social supports, demographical and social characteristics of households. These interaction effects when combined are much more effective and significant than individual effects on children's schooling, work and idleness. (Figure 3.1)

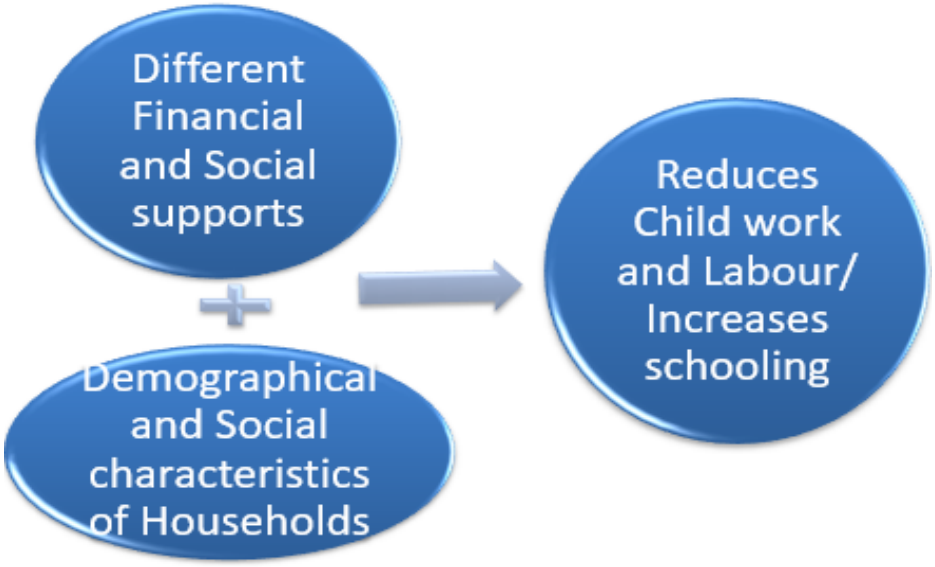

Figure 3.1: Interaction Effects among Variables

3.3 DATA AND METHODOLOGY

3.3.1 Data Source

For this study, we used the dataset of MICS for Punjab Multiple Indicator Cluster Survey (MICS) 2017-18. This dataset was conducted by the Bureau of Statistics, Government of the Punjab, Planning and Development board. It was collected by the technical support of the United Nations International Children's Emergency Fund (UNICEF). It has 183 socio-economic and 27 national indicators which produce statistically sound and internationally comparable estimates. Before analysis, this dataset consists of 53,840 sampled households (2692 clusters) and 99,151 children aged 5-17 with a 97.9 percent response rate. Punjab Multiple Indicator Cluster Survey (MICS) conducted this data at division and district levels, to make it possible to control division and district level effects on child labour. Therefore, this data has provided an in-depth analysis that has considerably higher explanatory power to get results by the large sample size.

3.3.2 Methodology

We applied Logistic Regression in this study due to the nature of the data. In one domain of this study, the dependent variable is categorical so Logistic Regression was applied. The binary Logistic technique has been applied to analyze the determinants of Children's Work, Schooling and Idleness. We also used Two-Stage Least Squares Technique for treating the School Enrolment variable as an endogenous variable. Enrolment of children in all schools is an Endogenous variable. Tuition support and Financial support (BISP) are instrumental variables of School Enrolment. School Enrolment is an Endogenous variable. This endogenous variable is correlated with the disturbance term.

Allison (1999) creates a response variable which has two categories. This dependent variable violates the assumptions related to normality and homoscedasticity of error term for the ordinary least squares (OLS) Model. Thus, in the presence of these violations of standard error estimates will not remain consistent. It will not remain standard error's true estimate. In the same way, the estimates of the coefficient will not be efficient. Moreover, if we apply the OLS Model in this situation, we will get the predicted values which exist beyond the possible range of the probability (0,1). For that reason, we apply the Logistic regression Model because when the response variable has two categories. The logistic regression Model transforms the probability to odds. After getting the odds, it takes the logarithm of the odds. In this manner, it removes the upper and lower boundary of the probability.

This is the Model of Logistic Regression:

$$\log\left[\frac{pi}{1-pi}\right] = \alpha + \beta 1 xi1 + \beta 2 xi2 + \cdots + \beta k xik$$

Here, i represents the individual,

pi denotes the probability of the event happening,

pi denotes the probability of the event not happening.

pi/1-pi represents the ratio of the odds of the events.

The left-hand side impression of this Model is the log-odds, or the logit.

The right-hand side of this Model, α denotes the intercept, β denotes the regression coefficient, and x denotes the independent variable.

If we observe the above Model, the right-hand side of this logistic Model resembles the linear regression Model in terms of independent variables. Alike linear regression, logistic regression has a capability to deal with continuous and categorical independent variables both. Foremost, it is comprised of the easiest procedure for logistic regression Models by using statistical software. Interpretation of logistic regression results is more complicated and less intuitive as compared to linear regression.

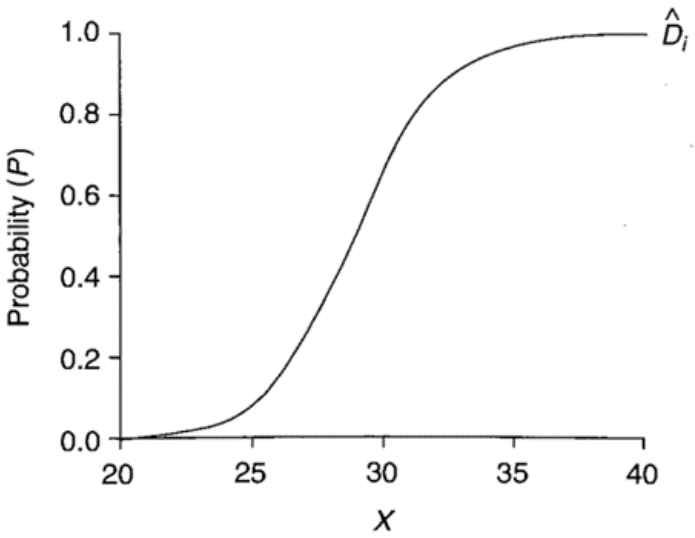

Figure 3.2: Limited Dependent Regression Model

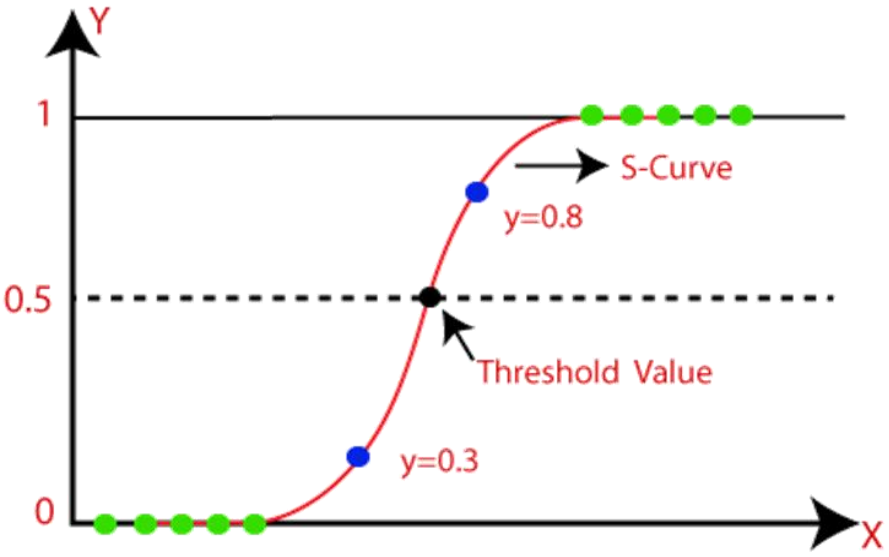

Figure 3.3: Limited Dependent Regression Model

Figures 3.2 and 3.3 show that an odds Ratio greater than 1 shows that the event is more likely to occur in the first group (YES). And an odds ratio less than 1 shows that the event is less likely to occur in the first group (YES).

The equation for logistic regression is:

$$\log\left[\frac{y}{1-y}\right] = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + \cdots + b_nx_n$$

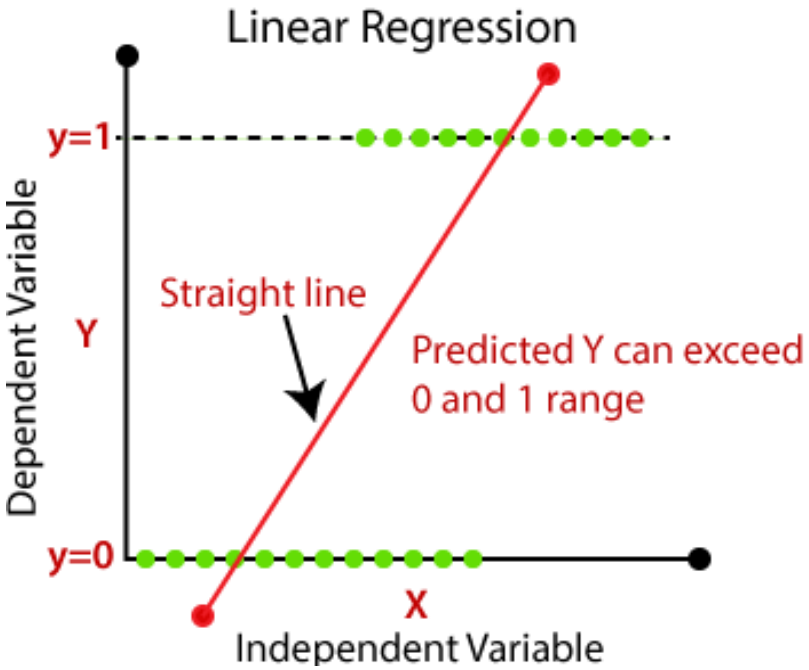

Figure 3.4: Linear Regression Model

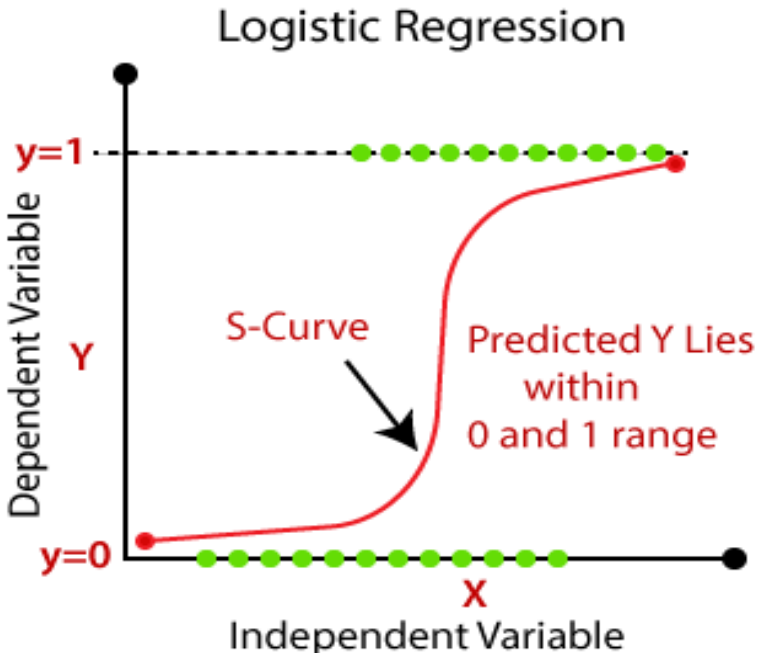

Figure 3.5: Limited Dependent Regression Model

Figures 3.4 and 3.5 portray the logistic Model. These figures show the 0,1 boundary problem because:

When probability Pi goes near to 0, the odds will also approach to 0, here logit (ln(0)) will be – ∞ .

When probability Pi goes near to 1, the odds will approach to + ∞, here logit (ln)(1)) will be + ∞

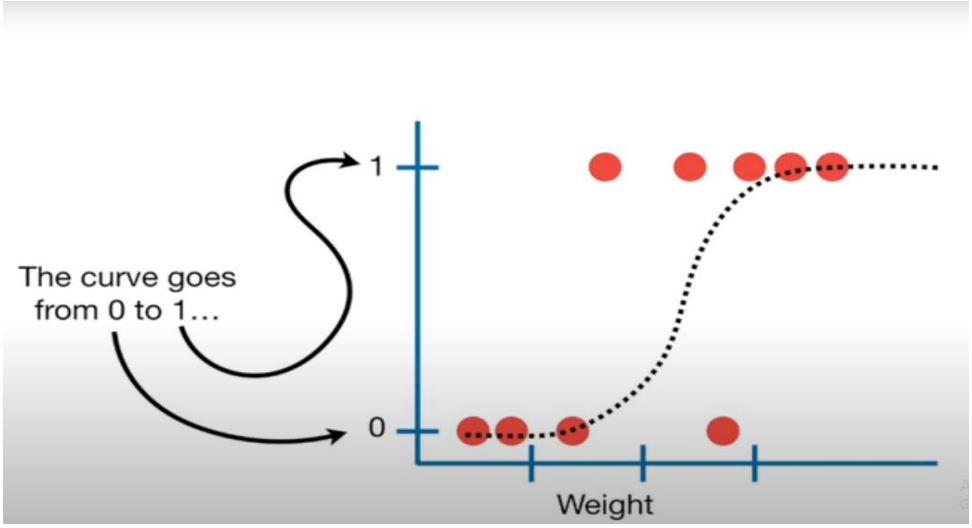

Figure 3.6: Logistic Regression Model (a)

Figure 3.6 shows the logistic Model. It resolves the 0,1 boundary problem.

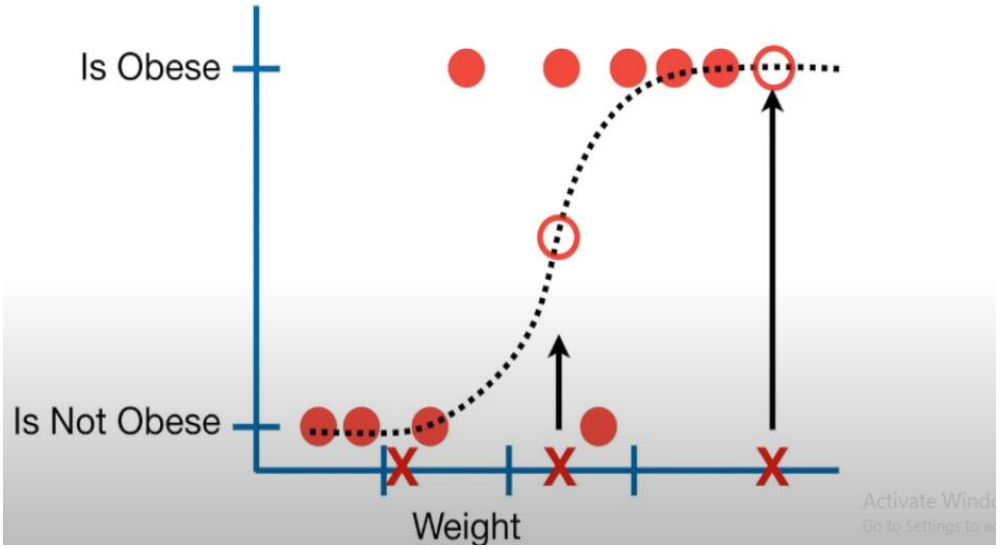

Figure 3.7: Logistic Regression Model (b)

Figure 3.7 shows that estimation of logit Model by applying the maximum-likelihood method.

3.3.3 Why cannot we apply Linear Regression for classification in this study?

Figure 3.8 indicates the two main reasons that explain why we cannot apply Linear Regression for classification in this study. The ordinary least square model handles continuous values only on left-hand side. While classification problems deal with discrete values and categories.

3.3.4 A Bird's-Eye View of the Dissimilarities between the Ordinary Least Square Model and the Logistic Regression Model

We use Linear regression for the prediction of the continuous dependent variable via a specified set of independent variables. If the dependent variable is categorical, we use Logistic Regression for the prediction of categorical dependent variable via a specified set of independent variables. In the OLS Model, we need to get the best fit line in linear regression. So that we can predict with the help of it. While in the logistic model, we need to get a S-curve in Logistic Regression. So that we can make classification of given sample. In OLS Model, for estimation of accuracy, we apply the Least Square estimation method. Whereas in Logistic Regression Model, we apply the Maximum likelihood estimation method. The problem of collinearity exists between the explanatory variables in Linear Regression but Logistic Regression is free from this problem.

3.4 ESTIMATION STRATEGY FOR TWO-STAGE LEAST SQUARES MODEL

One of the assumptions of standard linear regression Model is that the error term is not correlated with the independent variable(s). If this relationship exists, estimates will not remain consistent. In the same way, the estimates of the coefficient will not be efficient. That is why we use the Two-stage least-squares regression technique for estimation. This technique or methodology uses instrumental variables. These instrumental variables do not have any correlation with the error terms to estimate the value of the problematic independent variable(s): this is the first stage. Afterward, these estimated values after removing the biases effects are regressed in the OLS Model of the dependent variable: this is called the second stage. Now, the results of these estimates will be optimal and unbiased. Thus, Two-stage least-squares regression technique is used for getting consistent, unbiased and reliable

estimates. Our study also needs such a model to get optimal results. That is why we also applied this technique in our study according to the nature of our data.

3.4.1 Estimation Strategy

$$(Child\ Labour\ Hours)\ ij = \beta o + \beta 1\ (Rank\ of\ the\ children)ji + \beta 2\ (Father\ alive)ji + \beta 3\ (Gender\ of\ Child)ji + \beta 4\ (School\ Enrolment)ji + \varepsilon 1ji \quad (1)$$

$$(School\ Enrolment)\ ij = \gamma o + \gamma 5\ (BISP)ji + \gamma 6\ (Tuition\ Support)ji + \varepsilon 2ji \quad (2)$$

where βq and γr are coefficients, ε1ij and ε2ij are error terms.

i = subscript of ith value of Child Characteristics

j = subscript of jth value of HH Characteristics

3.4.2 Dependent Variable

(CHILD LABOUR HOURS) ij = Child labour hours of ith Child, jth Household.

Equation (2) shows the empirical Model specified. It has a problem of simultaneity bias. We can see in the above Model, Tuition and Received BISP are correlated with the dependent variable child labour but at the same time, these independent variables (Tuition support and Received BISP) are also correlated with school enrolment variable. Parents maximize their utility simultaneously over present consumption, schooling of children, and leisureliness.

Below is a condition of OLS which is applied to get true estimates from equation (2).

$$cov\ (X, \varepsilon) = 0 \quad (3)$$

Equation (3) identifies a Simultaneity which violates the identification condition. Thus, if we apply OLS under this simultaneity, this will estimate biased and inconsistent estimators. In the case of having simultaneity in the

model as in equation (2), we can estimate consistently using the instrumental variable (IV) approach. We suggest that received BISP by the household and school Tuition support for children as instruments for the enrolment of children in schools. Here, the enrolment of children in all schools is an Endogenous variable. It is notable that Tuition support in all schools for children and received BISP are considered potential instruments for the enrolment of children in schools. Here enrolment of children in schools and hours of child labour are continuous variables.

3.5 BRIFE METHODOLOGY FOR ESTIMATING MPI

We calculated the Multidimensional Poverty Index (MPI). The Multidimensional Poverty Index (MPI) classifies multiple deprivations in education, health and standard of living, at the individual level. According to the deprivation of each person's household, every person is assigned a deprivation score in each of the 10 component indicators. For this Index, 100 percent is the maximum score; through each dimension is equally weighted (thus, 33.3 percent is the maximum score in each dimension). According to this methodology, there are three dimensions: education, health and standard of living. There are two indicators of education and health dimensions each, thus each component has worth 1/6 (or 16.7 percent). The dimension of standard of living has six indicators, thus each component has worth 1/18 (or 5.6 percent) (UNDP,2020). The deprivation indicators and its thresholds are provided in Table 3.1.

Table 3.1
Dimensions, Indicators, Cut-Offs and Weights for Calculation of MPI

Dimension	Indicators	Deprivation cut-off	Relative Weight
Health	Nutrition	If any adult (under 70 years of age) or child is undernourished in terms of weight for age or height for age. For MICS dataset, we are restricted to taking children under age 5. Thus, If any child is undernourished in terms of height for age.	1/6=16.7%
	Child Mortality	If any child has died in the family.	1/6=16.7%
Education Dimension	Years of Schooling	No household member age 10 years or above has completed five years of schooling.	1/6=16.7%
	Indicators	Deprivation cut-off	Relative weight
	Child School Attendance	Deprived if any school-aged child is not attending school in years 1 to 8.	1/6=16.7%
Standard of living	Electricity	Deprived if the household has no electricity	1/18=5.6%
	Drinking water	Deprived if the household has no access to an improved source of water for drinking (No access to tap water, hand pump, motor pump, protected well, mineral water or clean water for drinking).	1/18=5.6%
	Sanitation	Deprived if the household members do not have access to adequate sanitation (No facility of Flus to Piped Sewer System, Flush to the septic tank, Flush to Pit Latrine, Flush to Open Drain, Ventilated Improved Pit Latrine).	1/18=5.6%
	Housing	Deprived if the household has natural or rudimentary roof or walls or natural floors.	1/18=5.6%
	Cooking fuel	Deprived if the household cooks with 'solid fuel', e.g. dung, wood or charcoal.	1/18=5.6%
	Assets	Deprived if the household does not own more than one of these assets: radio, TV, telephone, computer, bicycle, motorbike, animal cart or refrigerator, and does not own a car or truck.	1/18=5.6%

For identifying the multi-dimensionally poor, we sum the deprivation scores for each household to find the household deprivation which is denoted by (c). We use the weighted indicators (a cut-off of 33.3 percent or one-third of the weighted indicators) to make a distinction between the poor and the non-poor. First of all, we need a deprivation score(s) of each household to

calculate MPI. For the calculation of the deprivation score of each household, we identify the deprived and non-deprived households or individuals according to the available facilities at an individual level or household level (definitions of these diminutions and indicators are given in the above table). After that, we assign the weights. In this way, we will get a deprivation score(s) for each household. To make a differentiation between Multi-dimensionally poor and non-poor, we create a cut-off of 33.3 percent or one-third of the weighted indicators. After that, we get the 'H' headcount ratio and 'A' intensity of poverty to calculate MPI.

Here, 'q' shows the number of multi-dimensional poor people. 'n' identifies the total population. 'H' reflects the proportion of the population who are multi-dimensionally poor, it is called the headcount ratio: H = q/n

While A shows the ratio of the weighted element indicators where, on averagely, poor people are deprived. It is called the intensity of poverty. To get the intensity of poverty 'A', we calculate the summation of deprivation scores of only poor households and then divided it by the number of poor people (those with a deprivation score s ≥ 33.3 percent). where si shows the deprivation score, which the ith multidimensionally poor person has (UNDP,2020).

$$A = \frac{\sum_1^q si}{q}$$

The multiplication of H and A is called MPI.

*MPI = H * A.*

We calculated the deprivation score of each household by identify the deprived and non-deprived households or individuals according to the available facilities at an individual level or household level. After that, we assigned the weights. In this way, we got a deprivation score(s) for each household (UNDP, 2020). We created the household's statuses according to deprivation scores. We created multiple categorical independent variable with the name of the economic statuses of households. We observed the impact of these statuses on children's work, schooling and idleness by using Logistic Regression Model.

3.6 THE MDEL AND DESCRIPTION OF VARIABLES

3.6.1 Description of Variables

In this section, we explained the variables in detail.

3.6.2 Dependent Variables for Logistic Regression Models

- Enrolment of the child in GOVT./ PUBLIC, PRIVATE, RELIGIOUS/ MISSIONARY, OTHER schools which are measured through dummy variable; 0 for not enrolment of the child in school, 1 for enrolment of the child in schools.

- Involvement of children in paid economic activities which are measured through a dummy variable; 0 for not the involvement of children in all paid economic activities, 1 for the involvement of children in all paid economic activities.

- Involvement of children in economic and household chore activities which are measured through a dummy variable; 0 for not the involvement of children in all economic and household chore activities, 1 for the involvement of children in all economic and household chore activities. **Household chore activities:**1. Involvement of children in any work or help on (his/her) own or the household's plot, farm, food garden or looked after animals. For example, growing farm produce, harvesting, or feeding and grazing animals. 2. Involvement of children in a family business or a relative's business with or without pay, or run (his/her) own business. **Paid economic activities:** 1. Involvement of children in producing or selling articles, handicrafts, clothes, food, or agricultural products 2. Involvement of children in any activity in return for income in cash or in-kind.

- Children's status neither going to school nor doing work (Idleness) which is measured through a dummy variable; 1 for children who neither go to school nor do work, 0 for otherwise.

We have selected children aged cohort 05-17 for this study because this MICS dataset does not provide any information on children less than 5 years of age related to their schooling, work and idleness. 'The Majority Act of 1875' has declared a child under 18 years as a minor or not an adult in Pakistan. We are finding the factors affecting miners' or children's schooling and work. So, we have selected children aged 05-17.

3.6.3 Independent Variables

- Wealth Index Quintile of households which are measured through a dummy variable; 1 for the Poorest Wealth Quintile, 2 for the Second Wealth Quintile, 3 for Middle Wealth Quintile, 4 for the Fourth Wealth Quintile and 5 for the Richest Wealth Quintile.

- Education of the mother which is measured through a dummy variable;0 for less than Primary, 1 for Primary, 2 for Middle, 3 for Secondary and 4 for Higher.

- Education of the father which is measured through a dummy variable; 0 for less than Primary, 1 for Primary, 2 for Middle, 3 for Secondary and 4 for Higher.

- Multidimensional Poverty (MPI), it is a continuous variable that shows different continuous values of MPI (by following the methodology given by UNDP, 2020).

- The Gender Parity Index (GPI). which is measured through a dummy variable;1 for gender parity favors males, 2 for gender parity favors females and 3 for equality between males and females (by following the methodology given by UNESCO, 2008)

- Size of Family which is measured through a dummy variable; 0 for Large Size of Family ≥ 7 members, 1 for Small Size of Family ≤ 6 members (by following the criteria given by Household Integrated Economic Survey, 2018)

- Gender of children which is measured through the dummy variable; 0 for females, 1 for males.

- Economic Statuses of Household which are measured through the dummy variable; 1 for Extremely poor, 2 for Poor, 3 for the Vulnerably Poor and 4 for Rich (by following the methodology given by UNDP, 2020).

- Deprivation Score of Household which is measured through a dummy variable; 1 for Poor (Score ≥ 0.333, 2 for Rich (Score < 0.333) (by following the methodology given by UNDP, 2020).

- Received Remittances which are measured through a dummy variable; 0 for not Received Remittances, 1 for Received Remittances.

- Received Financial Support through any Programmes which is measured through a dummy variable; 0 for not Received Financial Support through any Programme, 1 for Received Financial Support through any Programme.

- Received Financial Support through BISP which is measured through a dummy variable; 0 for not Received Financial Support through BISP, 1 for Received Financial Support through BISP.

- Received Financial Support through WATAN CARD which is measured through a dummy variable; 0 for not Received Financial Support through WATAN CARD, 1 for Received Financial Support through WATAN CARD.

- Received Financial Support through BAIT UL MALL which is measured through a dummy variable; 0 for not Received Financial Support through BAIT UL MALL, 1 for Received Financial Support through BAIT UL MALL.

- Orphanhood which is measured through a dummy variable;1 for both father and mother not alive, 0 for both father and mother alive.

- Regions of Punjab Province which is coded through dummy variable; 1 for Urban, 0 for Rural.

- Children's Age Groups which are measured through a dummy variable;1 for Children aged 05 – 09, 2 for 10-14 and 3 for Children aged 15 -17.

- Districts of Punjab Province which is coded through dummy variables.

- Rank of the children which are measured through a dummy variable;1 for 1st Rank, 2 for 2nd Rank, 3 for 3rd Rank, 4 for 4th Rank, 5 for 5th Rank, 6 for 6th Rank,7 for 7th Rank and 8 for 8th Rank.

3.7 BINARY LOGISTIC REGRESSION MODELS

There are the number of factors that can affect the schooling, work and idleness of children. Here, we regressed some important variables or factors of children, their parents and households that affect schooling, work and idleness.

3.7.1 Model 1

(School Enrolment)ji = β_o + β_1(Wealth Index Quintile of HH)i + β_2 (Mother's Education)ji + β_3 (Father's Education)ji + β_4(Gender of Child)ij + β_5 (Family Size)ji + β_6 (Rank of the children)ji + β_7 (Orphanhood)ji + β_8 (Age groups of child)i + β_9 (Region)i + β_{10} (Economic Statuses of HH)i + β_{11} (HH Deprivation Score)i + β_{12}(Remittances)ji + β_{13} (Financial Support through any Programme)ji + β_{14}(Districts)i + β_{15} (BISP)ji + β_{16} (WATAN CARD)ji + β_{17} (BITUMAL)ji + β_{18}(MPI Division wise)i + β_{19} (GPI Division wise)i + β_{20} (Financial Support through Any Programmes * Districts)ji + β_{21} (Financial Support through Any Programmes * Wealth index quintile of HH)ji + β_{22} (BISP* Wealth index quintile of HH)ji + β_{23} (BISP* Districts)i + β_{24} (GPI Division wise * Age groups of child)i

where

i = subscript of ith value of Child

j = subscript of jth value of Household

β, α, γ, ϕ, and £ are coefficients.

In this Model, we want to show the effects of these factors on Child Schooling. We regressed seven regressions from this model to avoid the risk of multicollinearity. Each model has seven regressions. The above model shows the all independent and dependent variables. We did not regress all these independent variables on dependent variables due to the risk of multicollinearity. We will explain further the reasons for regressing each separate regression.

Regression 1

(School Enrolment)ji = β_o + β_1(Wealth Index Quintiles of HH)i + β_2 (Mother's Education)ji + β_3 (Father's Education)ji + β_4(Gender of Child)i + β_5 (Family Size)ji + β_6 (Rank of the children)ji + β_7 (Orphanhood)ji + β_8 (Age groups of child)i + β_9 (Region)i + β_{10}(Remittances)ji + β_{11}(Financial Support through Any Programmes)ji+ β_{12}(Districts)i

In this regression, we did not include interactions and some main effects of independent variables due to the following reasons. Firstly, this regression has main effects only, we have excluded the interaction effect because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between the variables Financial Support through any Programme and the Wealth Index Quintile of households can correlate with the main effects of Financial Support through any Programme and the Wealth Index Quintiles of households. Secondly, we have omitted the independent variable Economic Statuses of households because we have already included the variable Wealth Index Quantiles of households in this regression because which can be a substitute for the variable Deprivation Scores of households. We also have excluded the variables 'Gender parity index' and 'MPI' in this regression because these variables are created with the help of the District variable and we are regressing here in this regression District variable as an independent variable. The variables BISP, WATAN CARD and BITUMAL are also being excluded because there is a variable in this regression Financial Support through any Programme which is computed by adding the variables BISP, WATAN CARD and BITUMAL. That can create multicollinearity in this regression so we have excluded these variables.

Regression 2

(School Enrolment) ij = $\beta o + \beta_1$ (Gender of Child)i β_2 (Region)i + β_3 (Mother's Education)ji + β_4 (Father's Education)ji + β_5 (Orphanhood)ji + β_6 (Rank number of the children)ij + β_7 (Family Size)ji + β_8(Remittances)ji + β_9 (Age groups of child)i + β_{10} (BISP)ji + β_{11} (WATAN CARD)ji + β_{12} (BITUMAL)ji + β_{13} (MPI Division wise)i + β_{14} (GPI Division wise)i + β_{15} (HH Deprivation Score)i+ β_{16} (Economic Statuses of HH)i

Firstly, in this regression, almost all variables are the same as in 1st regression but we included the independent variables BISP, WATAN CARD and BITUMAL. Here we have omitted the variable Financial Support through any Programmes because this variable is created by combining all the financial supports through BISP, WATAN CARD and BITUMAL. In this regression, we want to see the separate effects of these supports. So the variables Financial Support through any Programmes and BISP, WATAN CARD and BITUMAL can create a multicollinearity problem in this regression. Secondly, this regression has main effects only, we have excluded the interaction effect because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interactions of BISP, WATAN CARD and BITUMAL with Wealth Index Quintile of households can correlate with the main effects of Financial Support through BISP, WATAN CARD, BITUMAL

and Wealth Index Quintile of households. Thirdly, we have omitted the independent variable Wealth Index Quintile of households because we have already included the variable Deprivation Scores of households in this regression which can be a substitute for the variable Economic Statuses of households. We also have included the variables Gender parity index and MPI in this regression because these variables are created with the help of the District variable, now district variable does not exist here so we can regress these variables in this regression.

Regression 3

(School Enrolment)ji = $\beta o + \beta_1$ (Mother's Education)ji + β_2 (Father's Education)ji + β_3(Gender of Child)i + β_4 (Family Size)ji + β_5 (Rank of the children)ji + β_6 (Orphanhood)ji + β_7 (Age groups of child)i + β_8 (Region)i + β_9 (Remittances)ji + β_{10} (Districts)i+ β_{11} (Financial Support through Any Programmes * Wealth Index Quintiles of HH)ji

In this regression, we have included interaction and some main effects of independent variables. This regression has main effects and one interaction effect. We have excluded the main effects of only those variables which have an interaction effect in this regression because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between Financial Support through any Programmes and Districts can correlate with the main effects of Financial Support through any Programmes and Wealth Index Quintiles. In simple words, we are regressing 1st regression with our 1st interaction.

Regression 4

(School Enrolment)ji = $\beta o + \beta_1$(Wealth Index Quintiles of HH)i + β_2 (Mother's Education)ji + β_3 (Father's Education)ji + β_4(Gender of Child)i + β_5 (Family Size)ji + β_6 (Rank of the children)ji + β_7 (Orphanhood)ji + β_8 (Age groups of child)i + β_9 (Region)i + β_{10} (Remittances)ji i+ β_{11} (Financial Support through Any Programmes * Districts)i

In this regression, we have included interaction and some main effects of independent variables. This regression has main effects and one interaction effect. We have excluded the main effects of only those variables which have an interaction effect in this regression because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between Financial Support through any Programmes and the Districts can correlate with the main effects of Financial Support through any Programmes and the Wealth index quintile of households. In simple words, we are regressing 1st regression with another 2nd interaction.

Regression 5

(School Enrolment) $_{ij}$ = βo + β_1 (Gender of Child)$_i$ β_2 (Region)$_i$ + β_3 (Mother's Education)$_{ji}$ + β_4 (Father's Education)$_{ji}$ + β_5 (Orphanhood)$_{ji}$ + β_6 (Rank number of the children)$_{ij}$ + β_7 (Family Size)$_{ji}$ + β_8(Remittances)$_{ji}$ + β_9 (Age groups of child)$_i$ + β_{10} (WATAN CARD)$_{ji}$ + β_{11} (BITUMAL)$_{ji}$ + β_{12} (MPI Division wise)$_i$ + β_{13} (GPI Division wise)$_i$ + β_{14} (HH Deprivation Score)$_{ii}$+ β_{16} (BISP* Wealth Index Quintile of HH)$_i$

In this regression, we have included interaction and some main effects of independent variables. This regression has main effects and one interaction effect. We have excluded the main effects of only those variables which have an interaction effect in this regression because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between the BISP and Wealth Index Quintile of households can correlate with the main effects of Financial Support through BISP and Wealth Index Quintile of households. In simple words, we are regressing 2nd regression with another 3rd interaction.

Regression 6

(School Enrolment) $_{ji}$ = βo + β_1(Wealth Index quintile of HH)$_i$ + β_2 (Gender of Child)$_i$+ β_3 (Region)$_i$ + β_4 (Mother's Education)$_{ji}$ + β_5 (Father's Education)$_{ji}$ + β_6 (Orphanhood)$_{ji}$+ β_7 (Rank number of the children)$_{ji}$ + β_8 (Family Size)$_{ji}$ + β_9 (Remittances)$_{ji}$ + β_{10} (Age groups of child)$_i$ + β_{11} (WATAN CARD)$_{ji}$ + β_{12} (BITUMAL)$_{ji}$ + β_{13} (MPI Division wise)$_i$ + β_{14} (GPI Division wise)$_i$ + β_{15} (HH Deprivation Score)$_i$ + β_{16} (BISP * Districts)$_{ji}$

In this regression, we have included interaction and some main effects of independent variables. This regression has main effects and one interaction effect. We have excluded the main effects of only those variables which have an interaction effect in this regression because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between Financial Support BISP and Districts can correlate with the main effects of Financial Support through BISP and Districts. In simple words, we are regressing 2nd regression with another 4th interaction. We also excluded GPI variable due to the risk of multicollinearity.

Regression 7

(School Enrolment)$_{ji}$ = βo + β_1(Wealth Index Quintiles of HH)$_i$ + β_2 (Mother's Education)$_{ji}$ + β_3 (Father's Education)$_{ji}$ + β_4(Gender of Child)$_i$ + β_5 (Family Size)$_{ji}$ + β_6 (Rank of the children)$_{ji}$ + β_7 (Orphanhood)$_{ji}$+ β_8 (Region)$_i$

$+ \beta_9$ (Remittances)$_{ji}$ + β_{10}(Financial Support through Any Programmes)$_{ji}$+ β_{11} (GPI Division wise * Age groups of child)$_i$

In this regression, we have included intention and some main effects of independent variables. This regression has main effects and one interaction effect. We have excluded the main effects of only those variables which have an interaction effect in this regression because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between the variables GPI division wise and the age groups of the child can correlate with the main effects of GPI division wise and age groups of child. In simple words, we are regressing 1nd regression with another 5th interaction.

3.7.2 Model 2

(Work)$_{ji}$ = αo + α_1(Wealth Index Quintile of HH)$_i$ + α_2 (Mother's Education)$_{ji}$ + α_3 (Father's Education)$_{ji}$ + α_4(Gender of Child)$_{ij}$ + α_5 (Family Size)$_{ji}$ + α_6 (Rank of the children)$_{ji}$ + α_7 (Orphanhood)$_{ji}$ + α_8 (Age groups of child)$_i$ + α_9 (Region)$_i$ + α_{10} (Economic Statuses of HH)$_i$ + α_{11} (HH Deprivation Score)$_i$ + α_{12}(Remittances)$_{ji}$ + α_{13} (Financial Support through Any Programmes)$_{ji}$ + α_{14}(Districts)$_i$ + α_{15} (BISP)$_{ji}$ + α_{16} (WATAN CARD)$_{ji}$ + α_{17} (BITUMAL)$_{ji}$ + α_{18}(MPI Division wise)$_i$ + α_{19} (GPI Division wise)$_i$ + α_{20}(Financial Support through Any Programmes * Districts)$_{ji}$ + α_{21} (Financial Support through Any Programmes * Wealth index quintile of HH)$_{ji}$ + α_{22} (BISP* Wealth index quintile of HH)$_{ji}$ + α_{23} (BISP* Districts)$_i$ + α_{24}(GPI Division wise * Age groups of child)$_i$

In this model, we want to show the effects of these factors on Children's Work. We regressed seven regressions from this model to avoid the risk of multicollinearity. Each model has seven regressions. The above model shows the all independent and dependent variables. We did not regress all these independent variables on dependent variables due to the risk of multicollinearity. We will explain further the reasons for regressing each separate regression.

Regression 1

(Work)$_{ji}$ = αo + α_1(Wealth Index Quintiles of HH)$_i$ + α_2 (Mother's Education)$_{ji}$ + α_3 (Father's Education)$_{ji}$ + α_4(Gender of Child)$_i$ + α_5 (Family Size)$_{ji}$ + α_6 (Rank of the children)$_{ji}$ + α_7 (Orphanhood)$_{ji}$ + α_8 (Age groups of child)$_i$ + α_9 (Region)$_i$ + α_{10}(Remittances)$_{ji}$ + α_{11}(Financial Support through Any Programmes)$_{ji}$+ α_{12}(Districts)$_i$

In this regression, we did not include interactions and some main effects of independent variables due to the following reasons. Firstly, this regression has main effects only, we have excluded the interaction effect because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between the variables Financial Support through any Programmes and the Wealth Index Quintile of households can correlate with the main effects of Financial Support through any Programmes and the Wealth Index Quintiles of households. Secondly, we have omitted the independent variable Economic Statuses of households because we have already included the variable Wealth Index Quantiles of households in this regression because which can be a substitute for the variable Deprivation Scores of households. We also have excluded the variables 'Gender parity index' and 'MPI' in this regression because these variables are created with the help of the District variable and we are regressing here in this regression District variable as an independent variable. The variables BISP, WATAN CARD and BITUMAL are also being excluded because there is a variable in this regression Financial Support through Any Programmes which is computed by adding the variables BISP, WATAN CARD and BITUMAL. That can create multicollinearity in this regression so we have excluded these variables.

Regression 2

$(\text{Work})_{ij} = \alpha o + \alpha_1 (\text{Gender of Child})_i \ \alpha_2 (\text{Region})_i + \alpha_3 (\text{Mother's Education})_{ji} + \alpha_4 (\text{Father's Education})_{ji} + \alpha_5 (\text{Orphanhood})_{ji} + \alpha_6 (\text{Rank number of the children})_{ij} + \alpha_7 (\text{Family Size})_{ji} + \alpha_8 (\text{Remittances})_{ji} + \alpha_9 (\text{Age groups of child})_i + \alpha_{10} (\text{BISP})_{ji} + \alpha_{11} (\text{WATAN CARD})_{ji} + \alpha_{12} (\text{BITUMAL})_{ji} + \alpha_{13} (\text{MPI Division wise})_i + \alpha_{14} (\text{GPI Division wise})_i + \alpha_{15} (\text{HH Deprivation Score})_{i+} \alpha_{16} (\text{Economic Statuses of HH})_i$

Firstly, in this regression, almost all variables are the same as in 1st regression but we included the independent variables BISP, WATAN CARD and BITUMAL. Here we have omitted the variable Financial Support through any Programmes because this variable is created by combining all the financial supports through BISP, WATAN CARD and BITUMAL. In this regression, we want to see the separate effects of these supports. So the variables Financial Support through any Programmes and BISP, WATAN CARD and BITUMAL can create a multicollinearity problem in this regression. Secondly, this regression has main effects only, we have excluded the interaction effect because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interactions of BISP, WATAN CARD and BITUMAL with Wealth Index Quintile of households can correlate with the main effects of Financial Support through BISP, WATAN CARD, BITUMAL

and Wealth Index Quintile of households. Thirdly, we have omitted the independent variable Wealth Index Quintile of households because we have already included the variable Deprivation Scores of households in this regression which can be a substitute for the variable Economic Statuses of households. We also have included the variables Gender parity index and MPI in this regression because these variables are created with the help of the District variable, now district variable does not exist here so we can regress these variables in this regression.

Regression 3

(Work)ji = $\alpha o + \alpha_1$ (Mother's Education)ji + α_2 (Father's Education)ji + α_3(Gender of Child)i + α_4 (Family Size)ji + α_5 (Rank of the children)ji + α_6 (Orphanhood)ji + α_7 (Age groups of child)i + α_8 (Region)i + α_9(Remittances)ji + α_{10}(Districts)i+ α_{11}(Financial Support through Any Programmes * Wealth Index Quintiles of HH)$_{ji}$

In this regression, we have included interaction and some main effects of independent variables. This regression has main effects and one interaction effect. We have excluded the main effects of only those variables which have an interaction effect in this regression because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between Financial Support through any Programmes and Districts can correlate with the main effects of Financial Support through any Programmes and Wealth Index Quintiles. In simple words, we are regressing 1st regression with our 1st interaction.

Regression 4

(Work)$_{ji}$ = $\alpha o + \alpha_1$(Wealth Index Quintiles of HH)$_i$ + α_2 (Mother's Education)$_{ji}$ + α_3 (Father's Education)$_{ji}$ + α_4(Gender of Child)$_i$ + α_5 (Family Size)$_{ji}$ + α_6 (Rank of the children)$_{ji}$ + α_7 (Orphanhood)$_{ji}$ + α_8 (Age groups of child)$_i$ + α_9 (Region)$_i$ + α_{10}(Remittances)$_{ji\ i}$+ α_{11} (Financial Support through Any Programmes * Districts)$_i$

In this regression, we have included interaction and some main effects of independent variables. This regression has main effects and one interaction effect. We have excluded the main effects of only those variables which have an interaction effect in this regression because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between Financial Support through any Programmes and the Districts can correlate with the main effects of Financial Support through any Programmes and the Wealth index quintile of households. In simple words, we are regressing 1st regression with another 2nd interaction.

Regression 5

$(Work)_{ij} = \alpha o + \alpha_1 (Gender\ of\ Child)_i\ \alpha_2 (Region)_i + \alpha_3 (Mother's\ Education)_{ji} + \alpha_4 (Father's\ Education)_{ji} + \alpha_5 (Orphanhood)_{ji} + \alpha_6 (Rank\ number\ of\ the\ children)_{ij} + \alpha_7 (Family\ Size)_{ji} + \alpha_8 (Remittances)_{ji} + \alpha_9 (Age\ groups\ of\ child)_i + \alpha_{10} (WATAN\ CARD)_{ji} + \alpha_{11} (BITUMAL)_{ji} + \alpha_{12} (MPI\ Division\ wise)_i + \alpha_{13} (GPI\ Division\ wise)_i + \alpha_{14} (HH\ Deprivation\ Score)_{ii} + \alpha_{16} (BISP * Wealth\ Index\ Quintile\ of\ HH)_i$

In this regression, we have included interaction and some main effects of independent variables. This regression has main effects and one interaction effect. We have excluded the main effects of only those variables which have an interaction effect in this regression because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between the BISP and Wealth Index Quintile of households can correlate with the main effects of Financial Support through BISP and Wealth Index Quintile of households. In simple words, we are regressing 2nd regression with another 3rd interaction.

Regression 6

$(Work)_{ji} = \alpha o + \alpha_1 (Wealth\ Index\ quintile\ of\ HH)_i + \alpha_2 (Gender\ of\ Child)_i + \alpha_3 (Region)_i + \alpha_4 (Mother's\ Education)_{ji} + \alpha_5 (Father's\ Education)_{ji} + \alpha_6 (Orphanhood)_{ji} + \alpha_7 (Rank\ number\ of\ the\ children)_{ji} + \alpha_8 (Family\ Size)_{ji} + \alpha_9 (Remittances)_{ji} + \alpha_{10} (Age\ groups\ of\ child)_i + \alpha_{11} (WATAN\ CARD)_{ji} + \alpha_{12} (BITUMAL)_{ji} + \alpha_{13} (MPI\ Division\ wise)_i + \alpha_{14} (GPI\ Division\ wise)_i + \alpha_{15} (HH\ Deprivation\ Score)_i + \alpha_{16} (BISP * Districts)_{ji}$

In this regression, we have included interaction and some main effects of independent variables. This regression has main effects and one interaction effect. We have excluded the main effects of only those variables which have an interaction effect in this regression because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between Financial Support BISP and Districts can correlate with the main effects of Financial Support through BISP and Districts. In simple words, we are regressing 2nd regression with another 4th interaction. We also excluded GPI variable due to the risk of multicollinearity.

Regression 7

$(Work)_{ji} = \alpha o + \alpha_1 (Wealth\ Index\ Quintiles\ of\ HH)_i + \alpha_2 (Mother's\ Education)_{ji} + \alpha_3 (Father's\ Education)_{ji} + \alpha_4 (Gender\ of\ Child)_i + \alpha_5 (Family\ Size)_{ji} + \alpha_6 (Rank\ of\ the\ children)_{ji} + \alpha_7 (Orphanhood)_{ji} + \alpha_8 (Region)_i +$

α_9(Remittances)$_{ji}$ + α_{10}(Financial Support through Any Programmes)$_{ji}$+ α_{11} (GPI Division wise * Age groups of child)$_i$

In this regression, we have included intention and some main effects of independent variables. This regression has main effects and one interaction effect. We have excluded the main effects of only those variables which have an interaction effect in this regression because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between the variables GPI division wise and the age groups of the child can correlate with the main effects of GPI division wise and age groups of child. In simple words, we are regressing 1nd regression with another 5th interaction.

3.7.3 Model 3

(Paid Work)$_{ji}$ = £o + £$_1$(Wealth Index Quintile of HH)$_i$ + £$_2$ (Mother's Education)$_{ji}$ + £$_3$ (Father's Education)$_{ji}$ + £$_4$(Gender of Child)$_{ij}$ + £$_5$ (Family Size)$_{ji}$ + £$_6$ (Rank of the children)$_{ji}$ + £$_7$ (Orphanhood)$_{ji}$ + £$_8$ (Age groups of child)$_i$ + £$_9$ (Region)$_i$ + £$_{10}$ (Economic Statuses of HH)$_i$ + £$_{11}$ (HH Deprivation Score)$_i$ + £$_{12}$(Remittances)$_{ji}$ + £$_{13}$ (Financial Support through Any Programmes)$_{ji}$ + £$_{14}$(Districts)$_i$ + £$_{15}$ (BISP)$_{ji}$ + £$_{16}$ (WATAN CARD)$_{ji}$ + £$_{17}$ (BITUMAL)$_{ji}$ + £$_{18}$(MPI Division wise)$_i$ + £$_{19}$ (GPI Division wise)$_i$ + £$_{20}$(Financial Support through Any Programmes * Districts)$_{ji}$ + £$_{21}$ (Financial Support through Any Programmes * Wealth index quintile of HH)$_{ji}$ + £$_{22}$ (BISP* Wealth index quintile of HH)$_{ji}$ + £$_{23}$ (BISP* Districts)$_i$ + £$_{24}$(GPI Division wise * Age groups of child)$_i$

In this model, we want to show the effects of these factors on Child Paid Work. We regressed three regressions from this model to avoid the risk of multicollinearity. Each model has seven regressions. The above model shows the all independent and dependent variables. We did not regress all these independent variables on dependent variables due to the risk of multicollinearity. We will explain further the reasons for regressing each separate regression.

Regression 1

(Paid Work)$_{ji}$ = £o + £$_1$(Wealth Index Quintiles of HH)$_i$ + £$_2$ (Mother's Education)$_{ji}$ + £$_3$ (Father's Education)$_{ji}$ + £$_4$(Gender of Child)$_i$ + £$_5$ (Family Size)$_{ji}$ + £$_6$ (Rank of the children)$_{ji}$ + £$_7$ (Orphanhood)$_{ji}$ + £$_8$ (Age groups of child)$_i$ + £$_9$ (Region)$_i$ + £$_{10}$(Remittances)$_{ji}$ + £$_{11}$(Financial Support through Any Programmes)$_{ji}$+ £$_{12}$(Districts)$_i$

In this regression, we did not include interactions and some main effects of independent variables due to the following reasons. Firstly, this regression has main effects only, we have excluded the interaction effect because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between the variables Financial Support through any Programmes and the Wealth Index Quintile of households can correlate with the main effects of Financial Support through any Programmes and the Wealth Index Quintiles of households. Secondly, we have omitted the independent variable Economic Statuses of households because we have already included the variable Wealth Index Quantiles of households in this regression because which can be a substitute for the variable Deprivation Scores of households. We also have excluded the variables 'Gender parity index' and 'MPI' in this regression because these variables are created with the help of the District variable and we are regressing here in this regression District variable as an independent variable. The variables BISP, WATAN CARD and BITUMAL are also being excluded because there is a variable in this regression Financial Support through Any Programmes which is computed by adding the variables BISP, WATAN CARD and BITUMAL. That can create multicollinearity in this regression so we have excluded these variables.

Regression 2

(Paid Work) $_{ij}$ = £o + $£_1$ (Gender of Child)$_i$ $£_2$ (Region)$_i$ + $£_3$ (Mother's Education)$_{ji}$ + $£_4$ (Father's Education)$_{ji}$ + $£_5$ (Orphanhood)$_{ji}$ + $£_6$ (Rank number of the children)$_{ij}$ + $£_7$ (Family Size)$_{ji}$ + $£_8$(Remittances)$_{ji}$ + $£_9$ (Age groups of child)$_i$ + $£_{10}$ (BISP)$_{ji}$ + $£_{11}$ (WATAN CARD)$_{ji}$ + $£_{12}$ (BITUMAL)$_{ji}$ + $£_{13}$ (MPI Division wise)$_i$ + $£_{14}$ (GPI Division wise)$_i$ + $£_{15}$ (HH Deprivation Score)$_{i+}$ $£_{16}$ (Economic Statuses of HH)$_i$

Firstly, in this regression, almost all variables are the same as in 1st regression but we included the independent variables BISP, WATAN CARD and BITUMAL. Here we have omitted the variable Financial Support through any Programmes because this variable is created by combining all the financial supports through BISP, WATAN CARD and BITUMAL. In this regression, we want to see the separate effects of these supports. So the variables Financial Support through any Programmes and BISP, WATAN CARD and BITUMAL can create a multicollinearity problem in this regression. Secondly, this regression has main effects only, we have excluded the interaction effect because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interactions of BISP, WATAN CARD and BITUMAL with Wealth Index Quintile of households can correlate with the main effects of Financial Support through BISP, WATAN CARD, BITUMAL

and Wealth Index Quintile of households. Thirdly, we have omitted the independent variable Wealth Index Quintile of households because we have already included the variable Deprivation Scores of households in this regression which can be a substitute for the variable Economic Statuses of households. We also have included the variables Gender parity index and MPI in this regression because these variables are created with the help of the District variable, now district variable does not exist here so we can regress these variables in this regression.

Regression 3

(Paid Work)ji = £o + $£_1$ (Mother's Education)ji + $£_2$ (Father's Education)ji + $£_3$(Gender of Child)i + $£_4$ (Family Size)ji + $£_5$ (Rank of the children)ji + $£_6$ (Orphanhood)ji + $£_7$ (Age groups of child)i + $£_8$ (Region)i + $£_9$(Remittances)ji + $£_{10}$(Districts)i+ $£_{11}$(Financial Support through Any Programmes * Wealth Index Quintiles of HH)$_{ji}$

In this regression, we have included interaction and some main effects of independent variables. This regression has main effects and one interaction effect. We have excluded the main effects of only those variables which have an interaction effect in this regression because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between Financial Support through any Programmes and Districts can correlate with the main effects of Financial Support through any Programmes and Wealth Index Quintiles. In simple words, we are regressing 1st regression with our one^{t} interaction.

3.7.4 Model 4

(Idleness)$_{ji}$ = ϕo + ϕ_1(Wealth Index Quintile of HH)$_i$ + ϕ_2 (Mother's Education)$_{ji}$ + ϕ_3 (Father's Education)$_{ji}$ + ϕ_4(Gender of Child)$_{ij}$ + ϕ_5 (Family Size)$_{ji}$ + ϕ_6 (Rank of the children)$_{ji}$ + ϕ_7 (Orphanhood)$_{ji}$ + ϕ_8 (Age groups of child)$_i$ + ϕ_9 (Region)$_i$ + ϕ_{10} (Economic Statuses of HH)$_i$ + ϕ_{11} (HH Deprivation Score)$_i$ + ϕ_{12}(Remittances)$_{ji}$ + ϕ_{13} (Financial Support through Any Programmes)$_{ji}$ + ϕ_{14}(Districts)$_i$ + ϕ_{15} (BISP)$_{ji}$ + ϕ_{16} (WATAN CARD)$_{ji}$ + ϕ_{17} (BITUMAL)$_{ji}$ + ϕ_{18}(MPI Division wise)$_i$ + ϕ_{19} (GPI Division wise)$_i$ + ϕ_{20}(Financial Support through Any Programmes * Districts)$_{ji}$ + ϕ_{21} (Financial Support through Any Programmes * Wealth index quintile of HH)$_{ji}$ + ϕ_{22} (BISP* Wealth index quintile of HH)$_{ji}$ + ϕ_{23} (BISP* Districts)$_i$ + ϕ_{24}(GPI Division wise * Age groups of child)$_i$

In this model, we want to show the effects of these factors on Idleness of Children. We regressed three regressions from this model to avoid the risk of multicollinearity. Each model has seven regressions. The above model shows the all independent and dependent variables. We did not regress all these independent variables on dependent variables due to the risk of multicollinearity. We will explain further the reasons for regressing each separate regression.

Regression 1

$(\text{Idleness})_{ji} = \phi o + \phi_1(\text{Wealth Index Quintiles of HH})_i + \phi_2 (\text{Mother's Education})_{ji} + \phi_3 (\text{Father's Education})_{ji} + \phi_4(\text{Gender of Child})_i + \phi_5 (\text{Family Size})_{ji} + \phi_6 (\text{Rank of the children})_{ji} + \phi_7 (\text{Orphanhood})_{ji} + \phi_8 (\text{Age groups of child})_i + \phi_9 (\text{Region})_i + \phi_{10}(\text{Remittances})_{ji} + \phi_{11}(\text{Financial Support through Any Programmes})_{ji} + \phi_{12}(\text{Districts})_i$

In this regression, we did not include interactions and some main effects of independent variables due to the following reasons. Firstly, this regression has main effects only, we have excluded the interaction effect because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between the variables Financial Support through any Programmes and the Wealth Index Quintile of households can correlate with the main effects of Financial Support through any Programmes and the Wealth Index Quintiles of households. Secondly, we have omitted the independent variable Economic Statuses of households because we have already included the variable Wealth Index Quantiles of households in this regression because which can be a substitute for the variable Deprivation Scores of households. We also have excluded the variables 'Gender parity index' and 'MPI' in this regression because these variables are created with the help of the District variable and we are regressing here in this regression District variable as an independent variable. The variables BISP, WATAN CARD and BITUMAL are also being excluded because there is a variable in this regression Financial Support through Any Programmes which is computed by adding the variables BISP, WATAN CARD and BITUMAL. That can create multicollinearity in this regression so we have excluded these variables.

Regression 2

$(\text{Idleness})_{ij} = \phi o + \phi_1 (\text{Gender of Child})_i \phi_2 (\text{Region})_i + \phi_3 (\text{Mother's Education})_{ji} + \phi_4 (\text{Father's Education})_{ji} + \phi_5 (\text{Orphanhood})_{ji} + \phi_6 (\text{Rank number of the children})_{ij} + \phi_7 (\text{Family Size})_{ji} + \phi_8(\text{Remittances})_{ji} + \phi_9 (\text{Age groups of child})_i + \phi_{10} (\text{BISP})_{ji} + \phi_{11} (\text{WATAN CARD})_{ji} + \phi_{12} (\text{BITUMAL})_{ji} + \phi_{13} (\text{MPI Division wise})_i + \phi_{14} (\text{GPI Division wise})_i + \phi_{15} (\text{HH Deprivation Score})_{i+} \phi_{16} (\text{Economic Statuses of HH})_i$

Firstly, in this regression, almost all variables are the same as in 1st regression but we included the independent variables BISP, WATAN CARD and BITUMAL. Here we have omitted the variable Financial Support through any Programmes because this variable is created by combining all the financial supports through BISP, WATAN CARD and BITUMAL. In this regression, we want to see the separate effects of these supports. So the variables Financial Support through any Programmes and BISP, WATAN CARD and BITUMAL can create a multicollinearity problem in this regression. Secondly, this regression has main effects only, we have excluded the interaction effect because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interactions of BISP, WATAN CARD and BITUMAL with Wealth Index Quintile of households can correlate with the main effects of Financial Support through BISP, WATAN CARD, BITUMAL and Wealth Index Quintile of households. Thirdly, we have omitted the independent variable Wealth Index Quintile of households because we have already included the variable Deprivation Scores of households in this regression which can be a substitute for the variable Economic Statuses of households. We also have included the variables Gender parity index and MPI in this regression because these variables are created with the help of the District variable, now district variable does not exist here so we can regress these variables in this regression.

Regression 3

$$(\text{Idleness})ji = \phi o + \phi_1 (\text{Mother's Education})ji + \phi_2 (\text{Father's Education})ji + \phi_3(\text{Gender of Child})i + \phi_4 (\text{Family Size})ji + \phi_5 (\text{Rank of the children})ji + \phi_6 (\text{Orphanhood})ji + \phi_7 (\text{Age groups of child})i + \phi_8 (\text{Region})i + \phi_9(\text{Remittances})ji + \phi_{10}(\text{Districts})i + \phi_{11}(\text{Financial Support through Any Programmes} * \text{Wealth Index Quintiles of HH})_{ji}$$

In this regression, we have included interaction and some main effects of independent variables. This regression has main effects and one interaction effect. We have excluded the main effects of only those variables which have an interaction effect in this regression because of the main effects that are seemingly correlated with the factors in the interactions. That's because the interaction between Financial Support through any Programmes and Districts can correlate with the main effects of Financial Support through any Programmes and Wealth Index Quintiles. In simple words, we are regressing 1st regression with our one interaction.

3.7.5 Model 5 (for Two-Stage Least Squares Model)

$$(CHILD\ LABOUR\ HOURS)\ ij = \beta o + \beta_1\ (Rank\ of\ the\ children)\ ij + \beta_2\ (Father\ alive)ji + \beta_3\ (Gender\ of\ Child)i + \beta_4\ (School\ Enrolment)ji + \varepsilon_{1ij} \quad (1)$$

$$(School\ Enrolment)\ ij = \gamma o + \gamma_5\ (BISP)ji + \gamma_6\ (Tuition\ Support)ji + \varepsilon_{2ij} \quad (2)$$

where β and γ are coefficients, ε_{1ij} and ε_{2ij} are error terms.

i = subscript of ith value of Child

j = subscript of jth value of Household

3.7.6 Dependent Variable (for Two-Stage Least Squares Model)

(CHILD LABOUR HOURS)ji which are measured through a continuous variable: the number of hours a child spends during his/her work from i_{th} Child and j_{th} Household. School Enrolment is also a continuous variable.

3.8 DESCRIPTIVE STATISTICS AND GRAPHICAL ANALYSIS

In this section, graphical presentation of the environment which children are facing during their work is being provided. The section also contains a critical analysis of descriptive statistics and graphical presentation of the schooling, work and idleness statuses of children in the Punjab province.

3.8.1 Environmental Conditions faced by children at the Workplace

First of all, we will illustrate a graphical presentation and analysis of the environment which children are facing during their work.

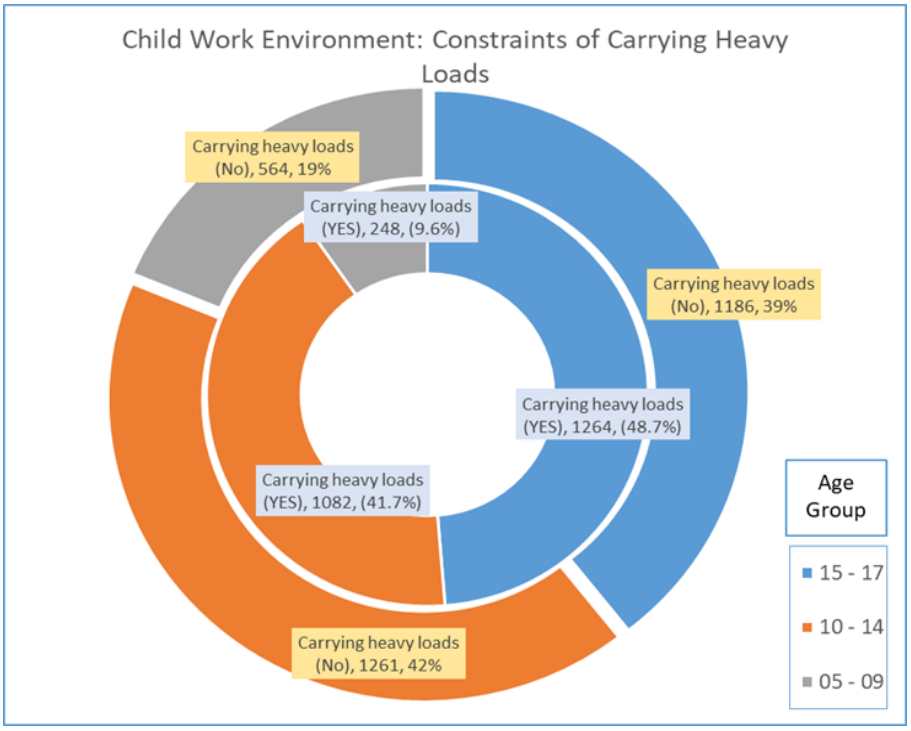

Figure 3.1.1: Distribution of Work Status of Children with 'Carrying heavy loads' (Percentage of Incidence of Child Labour in Different Age Groups)

Figure 3.1.1 depicts the distribution of Work Status of Children with 'Carrying heavy loads'. This picture presents the situation of the distribution of children's work in different age groups from Punjab Province. This distribution of work is in percentages. We presented this type of work with different age groups, 48.7 percent of children with age 15-17, 41.7 percent of children with age 10-14 and 9.6 percent of children aged 05-09 are reported to be working with 'Carrying heavy loads' in the labour market. The figure highlights a major part of children in the age group 15-17 is involved in 'Carrying heavy loads'. Carrying heavy loads or sitting in unnatural positions for long periods can permanently disable growing children. Hard physical labour over a period of years can stunt children's physical stature by up to 30 per cent of their biological potential. (Weissman, 1997).

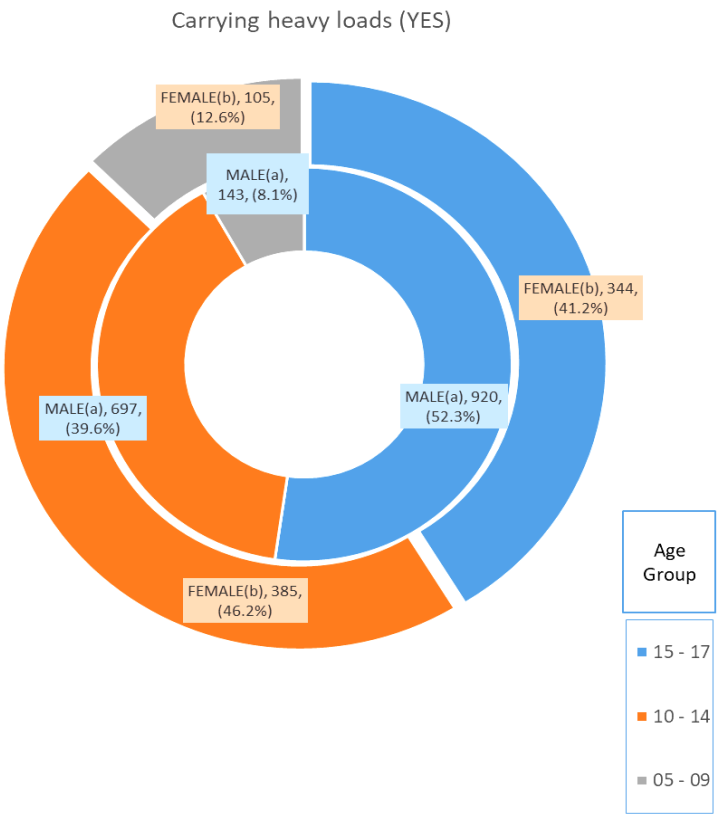

Figure 3.1.2: Distribution of Work Status of Children with 'Carrying heavy loads' (Percentage of Incidence of Child Labour in Different Age Groups according to Gender)

Gender differences in child labour with 'Carrying heavy loads' are provided in Figure 3.1.2. This picture shows the involvement of children in this type of work with respect to gender in the Punjab province. The prevalence of boys' child labour of 'Carrying heavy loads' in the age cohort 15-17 is higher, it is 52.3 percent in Punjab. While the higher child labour exists in age 10-14 for girls; the incidence of girls' child labour is 46.2 percent in age cohort 10-14 for 'Carrying heavy loads'. So, it shows that the involvement of girls in this type of child labour is lower than boys.

The Chi-square Test Statistics is used to check the linear relation or association (positive or negative) among the variables which are categorical in nature. So, the tables below are the results of Chi-square Test Statistics for testing the relationship between child age groups and different types of working conditions which they are facing.

Table 3.2
Chi-Square Tests

Activities Required Carrying Heavy Loads		Value	df	Significance (2-sided)
Occurrence of Events	**Pearson Chi-Square**	31.756	2	.000
Not Occurrence of Events	**Pearson Chi-Square**	13.119	2	.001
Total Events	**Pearson Chi-Square**	42.379	2	.000

The constraint of carrying heavy loads has a significantly positive linear association with child gender and age groups in the working environment while 'carrying heavy loads', in all cases of 'Occurrence of Events', Not Occurrence of Events, and Total Events (Overall) respectively. The constraint stress of carrying heavy loads increases with the increase of child age in both genders. However, this constraint stress is significantly lower in girls as compared to boys. It is shown in the following line and bar graphs. It is indicated by the above Test statistics in Table 3.2:

i) Person's Chi-square = 31.756 [(p-value = 0.000) < (α = 0.05)] shows a significantly positive linear association for 'Yes' cases.

ii) Person's Chi-square = 13.119 [(p-value = 0.001) < (α = 0.05)] shows significantly positive linear association for 'No' cases.

iii) Person's Chi-square = 42.379 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'Total (Overall)' cases.

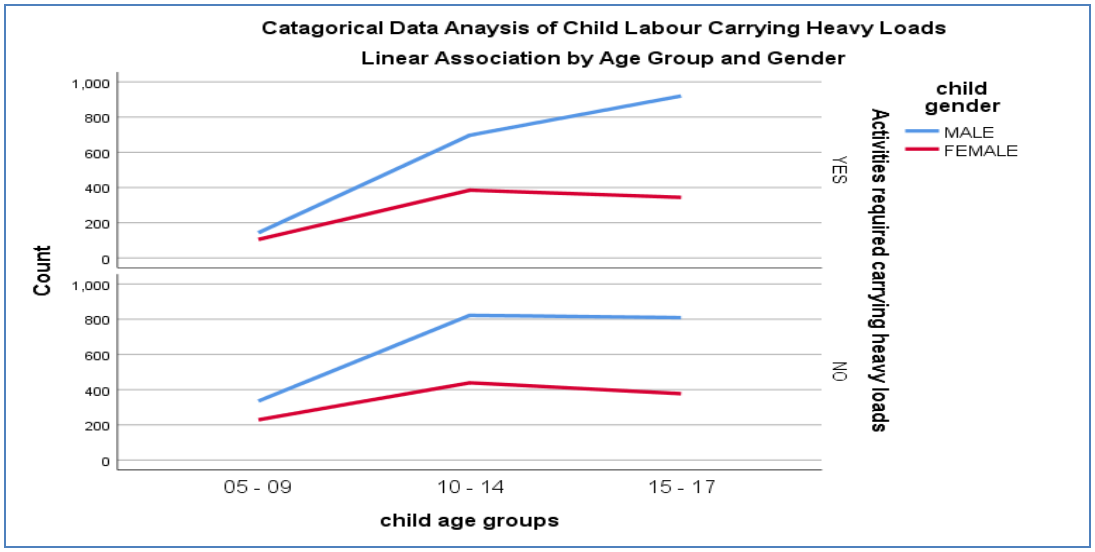

Figure 3.1.3: Age and Gender Wise Work Status of Children with 'Carrying heavy loads' [Percentage of Children in 05-17 Age Cohort]

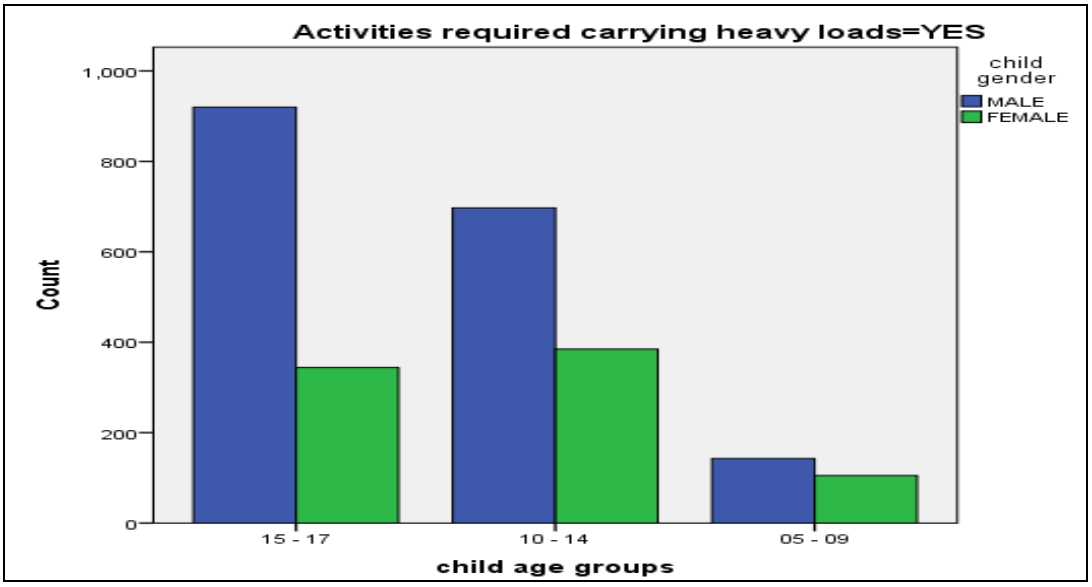

Figure 3.1.4: Gender and Age Wise Work Status of Children with 'Carrying heavy loads' [Percentage of Children in 05-17 Age Cohort]

Figure 3.1.3 reflects the child labour with 'Carrying heavy loads'. This picture shows the age and gender wise involvement of children in this type of child labour. The work with Carrying heavy loads varies from 187 children to 989 children for age group 05-17. Bar Chart 3.1.4 and Line Chart 3.1.3 present this situation clearly. The Line chart and Bar Chart show that the involvement of girls in this type of child labour is lower than boys.

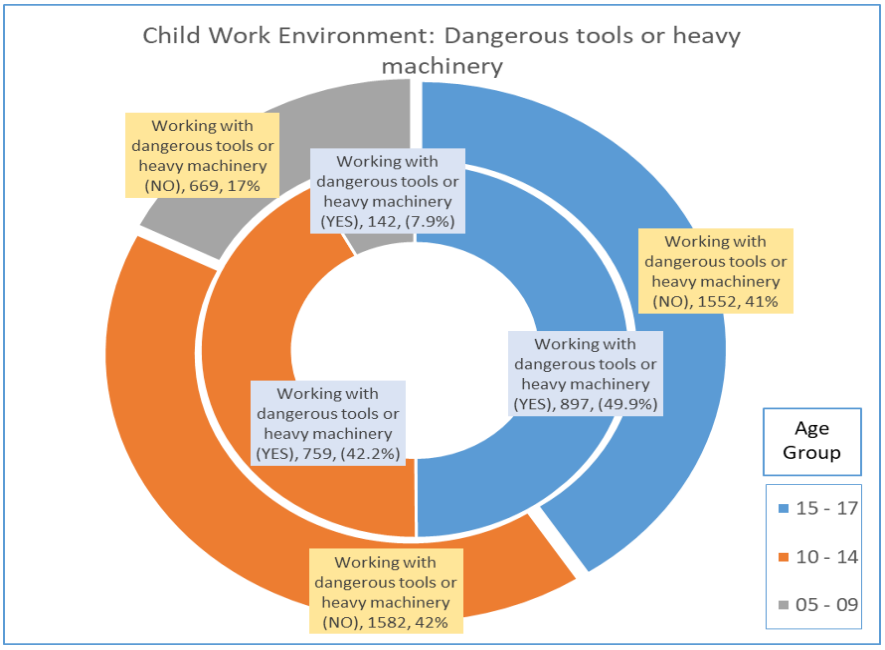

Figure 3.1.5: Distribution of Work Status of Children with 'Exposed to dangerous tools and heavy machinery' (Percentage of incidence of child labour in different age groups)

Figure 3.1.5 shows the distribution of Work Status of Children 'Exposed to dangerous tools and heavy machinery'. We presented this type of work in different age groups. 49.9 percent children in age 15-17, 42.2 percent children aged 10-14 and 7.9 percent children aged 05-09 are reported to be working with 'Exposed to dangerous tools and heavy machinery' in the labour market. This figure highlights a large number of children in the age group 15-17 are engaged in 'Exposed to dangerous tools and heavy machinery'.

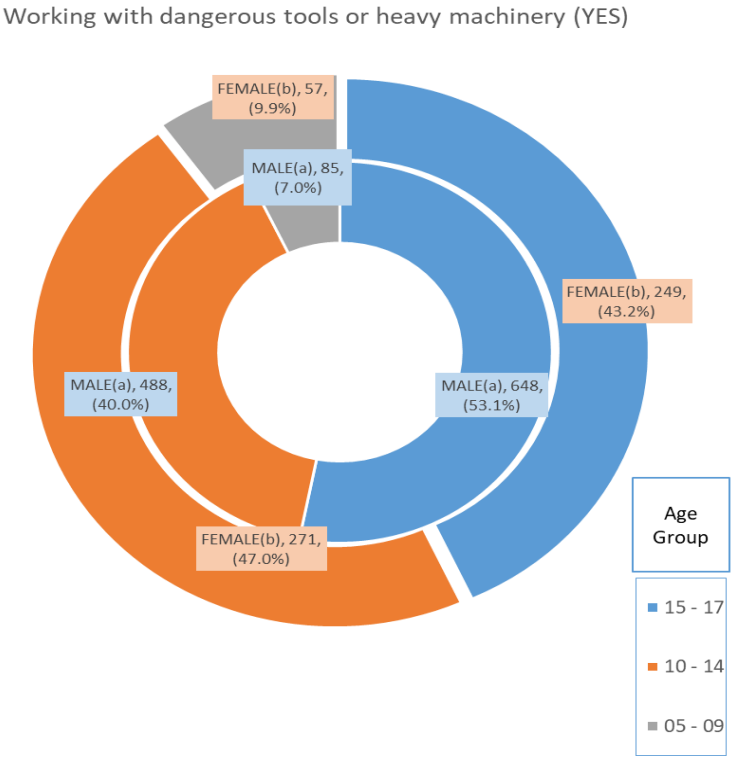

Figure 3.1.6: Distribution of Work Status of Children with 'Exposed to dangerous tools and heavy machinery' (Percentage of incidence of child labour in different age groups according to gender)

Gender differences in child labour with 'Exposed to dangerous tools and heavy machinery' are provided in Figure 3.1.6. This picture shows the involvement of children in this type of work with respect to gender in Punjab province. The prevalence of boys' child labour with 'Exposed to dangerous tools and heavy machinery' in the age cohort 14-17 is higher, it is 53 percent in Punjab. While the higher child labour exists in ages 10-14 for girls. The incidence of girls' child labour is 47 percent in age cohort 10-14. So, it shows that the involvement of girls in this type of child labour is lower than boys.

Table 3.3
Chi-Square Tests

Activities Required Working with Dangerous Tools or Heavy Machinery		Value	df	Significance (2-sided)
Occurrence of Events	**Pearson Chi-Square**	16.494	2	.000
Not Occurrence of Events	**Pearson Chi-Square**	25.611	2	.000
Total Events	**Pearson Chi-Square**	42.335	2	.000

The constraint of environment exposed to dangerous tools and heavy machinery has significantly positive linear association with child gender and age groups in the working environment while 'Exposed to Dangerous tools and Heavy Machinery', in all cases of 'Occurrence of Events', Not Occurrence of Events, and Total Events (Overall) respectively. The constraint stress of dangerous tools and heavy machinery increases with the increase of child age in both genders. However, this constraint stress is significantly lower in girls as compared to boys. It is shown in the following line chart and bar graphs. It is indicated by the above Test statistics (Table 3.3):

i) Person's Chi-square = 16.494 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'Yes' cases.

ii) Person's Chi-square = 25.611 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'No' cases.

iii) Person's Chi-square = 42.335 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'Total (Overall)' cases.

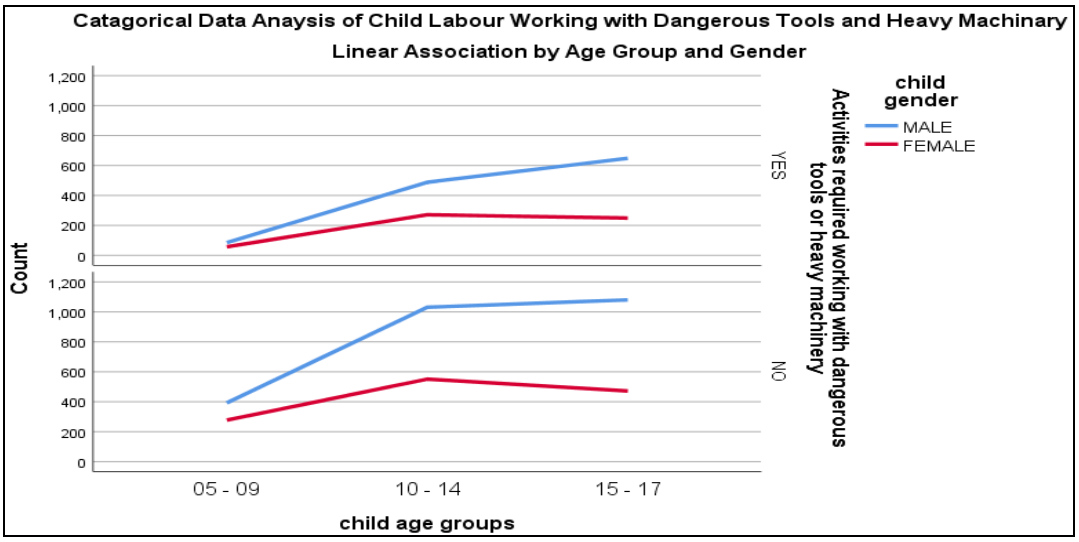

Figure 3.1.7: Age and gender wise Work Status of Children with 'Exposed to dangerous tools and heavy machinery' (Percentage of Children in 05-17 Age Cohort)

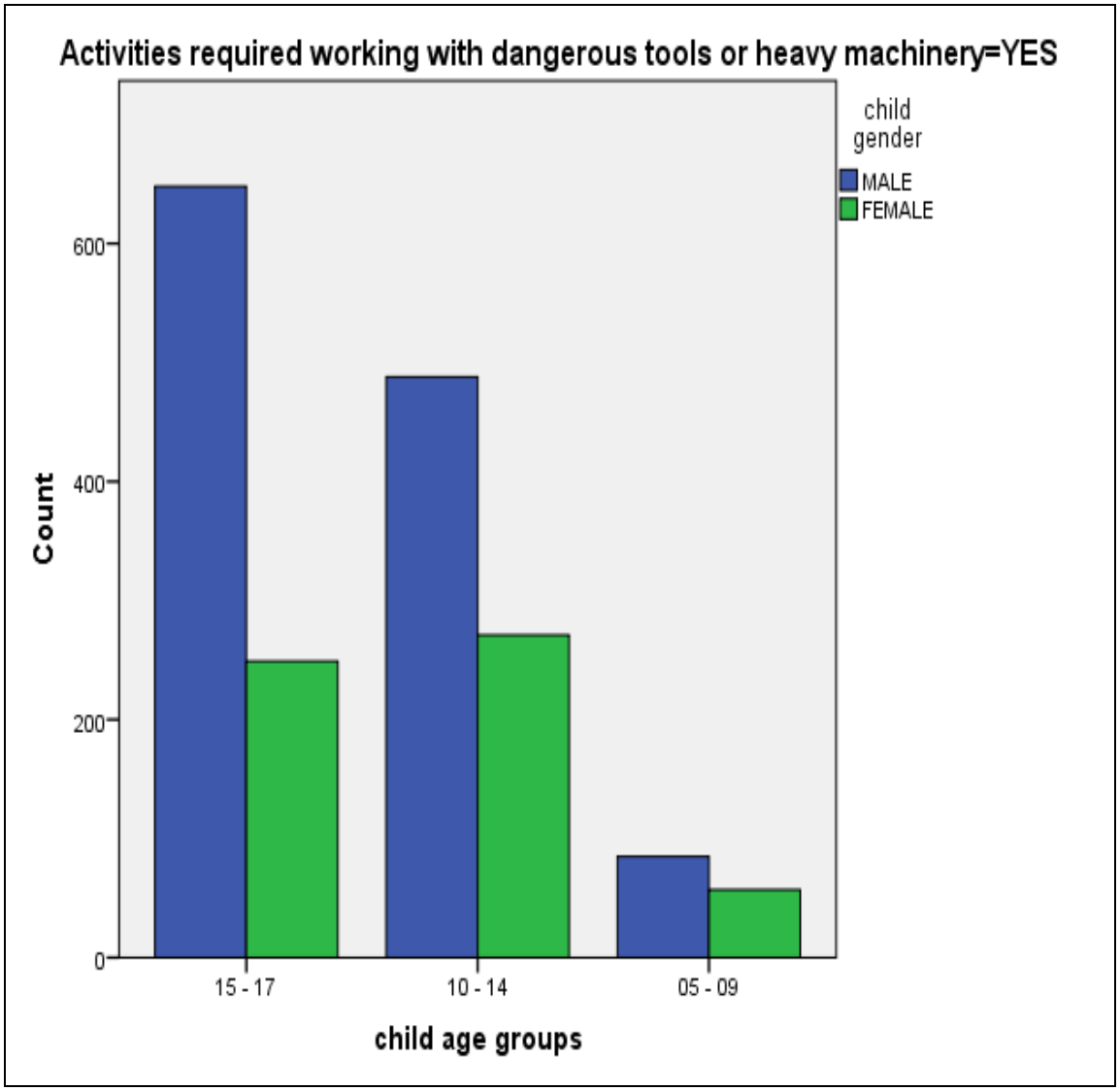

Figure 3.1.8: Gender wise and Age Wise Work Status of Children with 'Exposed to dangerous tools and heavy machinery' [Percentage of Children in 05-17 Age Cohort]

Figure 3.1.7 reflects the child labour with 'Exposed to dangerous tools and heavy machinery' This picture shows the age and gender wise involvement of children in this type of child labour. The work with 'Exposed to dangerous tools and heavy machinery' varies from 10 children to 540 children for ages 05 and 17 respectively. The Bar Charts 3.1.8 and Line Charts 3.1.7 present this situation clearly. The Line chart and Bar Chart show that the involvement of girls in this type of child labour is lower than boys.

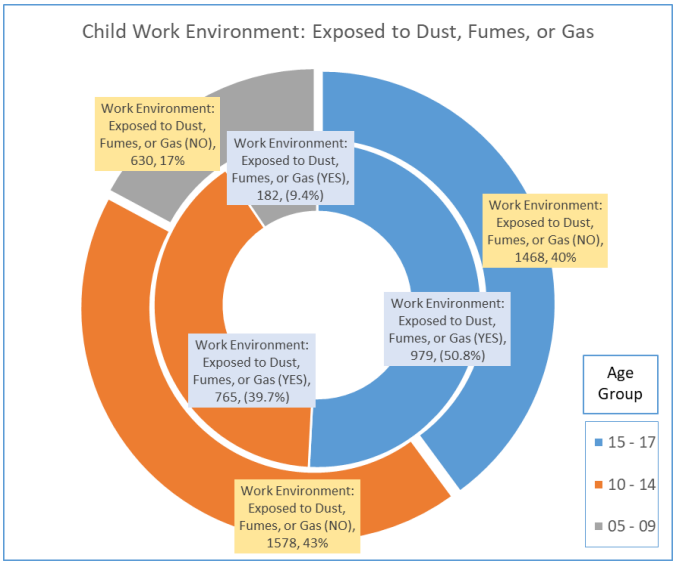

Figure 3.1.9: Distribution of Work Status of Children with 'Exposed to dust' (Percentage of incidence of child labour in different age groups)

Figure 3.1.9 depicts the distribution of work status of children with 'Exposed to dust'. This picture presents the situation of the distribution of children's work in different age groups from Punjab Province. This distribution of work is in percentages. 50.8 percent children in age 15-17, 39.7 percent children aged 10-14 and 9.4 percent children aged 05-09 are reported to be working with 'Exposed to dust' in the labour market. The figure highlights that a major part of children in age 15-17 is involved in 'Exposed to dust'.

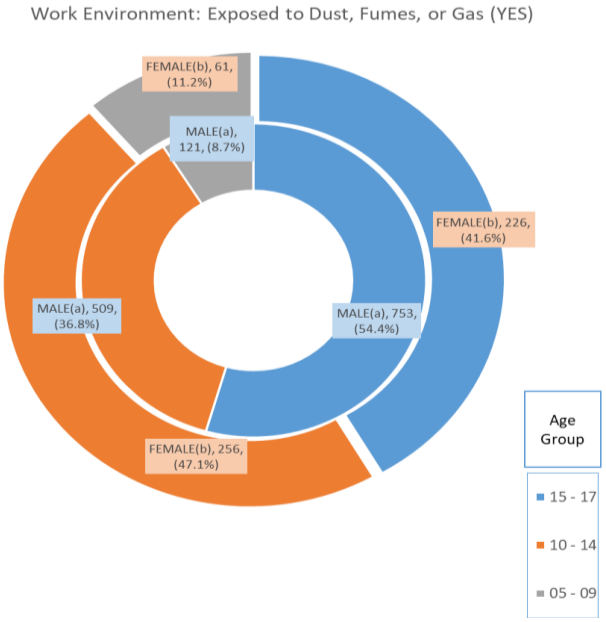

Figure 3.1.10: Age wise Ranking According to Work Status of Children with 'Exposed to dust' (Percentage of incidence of child labour in different age groups according to gender)

Gender differences in child labour with 'Exposed to dust' are provided in Figure 3.1.10. This picture shows the involvement of children in this type of work with respect to gender in Punjab province. The prevalence of boys' child labour with 'Exposed to dust' in the age cohort 15-17 is higher, it is 54 percent in Punjab. While the higher child labour exists for 'Exposed to dust' in age 10-14 for girls. Incidence of girls' child labour for 'Exposed to dust' is 47.1 percent in age cohort 10-14. So, it shows that the involvement of girls in this type of child labour is lower than boys

Table 3.4
Chi-Square Tests

Description of Work: Exposed to Dust, Fumes, or Gas		**Value**	**df**	**Significance (2-sided)**
Occurrence of Events	**Chi-Square of Pearson**	25.665	2	.000
Not Occurrence of Events	**Chi-Square of Pearson**	18.02	2	.000
Total Events	**Chi-Square of Pearson**	42.264	2	.000

The constraint of environment exposed to dust, fumes or gas has a significantly positive linear association with Child Gender and Age groups in the working environment while 'Exposed to dust' in all cases of 'Occurrence of Events', Not Occurrence of Events, and Total Events (Overall) respectively. The constraint of the environment exposed to dust, fumes or gas increases with the increase of child age in both genders. However, this constraint stress is significantly lower in girls as compared to boys. It is shown in the following line chart and bar graphs. It is indicated by the above Test statistics (Table 3.4):

i) Person's Chi-square = 25.665 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'Yes' cases.

ii) Person's Chi-square = 18.02 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'No' cases.

iii) Person's Chi-square = 42.264 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'Total (Overall)' cases.

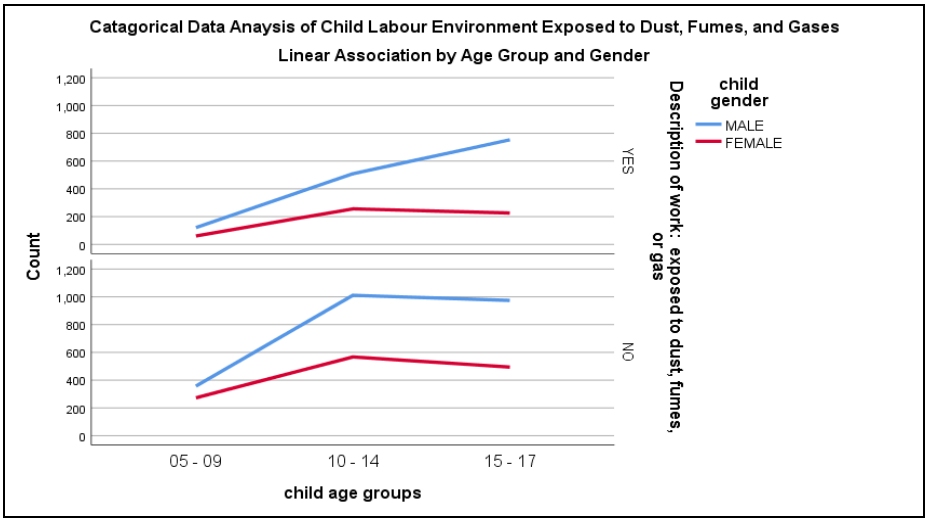

Figure 3.1.11: Age wise Ranking According to Work Status of Children with 'Exposed to dust' [Percentage of Children in 05-17 Age Cohort]

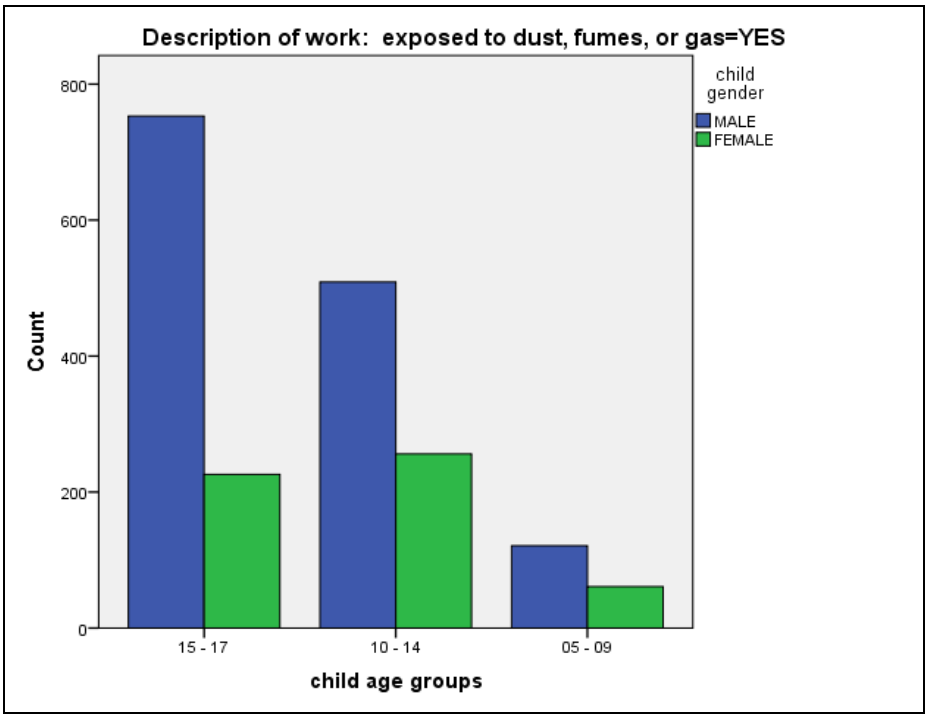

Figure 3.1.12: Gender wise and Age Wise Ranking According to Work Status of Children with 'Exposed to dust' [Percentage of Children in 05-17 Age Cohort]

Figure 3.1.11 reflects the child labour with 'Exposed to dust'. This picture shows the age and gender wise involvement of children in this type of child labour. The work with 'Exposed to dust' varies from 198 children to 489 children for ages 05 and 17 respectively. Bar Charts 3.1.12 and Line Charts 3.1.11 present this situation clearly. The Line chart and Bar Chart show that the involvement of girls in this type of child labour is lower than boys.

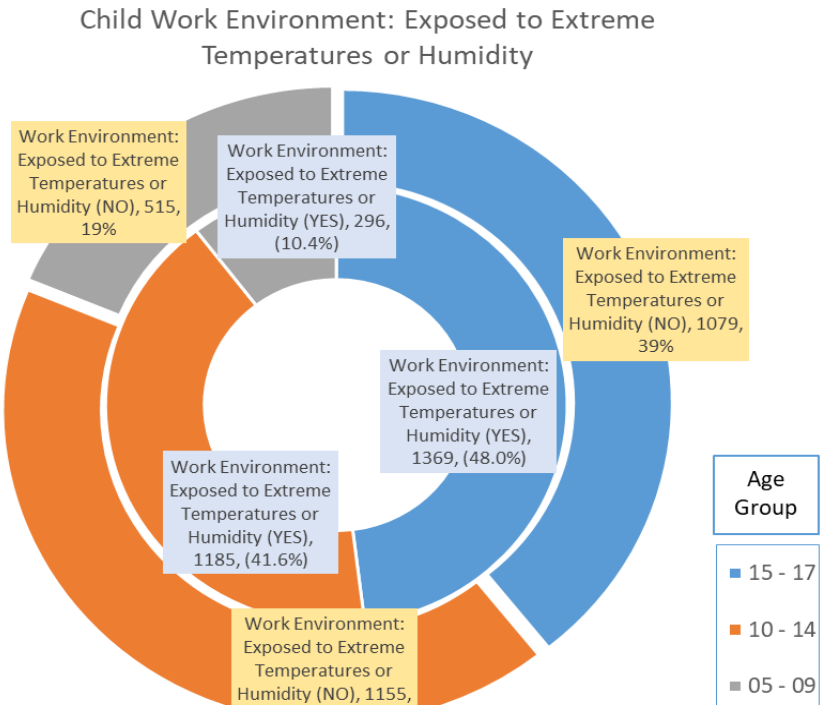

Figure 3.1.13: Distribution of Work Status of Children with 'Exposed to Extreme Temperature' (Percentage of Incidence of child Labour in Different Age Groups)

Figure 3.1.13 depicts the distribution of Work Status of Children with 'Exposed to extreme temperature'. This picture presents the situation of the distribution of children's work in different age groups in Punjab Province. This distribution of work is in percentages. We presented this type of work with different age groups, 48 percent children in age 15-17, 41.6 percent children age 10-14 and 10.4 percent children aged 05-09 are reported to be working with 'Exposed to extreme temperature' in the labour market. The figure highlights that the major part of children in the age group 15-17 is involved in 'Exposed to extreme temperature'

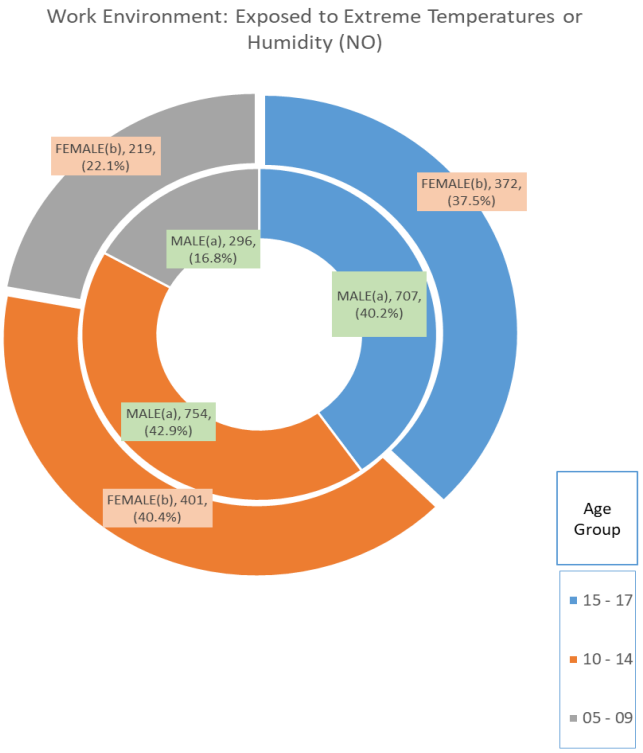

Figure 3.1.14: Distribution of Work Status of Children with 'Exposed to extreme temperature' (Percentage of incidence of child labour in different age groups according to gender)

Gender differences in children's activities with 'Exposed to extreme temperature' are furnished in Figure 3.1.14. It is observed that in the context of gender differences in children in the Punjab province. The prevalence of boys' child labour with 'Exposed to extreme temperature' in the age cohort 15-17 is higher, it is 40.2 percent in Punjab. While the higher child labour exists in age 10-14 for girls; the incidence of girls' child labour is 40.4 percent in age cohort 10-14. So, it shows that the involvement of girls in this type of child labour for boys and girls are almost same.

Table 3.5
Chi-Square Tests

Description of Work: Exposed to Extreme Temperatures or Humidity		Value	df	Significance (2-sided)
Occurrence of Events	**Pearson's Chi-Square**	40.351	2	.000
Not Occurrence of Events	**Pearson's Chi-Square**	11.404	2	.003
Total Events	**Pearson's Chi-Square**	43.020	2	.000

The constraint of environment exposed to extreme temperature or humidity has a significantly positive linear association between Child Gender and Age group in the working environment while 'Exposed to extreme temperature' in all cases of 'Occurrence of Events', Not Occurrence of Events, and Total Events (Overall) respectively. That is in both gender, the constraint stress of an environment exposed to extreme temperature or humidity increases with the increase of child age. However, this constraint stress is significantly lower in girls as compared to boys. It is shown in the following line chart and bar graphs. It is indicated by the above Test statistics (Table 3.5):

i) Person's Chi-square = 40.351 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'Yes' cases.

ii) Person's Chi-square = 11.404 [(p-value = 0.003) < (α = 0.05)] shows significantly positive linear association for 'No' cases.

iii) Person's Chi-square = 43.020 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'Total (Overall)' cases.

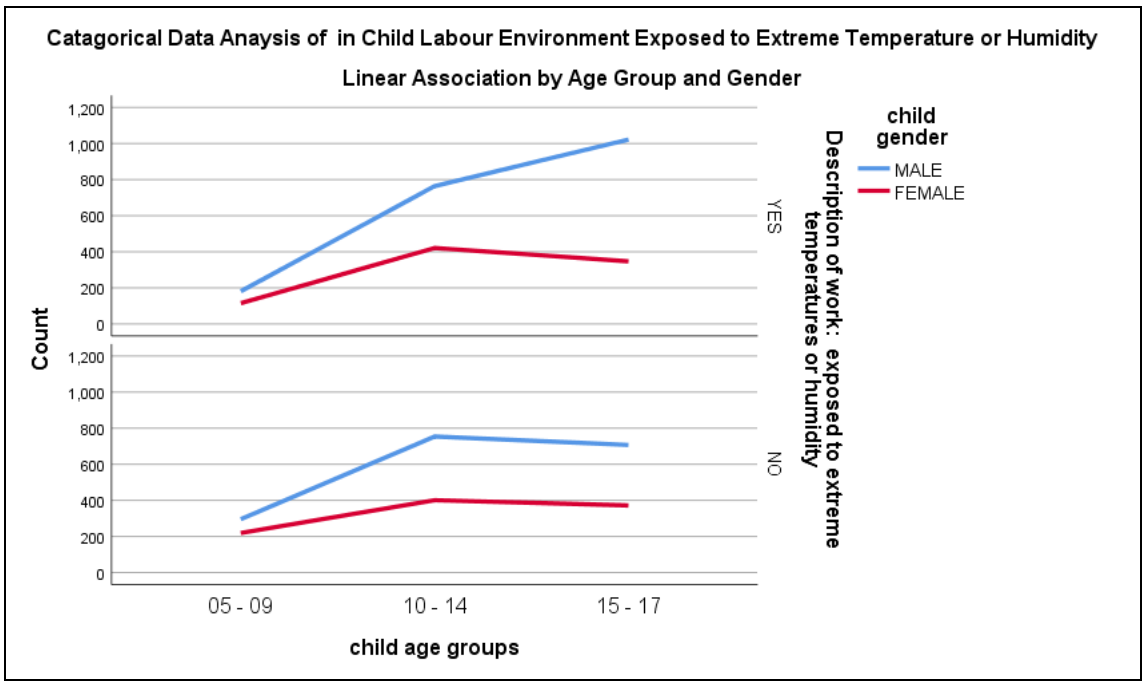

Figure 3.1.15: Age and Gender Wise Work Status of Children with 'Exposed to extreme temperature' [Percentage of Children in 05-17 Age Cohort]

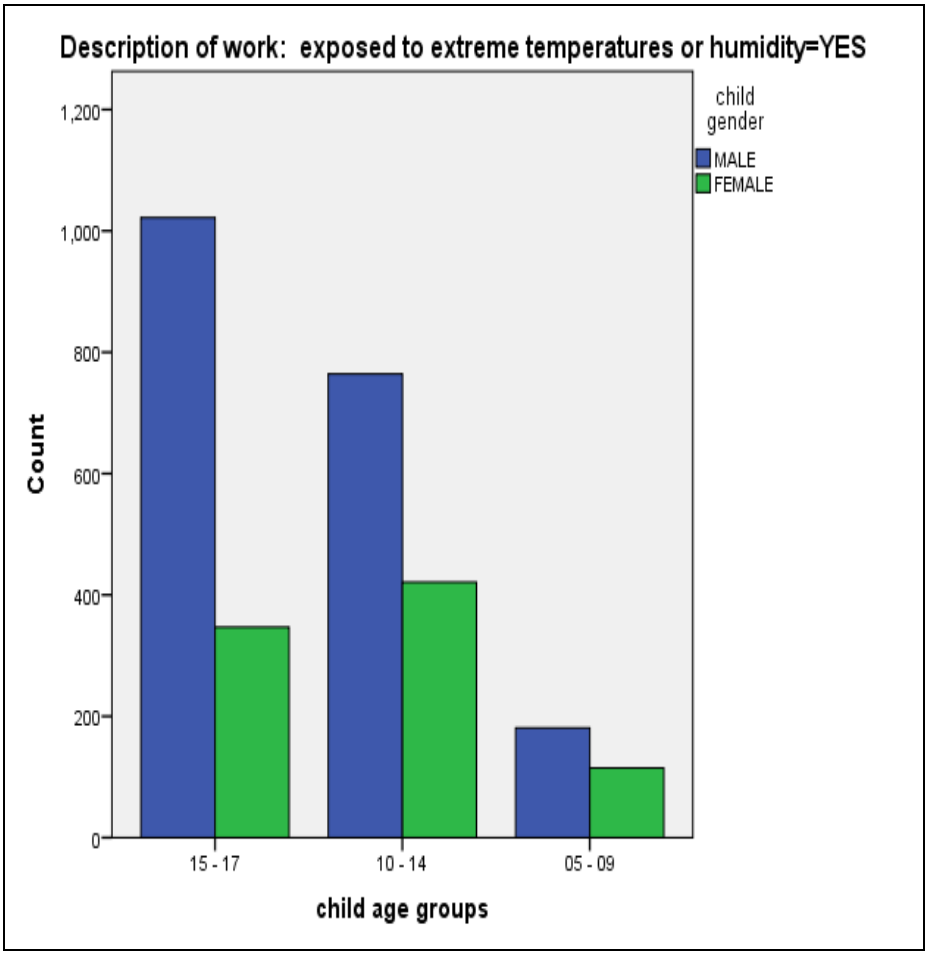

Figure 3.1.16: Gender and age wise Work Status of Children with 'Exposed to Extreme Temperature' [Percentage of Children in 05-17 Age Cohort]

Figure 3.1.15 reflects the child labour with 'Exposed to extreme temperature'. This picture shows the age and gender wise involvement of children in this type of child labour. The work with 'Exposed to extreme temperature' varies from 187 children to1,098 children for ages 05 and 17 years respectively. Bar Charts 3.1.16 and Line Charts 3.1.15 present this situation clearly. The Line chart and Bar Chart show that the involvement of girls in this type of child labour is lower than boys.

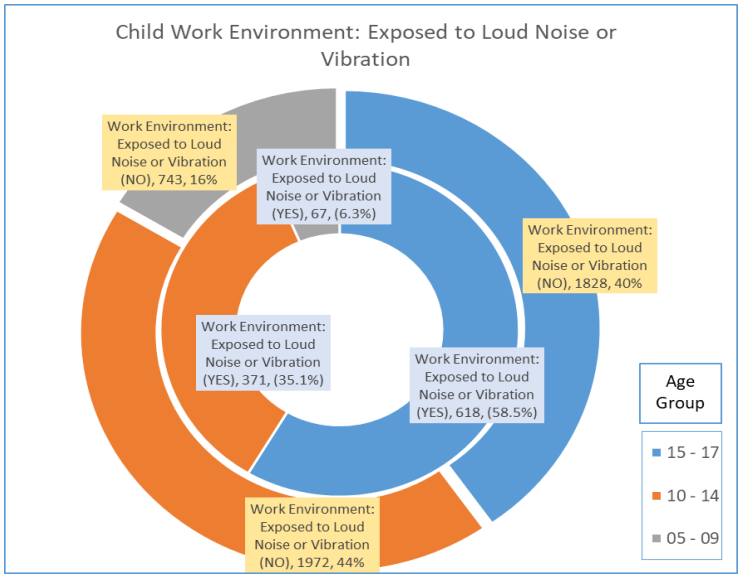

Figure 3.1.17: Distribution of Work Status of Children with 'Exposed to Loud Noise or Vibration' (Percentage of Incidence of Child Labour in Different Age Groups)

Figure 3.1.17 depicts the distribution of Work Status of Children 'Exposed to Loud Noise or Vibration'. This picture presents the situation of the distribution of children's work in different age groups from Punjab Province. This distribution of work is in percentages. 58.5 percent children in age 15-17, 35.1 percent children aged 10-14 and 6.3 percent children aged 05-09 are reported to be working with 'Exposed to Loud Noise or Vibration' in the labour market. The figure highlights a major part of children in age 15-17 is involved in 'Exposed to Loud Noise or Vibration'.

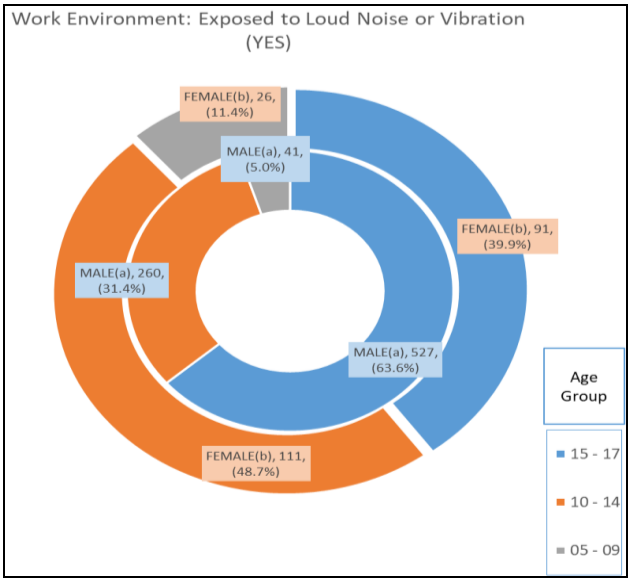

Figure 3.1.18: Distribution of Work Status of Children with 'Exposed to Loud Noise or Vibration' in the Punjab Province

Gender differences in child labour with 'Exposed to Loud Noise or Vibration' are provided in Figure 3.1.18. This picture shows the involvement of children in this type of work with respect to gender in the Punjab province. The prevalence of boys' child labour with 'Exposed to Loud Noise or Vibration' in the age cohort 15-17 is higher, it is 63.6 percent in Punjab. While the higher child labour exists in ages 10-14 for girls. The incidence of girls' child labour is 48.7 percent in the age cohort 10-14. So, it shows that the involvement of girls in this type of child labour is lower than boys.

Table 3.6
Chi-Square Tests

Description of Work: Exposed to Loud Noise or Vibration		**Value**	**df**	**Significance (2-sided)**
Occurrence of Events	**Pearson Chi-Square**	44.138	2	.000
Not Occurrence of Events	**Pearson Chi-Square**	10.774	2	.005
Total Events	**Pearson Chi-Square**	41.734	2	.000

The constraint of environment exposed to Loud Noise or Vibration has a significantly positive linear association with Child Gender and Age group in the working environment while 'Exposed to Loud Noise or Vibration', in all cases of 'Occurrence of Events', Not Occurrence of Events, and Total Events (Overall) respectively. The constraint stress of environment exposed to Loud Noise or Vibration increases with the increase of child age in both genders. However, this constraint stress is significantly lower in girls as compared to boys. It is shown in the following line and bar graphs and indicated by the above Test Statistics (Table 3.6):

i) Person's Chi-square = 44.138 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'Yes' cases.

ii) Person's Chi-square = 10.774 [(p-value = 0.005) < (α = 0.05)] shows significantly positive linear association for 'No' cases.

iii) Person's Chi-square = 41.734 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'Total (Overall)' cases.

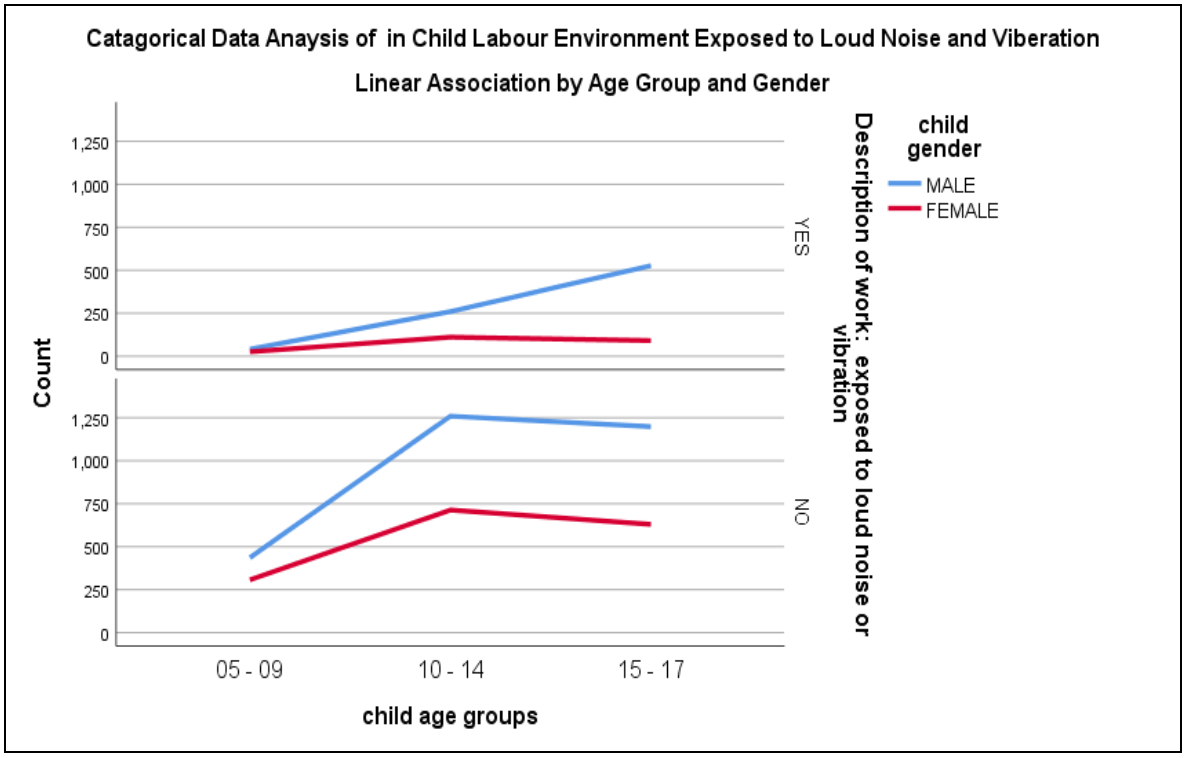

Figure 3.1.19: Age wise Ranking According to Work Status of Children with 'Exposed to Loud Noise or Vibration' [Percentage of Children in 05-17 Age Cohort]

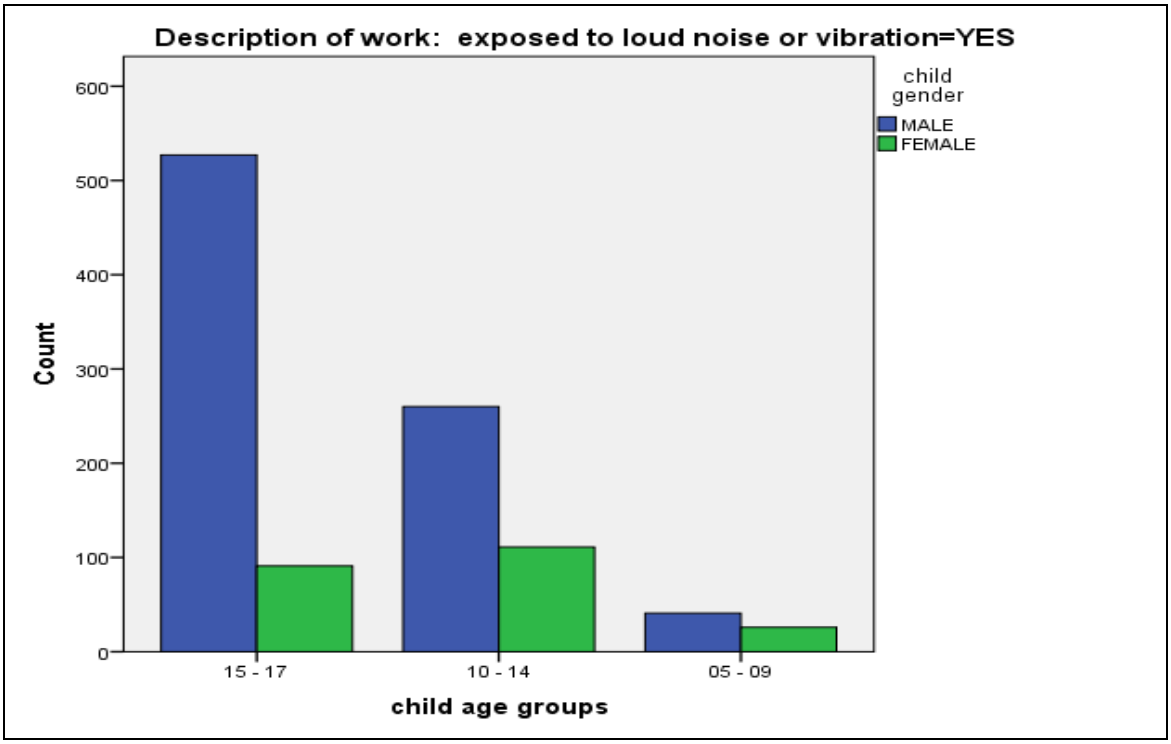

Figure 3.1.20: Gender wise and Age Wise Ranking According to Work Status of Children with 'Exposed to Loud Noise or Vibration' [Percentage of Children in 05-17 Age Cohort]

Figure 3.1.19 reflects the child labour with 'Exposed to Loud Noise or Vibration'. This picture shows the age and gender wise involvement of children in this type of child labour. The work with 'Exposed to Loud Noise or Vibration' varies from 02 children to 501 children for 05 years to17 years. Bar Charts 3.1.19 and Line Charts 3.1.20 show that the involvement of girls in this type of child labour is lower than boys.

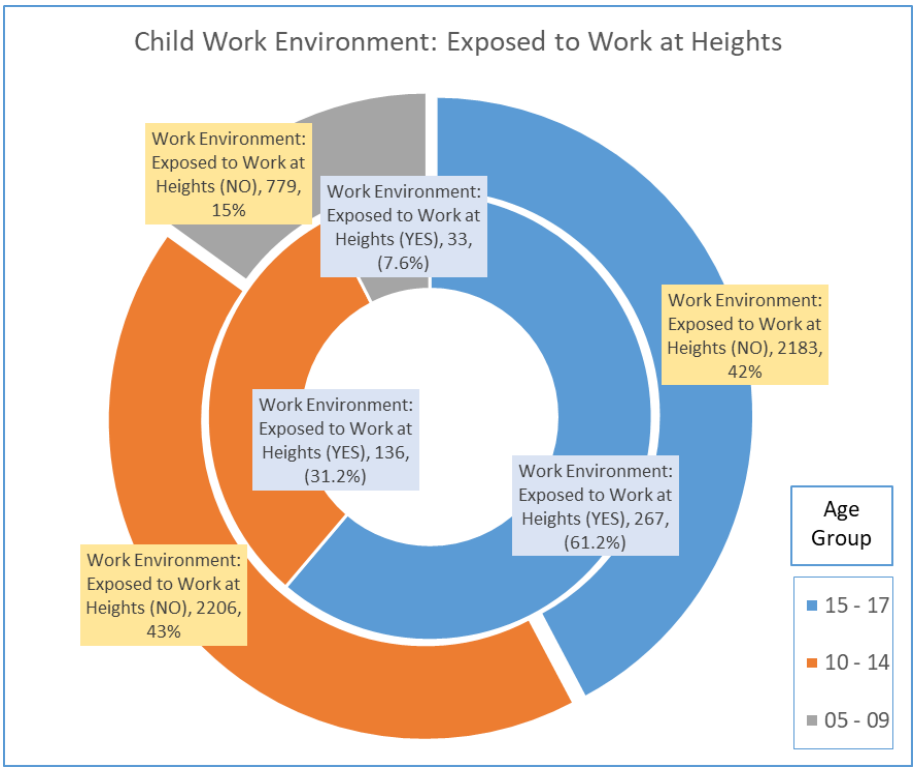

Figure 3.1.21: Distribution of Work Status of Children with 'Work at Heights' (Percentage of incidence of child labour in different age groups)

Figure 3.1.21 depicts the distribution of Work Status of Children with 'Work at Heights'. This picture presents the situation of the distribution of children's work in different age groups from Punjab Province. This distribution of work is in percentages. This is clear in this picture that, 61.2 percent children in the age group 15-17, 31.2 percent children age group 10-14 and 7.6 percent children in age group 05-09 are reported to be working with 'Work at Heights' in the labour market. The figure highlights a major part of children in age 15-17 is involved in 'Work at Heights'.

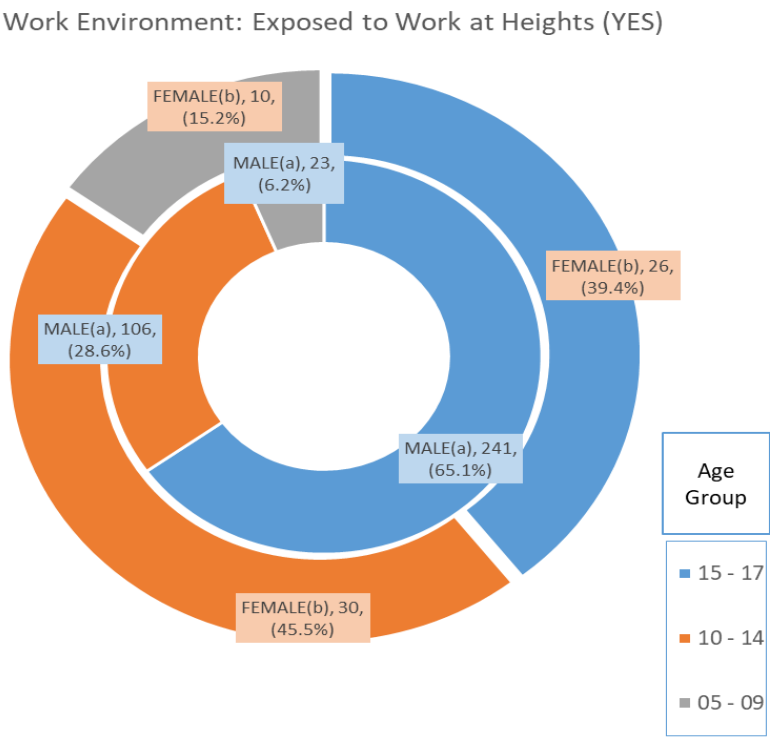

Figure 3.1.22: Distribution of Work Status of Children with 'Work at Heights' (Percentage of incidence of child labour in different age groups)

Gender differences in child labour with 'Work at Heights' are provided in Figure 3.1.22. This picture shows the involvement of children in this type of work with respect to gender in the Punjab province. The prevalence of boys' child labour with 'Work at Heights' in the age cohort 15-17 is higher; it is 65 percent in Punjab. While the higher child labour with 'Work at Heights' exists in ages 10-14 for girls. The incidence of girls' child labour is 45 percent in age cohort 10-14 for 'Work at Heights'. So, it shows that the involvement of girls in this type of child labour is lower than boys.

Table 3.7
Chi-Square Tests

Description of work: Required to Work at Heights		Value	df	Significance (2-sided)
Occurrence of Events	**Pearson Chi-Square**	17.040	2	.000
Not Occurrence of Events	**Pearson Chi-Square**	25.611	2	.000
Total Events	**Pearson Chi-Square**	42.668	2	.000

The constraint of environment exposed to Work at Heights has a significantly positive linear association between Child Gender and Age group in the working environment while Work at Heights, in all cases of 'Occurrence of Events', Not Occurrence of Events, and Total Events (Overall) respectively. That is in both gender, the constraint stress of the environment exposed to Work at Heights increases with the increase of child age. However, this constraint stress is significantly lower in girls as compared to boys. It is shown in the following line chart and bar graphs. It is indicated by the above Test statistics (Table 3.7):

i) Person's Chi-square = 17.040 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'Yes' cases.

ii) Person's Chi-square = 25.611 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'No' cases.

iii) Person's Chi-square = 42.668 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'Total (Overall)' cases.

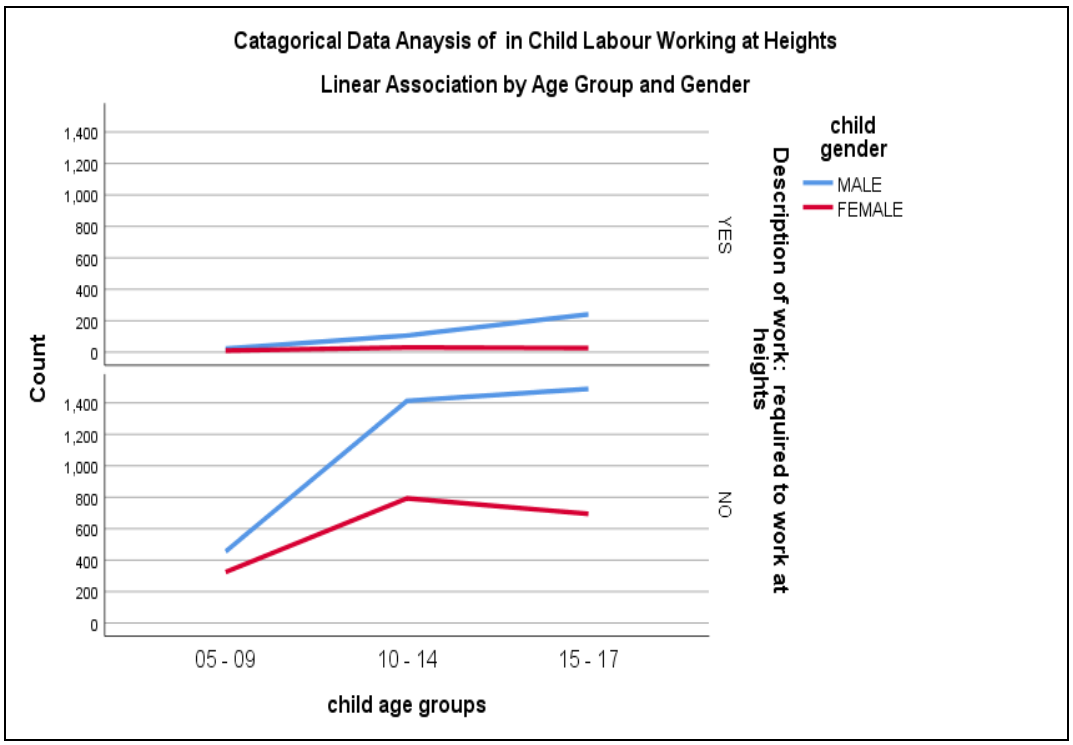

Figure 3.1.23: Age and gender wise Work Status of Children with 'Work at Heights' [Percentage of Children in 05-17 Age Cohort]

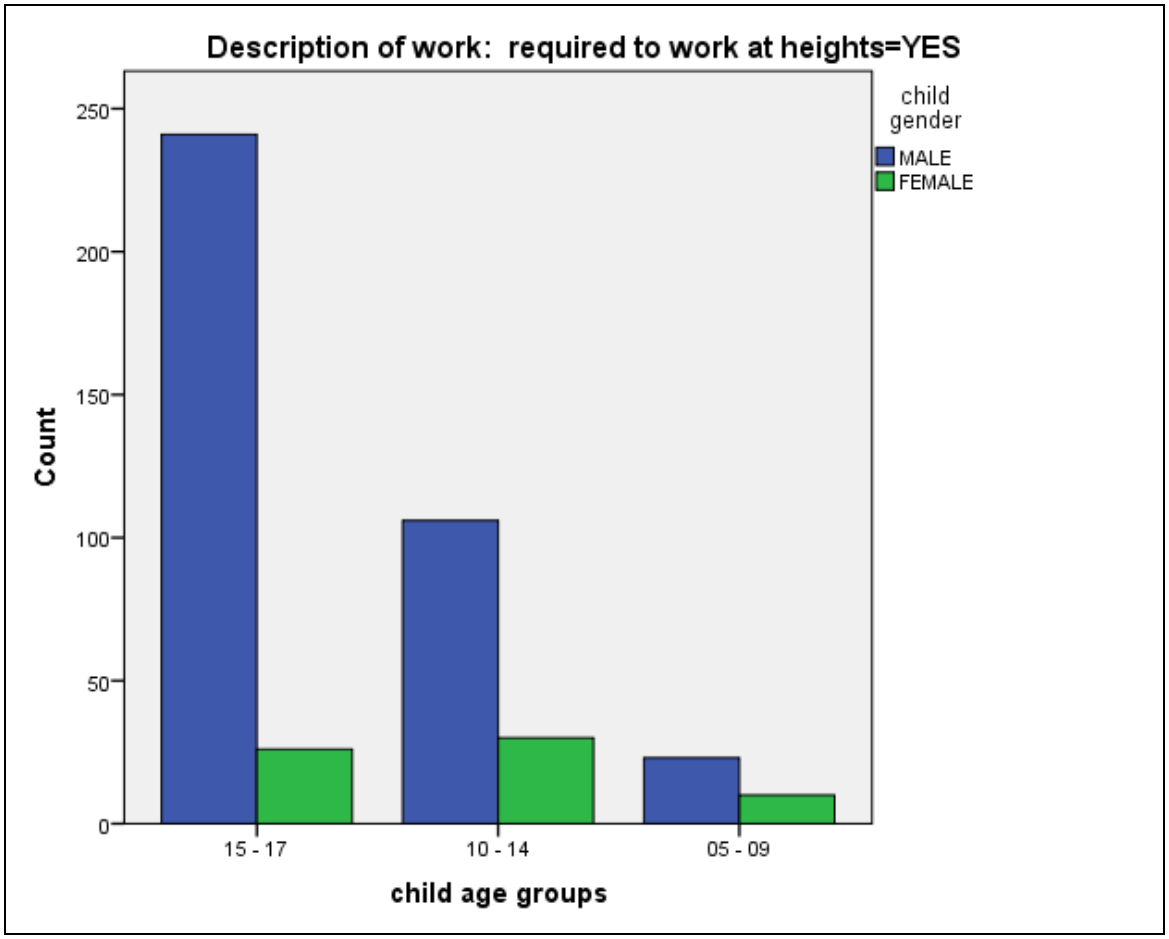

Figure 3.1.24: Gender and Age Wise Ranking According to Work Status of Children with 'Work at Heights' [Percentage of Children in 05-17 Age Cohort]

Figure 3.1.23 reflects the child labour with 'Work at Heights'. This picture shows the age and gender wise involvement of children in this type of child labour. The work with 'Work at Heights' varies from 01 children to 200 children for ages 05 and 17 respectively. Bar Charts 3.1.24 and Line Charts 3.1.23 present this situation clearly. The Line chart and Bar Chart show that the involvement of girls in this type of child labour is lower than boys.

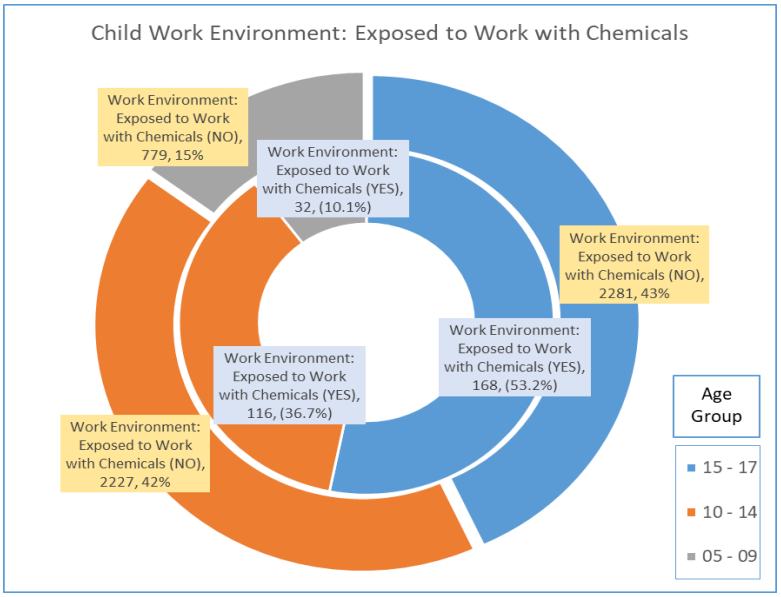

Figure 3.1.25: Distribution of Work Status of Children with 'Work with Chemicals') (Percentage of incidence of child labour in different age groups)

Figure 3.1.25 depicts the distribution of work status of children with 'Work with Chemicals'. This picture presents the situation of the distribution of children's work in different age groups in Punjab province. This distribution of work is in percentages. We can see in this figure, 53.2 percent children in age 15-17, 36.7 percent children aged 10-14 and 10.1 percent children aged 05-09 are reported to be working with 'Work with Chemicals' in the labour market. The figure highlights a major part of children in the age group 15-17 is involved in 'Work with Chemicals'.

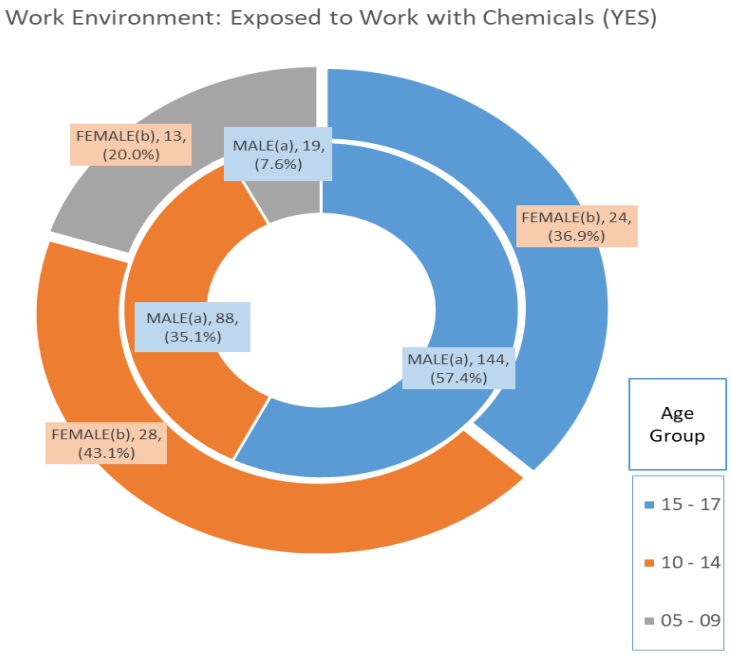

Figure 3.1.26: Distribution of Work Status of Children with 'Work with Chemicals' (Percentage of incidence of child labour in different age groups according to gender)

Gender differences in child labour with 'Work with Chemicals' are provided in Figure 3.1.26. This picture shows the involvement of children in this type of work with respect to gender in the Punjab province. The prevalence of boys' child labour with 'Work with Chemicals' in the age cohort 15-17 is higher, it is 57.4 percent in Punjab. While the higher child labour exists in ages 10-14 for girls. The incidence of girls' child labour is 43.1 percent in the age cohort 10-14. So, it shows that the involvement of girls in this type of child labour is lower than boys.

Table 3.8
Chi-Square Tests

Description of Work: Required to Work with Chemicals		**Value**	**df**	**Significance (2-sided)**
Occurrence of Events	**Pearson Chi-Square**	12.842	2	.002
Not Occurrence of Events	**Pearson Chi-Square**	33.069	2	.000
Total Events	**Pearson Chi-Square**	42.891	2	.000

The constraint of environment exposed to Work with Chemicals has significantly positive linear association with Child Gender and Age group in the working environment while Work at Heights, in all cases of 'Occurrence of Events', Not Occurrence of Events, and Total Events (Overall) respectively. That is in both gender, the constraint stress of the environment exposed to Work with Chemicals increases with the increase of child age. However, this constraint stress is significantly lower in girls as compared to boys. It is shown in the following line chart and bar graphs. It is indicated by the above Test statistics (Table 3.8):

i) Person's Chi-square = 12.842 [(p-value = 0.002) < (α = 0.05)] shows significantly positive linear association for 'Yes' cases.

ii). Person's Chi-square = 33.069 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'No' cases.

iii). Person's Chi-square = 42.891 [(p-value = 0.000) < (α = 0.05)] shows significantly positive linear association for 'Total (Overall)' cases.

3.9 CHILDREN'S WORK, SCHOOLING AND IDLENESS, DISTRICT WISE PHENOMENON

Figures 3.2.1, 3.2.2, 3.2.3, 3.2.4 and Tables 3.9, 3.10, 3.11, 3.12 show the district wise situation of children's work, schooling and idleness. All these Figures and Tables depict the districts of Punjab in terms of child schooling, paid work, work only and idleness. Now we will explain these Figures and Tables in detail.

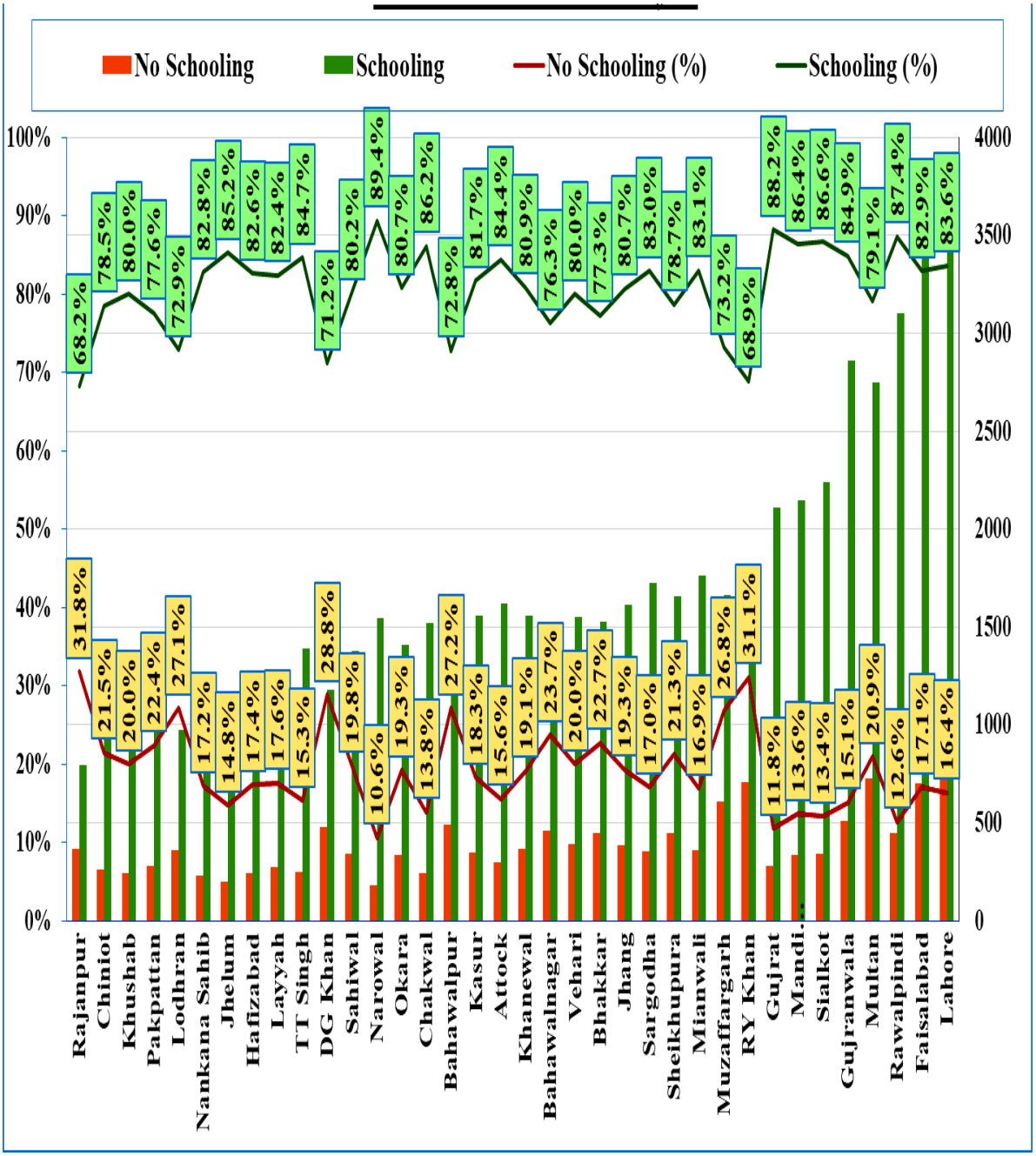

Figure 3.2.1: District Wise Ranking for Child Status 'Schooling', District Wise Trend Analysis

Table 3.9
District Ranking According to Status of Child 'Schooling', district-wise phenomenon [Percentage of Children in 5-17 Age Cohort]

District Wise Tend Analysis: Top Districts with the lowest Schooling					
Rank	**Districts**	**Not Attending School**	**Attending School**	**Percentage of Out of School Children**	**Total**
01	Rajanpur	370	793	31.8%	1163
02	RY Khan	708	1570	31.1%	2278
03	DG Khan	478	1180	28.8%	1658
04	Bahawalpur	492	1319	27.2%	1811
05	Lodhran	363	976	27.1%	1339
06	Muzaffargarh	609	1661	26.8%	2270
07	Bahawalnagar	457	1471	23.7%	1928
08	Bhakkar	449	1527	22.7%	1976
09	Pakpattan	278	965	22.4%	1243
10	Chiniot	263	962	21.5%	1225
11	Sheikhupura	449	1655	21.3%	2104
12	Multan	727	2750	20.9%	3477
13	Vehari	389	1554	20.0%	1943
14	Khushab	246	983	20.0%	1229
15	Sahiwal	341	1381	19.8%	1722
16	Jhang	385	1613	19.3%	1998
17	Okara	336	1409	19.3%	1745
18	Khanewal	369	1558	19.1%	1927
19	Kasur	349	1559	18.3%	1908
20	Layyah	272	1275	17.6%	1547
21	Hafizabad	241	1146	17.4%	1387
22	Nankana Sahib	233	1119	17.2%	1352
23	Faisalabad	704	3418	17.1%	4122
24	Sargodha	354	1725	17.0%	2079
25	Mianwali	359	1761	16.9%	2120
26	Lahore	719	3671	16.4%	4390
27	Attock	299	1623	15.6%	1922
28	TT Singh	252	1392	15.3%	1644
29	Gujranwala	509	2860	15.1%	3369
30	Jhelum	200	1155	14.8%	1355
31	Chakwal	244	1519	13.8%	1763
32	M. Bahauddin	338	2145	13.6%	2483
33	Sialkot	345	2239	13.4%	2584
34	Rawalpindi	449	3105	12.6%	3554
35	Gujrat	281	2108	11.8%	2389
36	Narowal	184	1545	10.6%	1729
	Total	14041	60692	18.8%	74733

Source: Estimated by Researcher from the Data (MICS), 2018

Table 3.9 and figure 3.2.1 identify the frequencies and percentages of out of school children and going to school children in different districts of Punjab. Rajanpur ranks 1st out of 36 districts of Punjab for out of school children (It has the lowest school attendance rate of children). R.Y. Khan has 2nd lowest rate of out of school children in Punjab. While Narowal ranks last out of 36 districts of Punjab for out of school children (It has the highest school attendance rate of children).

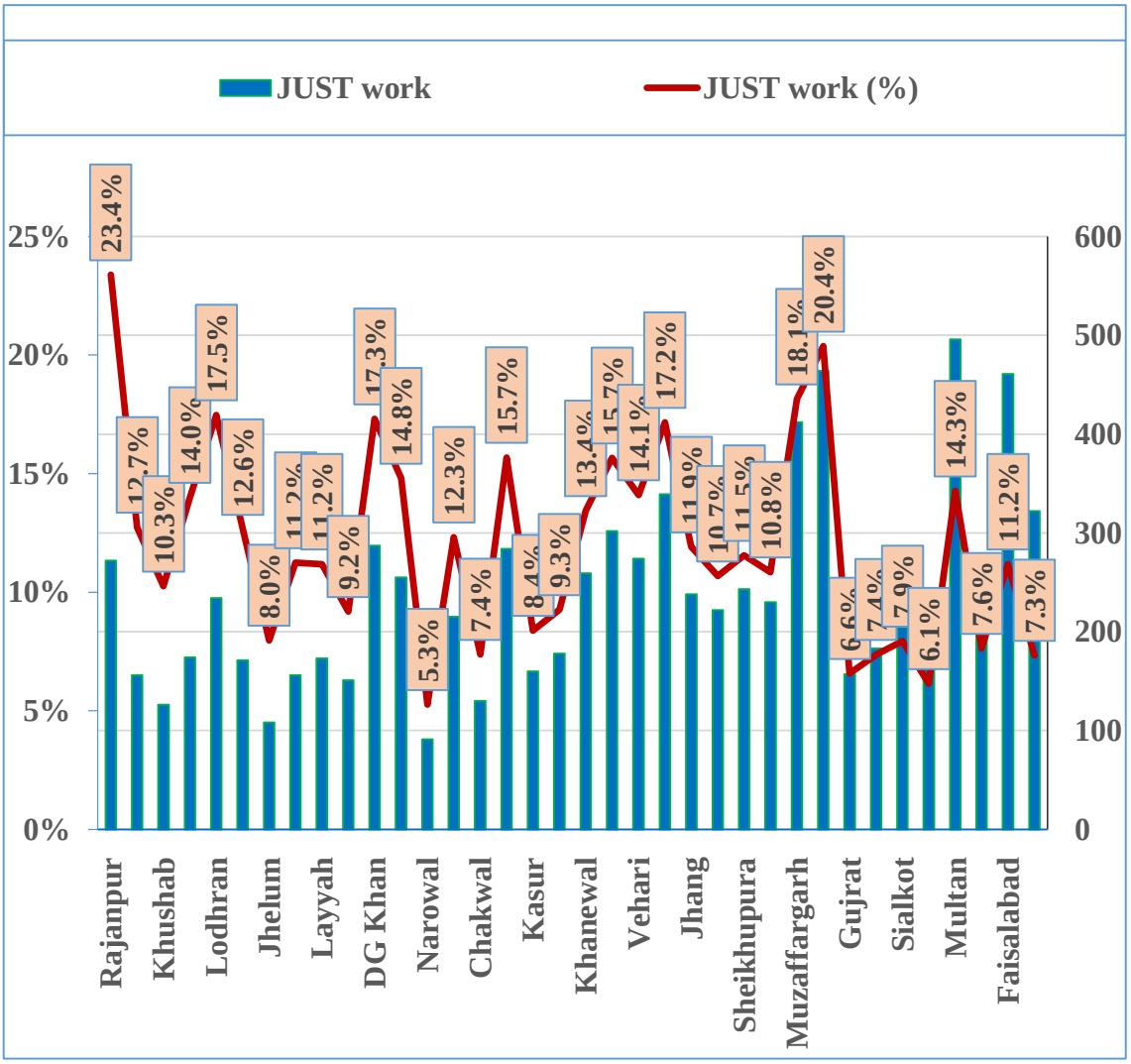

Figure 3.2.2: District Wise Ranking for Children Status 'Work Only'

Table 3.10
District Ranking According to Children Status 'Children's Work', District-Wise Phenomenon [Percentage and frequency of Children in 5-17 Age Cohort]

Rank	Districts	Not Attending School	Involved in Work	Percentage of Out of School Children	Total
1	Rajanpur	891	272	23.39%	1163
2	RY Khan	1814	464	20.37%	2278
3	Muzaffargarh	1857	412	18.15%	2270
4	Lodhran	1105	234	17.48%	1339
5	DG Khan	1371	287	17.31%	1658
6	Bhakkar	1537	339	17.16%	1976
7	Bahawalpur	1527	284	15.68%	1811
8	Bahawalnagar	1626	302	15.66%	1928
9	Sahiwal	1467	255	14.81%	1722
10	Multan	2981	496	14.27%	3477
11	Vehari	1669	274	14.10%	1943
12	Pakpattan	1069	174	14.00%	1243
13	Khanewal	1668	259	13.44%	1927
14	Chiniot	1069	156	12.73%	1225
15	Nankana Sahib	1181	171	12.65%	1352
16	Okara	1530	215	12.32%	1745
17	Jhang	1760	238	11.91%	1998
18	Sheikhupura	1861	243	11.55%	2104
19	Hafizabad	1231	156	11.25%	1387
20	Layyah	1374	173	11.18%	1547
21	Faisalabad	3661	461	11.18%	4122
22	Mianwali	1890	230	10.85%	2120
23	Sargodha	1857	222	10.68%	2079
24	Khushab	1103	126	10.25%	1229
25	Attock	1744	178	9.26%	1922
26	TT Singh	1493	151	9.18%	1644
27	Kasur	1748	160	8.39%	1908
28	Jhelum	1247	108	7.97%	1355
29	Sialkot	2379	205	7.93%	2584
30	Rawalpindi	3283	271	7.63%	3554
31	Chakwal	1633	130	7.37%	1763
32	Mandi Bahauddin	2300	183	7.37%	2483
33	Lahore	4068	322	7.33%	4390
34	Gujrat	2232	157	6.57%	2389
35	Gujranwala	3162	207	6.14%	3369
36	Narowal	1638	91	5.26%	1729
	Total	**66127**	**8606**		**74733**

Source: Estimated by Researcher from the Data MICS, 2018

Figure 3.2.2 and Table 3.10 show 'Children's Work Only' activity varies from 5.26 percent to 23.39 percent for Rajanpur and Narowal districts respectively. Rajanpur ranks 1st out of 36 districts of Punjab for the involvement of Children's Work (It has the highest Children's Work). While Narowal ranks last out of 36 districts of Punjab for the involvement of Children's Work (It has the lowest Children's Work).

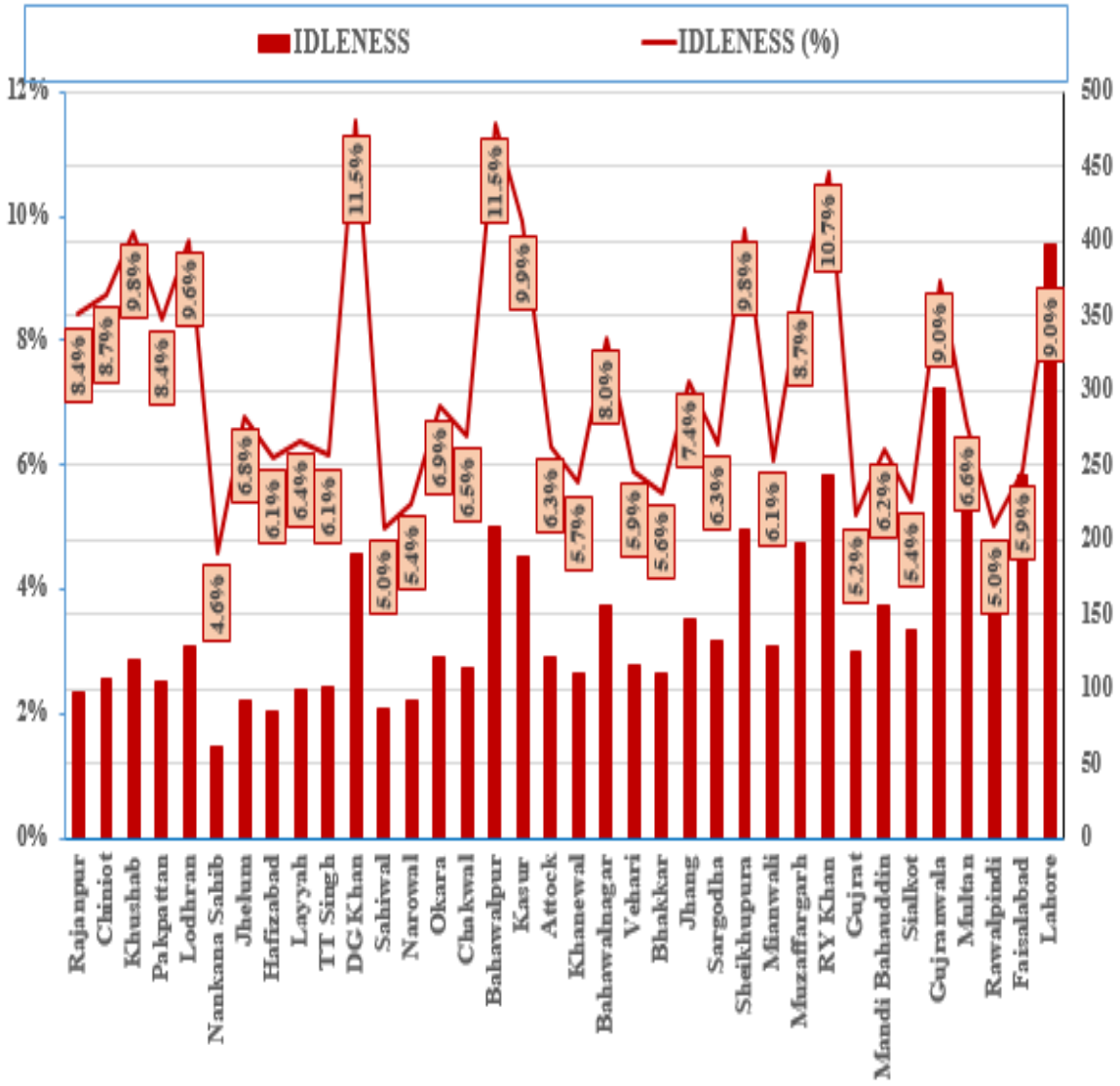

Figure 3.2.3: District Wise Ranking for Children Status 'Idleness' in percentage

Table 3.11
District wise Ranking According to Children Status highest Child 'Idleness' (Neither School nor Work), [Percentage and frequency of Children in 5-17 Age Cohort]

Rank	Districts	Not Idle Children	Idle Children	Percentage of Idle Children	Total
1	DG Khan	1467	191	11.52%	1658
2	Bahawalpur	1603	208	11.49%	1811
3	RY Khan	2034	244	10.71%	2278
4	Kasur	1719	189	9.91%	1908
5	Sheikhupura	1898	206	9.79%	2104
6	Khushab	1109	120	9.76%	1229
7	Lodhran	1210	129	9.63%	1339
8	Lahore	3993	397	9.04%	4390
9	Gujranwala	3067	302	8.96%	3369
10	Chiniot	2171	107	8.73%	1225
11	Muzaffargarh	2073	197	8.68%	2270
12	Rajanpur	1065	98	8.43%	1163
13	Pakpattan	1139	104	8.37%	1243
14	Bahawalnagar	1773	155	8.04%	1928
15	Jhang	1851	147	7.36%	1998
16	Okara	1624	121	6.93%	1745
17	Jhelum	1263	92	6.79%	1355
18	Multan	3246	231	6.64%	3477
19	Chakwal	1649	114	6.47%	1763
20	Layyah	1448	99	6.40%	1547
21	Sargodha	1947	132	6.35%	2079
22	Attock	1801	121	6.30%	1922
23	Mandi Bahauddin	2328	155	6.24%	2483
24	TT Singh	1543	101	6.14%	1644
25	Hafizabad	1302	85	6.13%	1387
26	Mianwali	1991	129	6.08%	2120
27	Vehari	1828	115	5.92%	1943
28	Faisalabad	3879	243	5.90%	4122
29	Khanewal	1817	110	5.71%	1927
30	Bhakkar	1866	110	5.57%	1976
31	Sialkot	2444	140	5.42%	2584
32	Narowal	1636	93	5.38%	1729
33	Gujrat	2265	124	5.19%	2389
34	Rawalpindi	3376	178	5.01%	3554
35	Sahiwal	1636	86	4.99%	1722
36	Nankana Sahib	1290	62	4.59%	1352
	Total	**69298**	**5435**	**7.27**	**74733**

Source: Estimated by Researcher from the Data MICS, 2018

Figure 3.2.3 and Table 3.11 correspondingly show idleness of children ranges from 4.59 percent to 11.52 percent Nankana for Sahib and DG Khan districts respectively. DG Khan ranks 1st out of 36 districts of Punjab for the Idleness of children (It has the highest Idleness of children). While Nankana Sahib ranks last out of 36 districts of Punjab for the Idleness of children (It has the lowest Idleness of children).

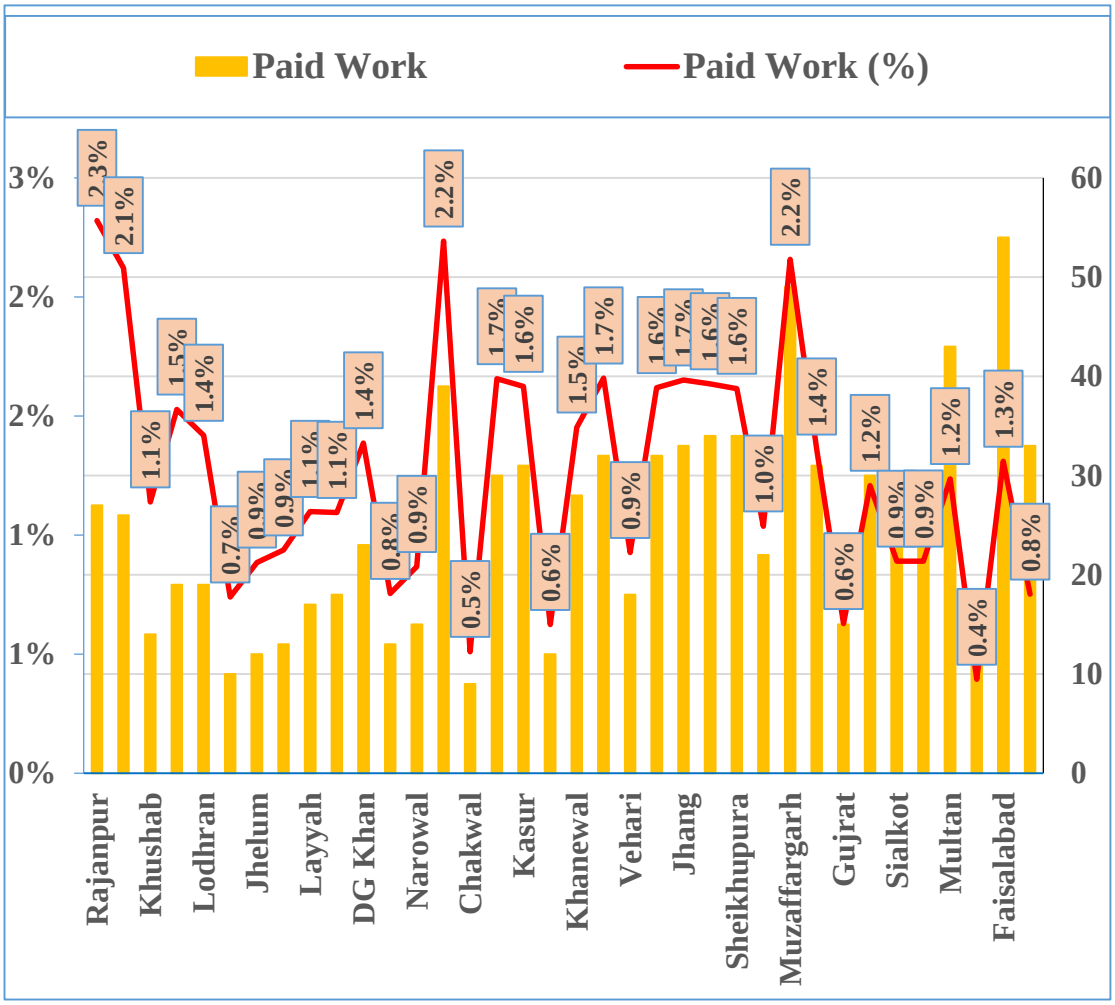

Figure 3.2.4: District Wise Ranking for Status of Children 'Paid Work Only'

Table 3.12
District Ranking According to Children Status 'Child Paid Work', District-Wise Phenomenon [Percentage and Frequency of Children in 5-17 Age Cohort]

Rank	Districts	Not Child Paid Work	Child Paid Work	Percentage of Child Paid Work	Total
1	Rajanpur	1136	27	2.32%	1163
2	Okara	1706	39	2.23%	1745
3	Muzaffargarh	2221	49	2.16%	2270
4	Chiniot	1199	26	2.12%	1225
5	Bahawalpur	1781	30	1.66%	1811
6	Bahawalnagar	1896	32	1.66%	1928
7	Jhang	1965	33	1.65%	1998
8	Sargodha	2045	34	1.64%	2079
9	Kasur	1877	31	1.62%	1908
10	Bhakkar	1944	32	1.62%	1976
11	Sheikhupura	2070	34	1.62%	2104
12	Pakpattan	1224	19	1.53%	1243
13	Khanewal	1899	28	1.45%	1927
14	Lodhran	1320	19	1.42%	1339
15	DG Khan	1662	23	1.39%	1658
16	RY Khan	2247	31	1.36%	2278
17	Faisalabad	4068	54	1.31%	4122
18	Multan	3434	43	1.24%	3477
19	Mandi Bahauddin	2453	30	1.21%	2483
20	Khushab	1215	14	1.14%	1229
21	Layyah	1530	17	1.10%	1547
22	TT Singh	1626	18	1.09%	1644
23	Mianwali	2098	22	1.04%	2120
24	Hafizabad	1374	13	0.94%	1387
25	Vehari	1925	18	0.93%	1943
26	Jhelum	1343	12	0.89%	1355
27	Sialkot	2561	23	0.89%	2584
28	Gujranwala	3339	30	0.89%	3369
29	Narowal	1714	15	0.87%	1729
30	Sahiwal	1709	13	0.75%	1722
31	Lahore	4357	33	0.75%	4390
32	Nankana Sahib	1342	10	0.74%	1352
33	Gujrat	2374	15	0.63%	2389
34	Attock	`910	12	0.62%	1922
35	Chakwal	1754	9	0.51%	1763
36	Rawalpindi	3540	14	0.39%	3554
	Total	**73831**	**902**	**1.20**	**74733**

Source: Estimated by Researcher from the Data (MICS), 2018

Figure 3.2.4 and Table 3.12 show the status of Paid Work of Children, it depicts that Paid Work of Children ranges from 0.39 percent to 2.32 percent for Rajanpur and Rawalpindi districts respectively. Here, Rajanpur ranks 1st out of 36 districts of Punjab for 'Child Paid Work' (It has the highest involvement of children in 'Paid Work'). While Rawalpindi ranks last out of 36 districts of Punjab for 'Child Paid Work' (It has the lowest involvement of children in 'Paid Work').

3.10 SCHOOLING AND WORK STATUS OF CHILDREN IN THE PUNJAB PROVINCE, CHILD AGE WISE PHENOMENON

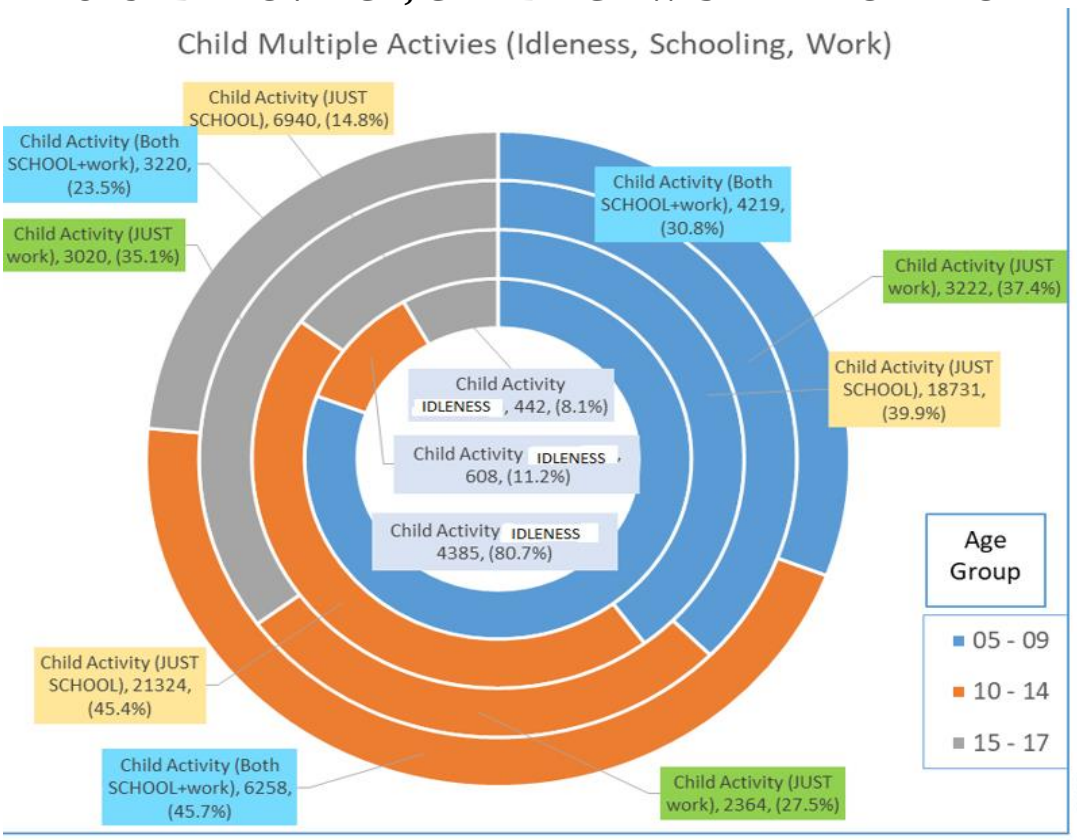

Figure 3.2.5: Percentage of Different Activities of Children in Different Age Groups

Figure 3.2.5 depicts the distribution of different statuses of children. These frequencies and percentages are taken from the data MICS-2018. Firstly, the figure shows the percentage of children going to school in different age groups. In the age group 05-09, 39.9 percent children are going to schools, 45.4 percent children are going to school in the age group 10-14, and 14.8 percent children are going to schools in the age group 15-17. We can observe that children have the highest rate of going to school in the age group 10-14 and lowest in the age group 15-17. Secondly, we can detect the percentage of involvement of children in work. In the age group 05-09, 37 percent children are involved in work, 27.5 percent children are involved in work in age group

10-14 and 35. 1 percent children are involved in work in the age group 15-17. The figure also shows the percentage of idle children in different age groups. In the age group 05-09, 8.1 percent children are idle (neither at school nor at work), 11.2 percent children are idle in the age group 10-14, 80. 7 percent children are idle in the age group 15-17. Lastly, figure shows the percentage of children going to school and working together in different age groups. In the age group 05-09, 30.8 percent children are going to school and work together, 45.7 percent children are going to school and work together in the age group 10-14, 23.5 percent children are going to school and work together in age group 15-17. It shows that a large number of children are dropping school when they enter in the age group 15-17. It means children are dropping out the school before completing lower secondary. Further, it also shows that idleness increases with the age of the child increases.

3.10.1 Descriptive Statistics of Children's activities age group 5-17 (Punjab province)

Table 3.13
Descriptive Statistics of Children's Activities

Description of Variables	Categories	Frequency	Percentage
School Only	Yes	39995	53.5
	No	34738	46.5
Work Only	Yes	15606	20.8
	No	59127	79.2
Neither Work nor School (Idleness)	Yes	5435	7.3
	No	69298	92.7
Work and School together	Yes	13697	18.3
	No	61036	81.7
Paid Work	Yes	902	1.4
	No	73831	98.6
Total (Included in Analysis)		**74733**	**100.0**

Source: Estimated by Researcher from Punjab Multiple Indicators Cluster Survey (MICS), 2018

Table 3.13 shows the descriptive statistics of children's activities. Schooling and work statuses of children in the whole of Punjab reveal that about 53.5 percent children in age cohort 05-17 are currently attending school, 20.8 percent children are involved in work and 7.3 percent fall in the idleness (neither school nor at work). This category is called 'idle'. Probably, this category is 'invisible'. 18.3 percent children are involved in work and school together activities. Thus, overall 39.1 percent children are involved in Children's Work.

Table 3.14
Percentage of Children's activities of age group 5-17 according to gender and age

	Age Groups	School Only	Work Only	Neither Work nor School (Idleness)	Work and School together	Paid Work (Paid Work)
Boys	Age 05-09	9574	1512	2327	2083	74
	Age 10-14	11528	983	218	3245	354
	Age 15-17	3876	1490	87	1635	508
Girls	Age 05-09	9157	1629	2130	2070	23
	Age 10-14	9796	1363	356	3043	25
	Age 15-17	3064	1613	296	1571	16

Source: Estimated by Researcher from the Data (MICS), 2018

Table 3.14 and figures 3.2.6, 3.2.7, 3.2.8 and 3.2.9 provide gender and age wise distribution of children's activities. Table 3.14 provides gender and age wise distribution of children's activities. This table shows that the occurrence of boys' child labour with paid work as compared to girls in all age groups is higher in Punjab while the incidence of girls' Children's Work is higher than boys in all age cohorts. The idleness of girls is higher than boys in age cohorts 10-14 and 15-17. The school enrolment of boys is greater than girls in all age groups of children in Punjab. Boys are highly involved in work and school together activities as compared to girls in all age groups.

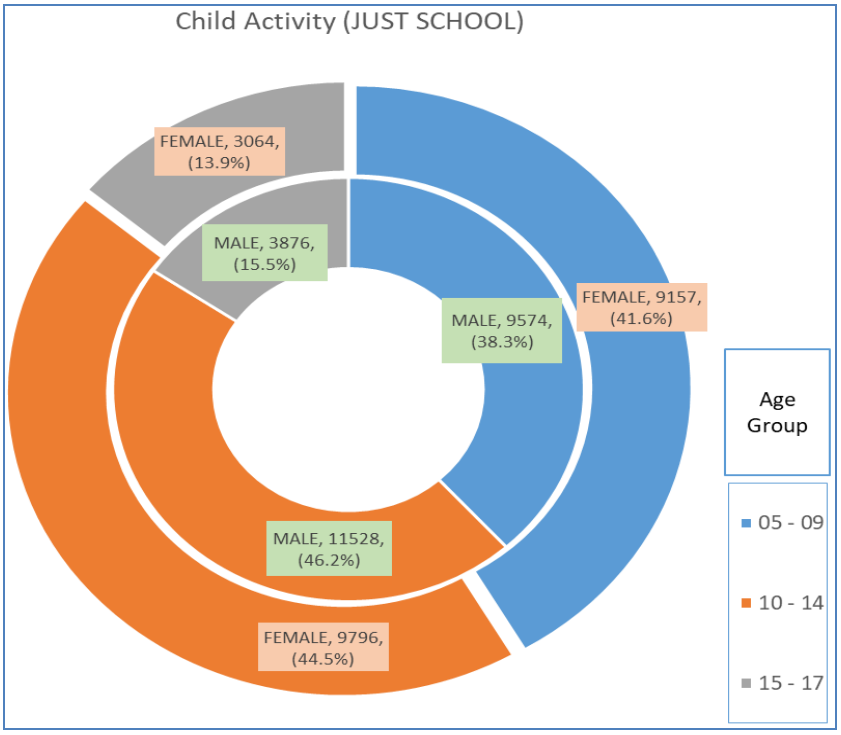

Figure 3.2.6: Distribution of Children 'School Only status' of Children (Punjab province)

Figure 3.2.6 depicts that the school enrolment of boys is greater than girls in age groups 10-14 and 15-17 of children while school enrolment of girls is greater than boys in age groups 05-09 in Punjab. It means girls are dropping out the school before completing the primary level.

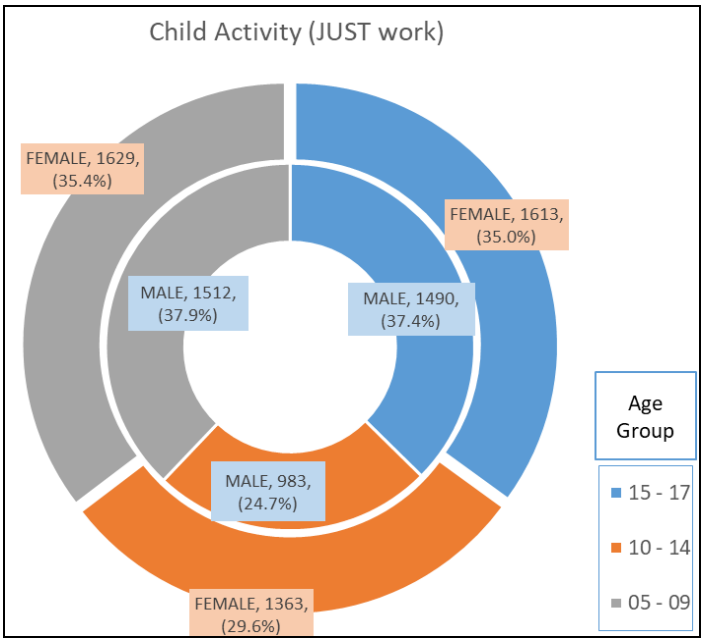

Figure 3.2.7: Gender and Age wise 'Work Only status' of children (Punjab province)

while Figure 3.2.7 shows that the incidence of girls' Children's Work is higher than boys in age cohorts 10-14. While the incidence of boy's Children's Work is greater than girls in age groups 05-09 and 15-17 in the Punjab.

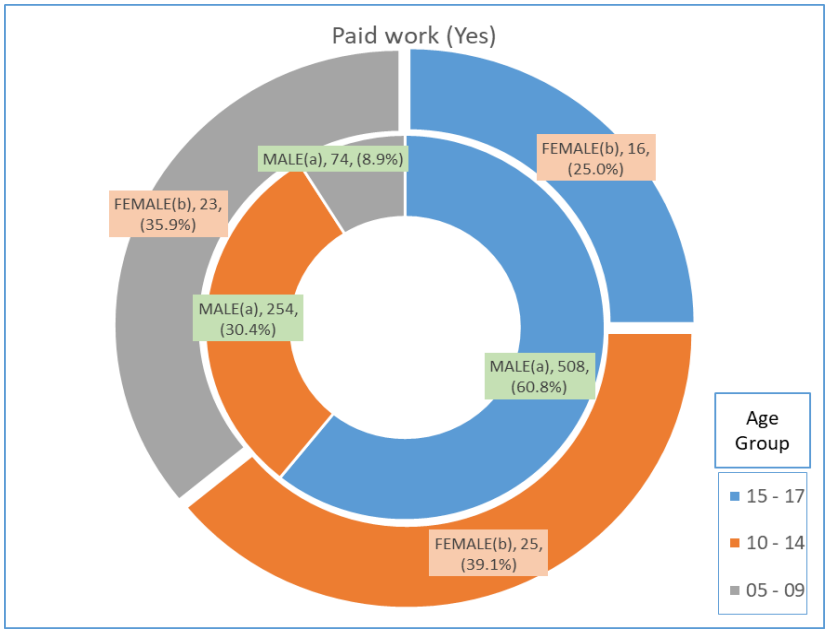

Figure 3.2.8: Gender and Age wise 'Paid Work Status' of children (Punjab province)

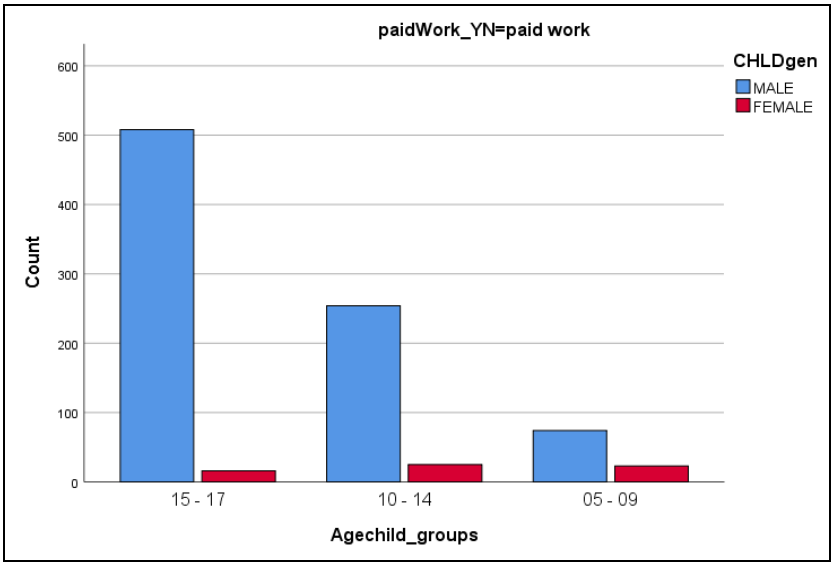

Figure 3.2.9: Gender and Age wise 'Paid Work Status' of children in the (Punjab province)

Figure 3.2.8 and 3.2.9 show that boys are highly involved in paid work activities as compared to girls in age groups 05-09 and 15-17. While girls are highly involved in paid work activities as compared to boys in age groups 10-14.

3.11 ECONOMIC STATES AND CHILDREN

We calculated the Deprivation Score for each household. This score has been categorized into four categories: no poverty, at-risk or vulnerable, Multi-dimensionally poor and severely poor. These categories are the Economic Status of households. The Deprivation Score classifies multiple deprivations in education, health and standard of living, at the individual level. According to the deprivation of each person's household, every person is assigned a deprivation score in each of the 10 component indicators. For this, 100 percent is the maximum score; through each dimension equally weighted (thus, 33.3 percent is the maximum score in each dimension). According to this methodology, there are three dimensions: education, health and standard of living. There are two indicators of education and health dimensions each, thus each component has worth 1/6 (or 16.7 percent). The dimension of the standard of living has six indicators, thus each component has worth 1/18 (or 5.6 percent) (UNDP, 2020). This methodology further has been explained in the previous section. We presented the above mentioned Economic Status of households (categories) with different age groups of children. In simple words, the household's Economic Statuses are associated with different age groups of children. We explained this relationship in Figure 3.2.6. and Table 3.12.

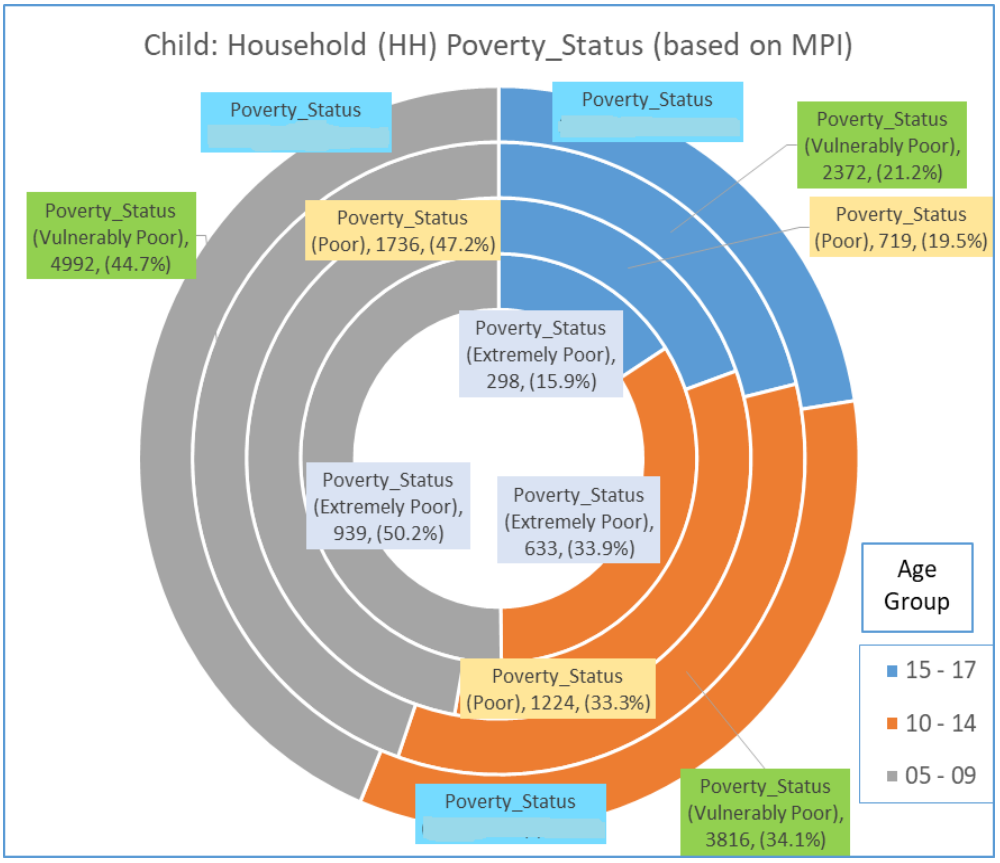

Figure 3.2.10: Child Age Wise Deprivation Score

Table 3.15
Dimensions of Multidimensional Poverty (Situation of that Households where 05-17 children exist in Punjab) [Percentage of Children in 5-17 Age Cohort]

	Children in Severe Poverty	Poor Population	Vulnerable to Poverty
Age 05-09	50.2	47.2	44.1
Age 10-14	33.9	33.3	34.1
Age 15-17	15.9	19.5	21.2

Source: Estimated by Researcher from the Data MICS, 2018

Children are categorized into three age groups (05-09, 10-14 and 15-17). We categorized the Deprivation Score into four categories: at-risk or vulnerable, Multi-dimensionally poor and Severely poor. These categories are the Economic Statuses of households. In figure 3.2.6 and 3.7, we presented the above mentioned Economic Statuses of households (categories) with different age groups of children. In age cohort 05-09 a major part of children is suffering from Multi-dimensional poverty, severe poverty and vulnerability. While, in the age group 15-17 a minor shore of children living with low Multi-dimensional poverty, severe poverty and vulnerability as compared to age groups 05-09 and 10-14. About 50. 2 percent children in the age group 05-09 are reported to be 'severely Poor', while 15.9 percent children in age 15-17 are living in 'Severe Poor'. It shows that poverty decreases with an increase in the age of children in a household (Figure 3.2.10 and Table 3.15).

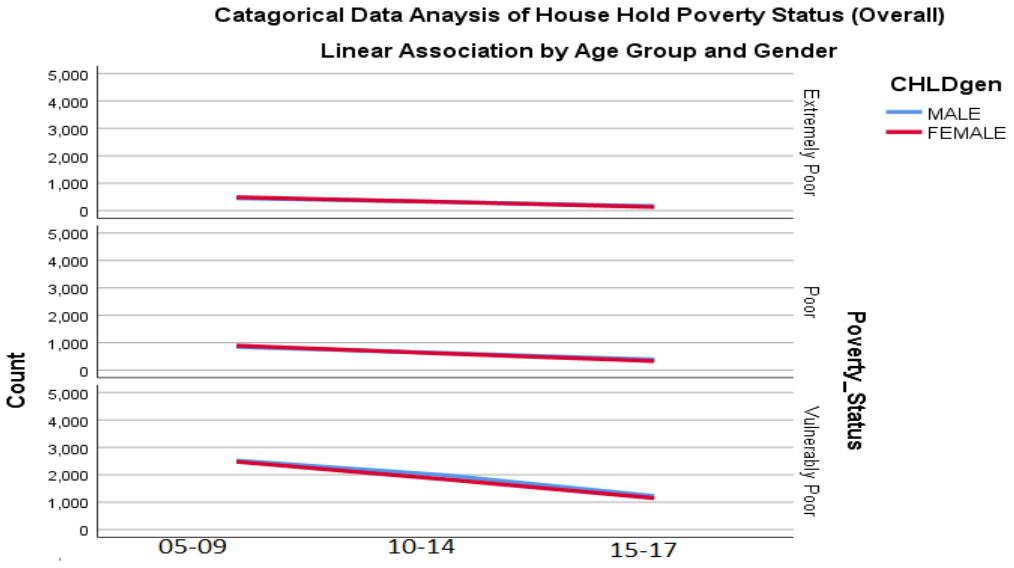

Figure 3.2.11: Age wise Deprivation Score

Figure 3.2.11 shows that Multi-dimensional poverty, severe poverty and vulnerability decrease with an increase in the age of children for both genders.

3.12 CONCLUSION

These facts and figures are pointing out the inequality. It manifests the situation of inequality in human development and inequality across districts of Punjab. A civilized society is defined by the way it facilitates the weakest section of the population. It is not defined by the lifestyle of the richest people. Specifically, it is defined by the planning and policies to reduce inequality. This study depicts that different groups in Pakistan live completely different lives. It is also concluded that boys are facing the worst form of child labour as compared to girls. But it is a reality that girls are also the victims of the worst child labour. A major part of boys aged 15-17 is highly involved in 'Work at Heights'; 65 percent boys are involved in 'Work at Heights', and the major part of boys is involved in child labour under 'Work at Heights' for aged group 15-17. Similarly, 64 percent boys are involved in 'Exposed to Loud Noise or Vibration'; the second highest part of boys is involved in child labour under 'Work at Heights' for the aged group 15-17. A large part of girls aged 10-14 is involved in 'Exposed to Loud Noise or Vibration'; 48.7 percent girls are involved in 'Exposed to Loud Noise or Vibration'. The major part of girls is involved in child labour under 'Exposed to Loud Noise or Vibration' for the 10-14 age group. Similarly, 47.1 percent girls are involved in 'Exposed to dust'; the second highest part of girls is involved in child labour under 'Work at Heights' for the aged group 10-14.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 RESULTS

In this chapter, the results of the Logistic Regression and Two-Stage Least Square Models are being provided. This section illustrates the determinants of schooling, work and idleness for the age group 5-17 years by using the dataset of Punjab MICS 2018. Results have been explained in the light of the following tables. In Chapter 3, we explain in detail that seven different regressions are being regressed due to avoid the risk of multicollinearity; we include and exclude different variables in seven different regressions to avoid the risk of multicollinearity. So, in the below tables, we can see repeated results of different variables but we will interpret the only results of the main effects and then with interactive effects (which in shaded with BLUE). Seven columns in the below table 4.1 show seven different regressions for each model of Child Schooling, Work and Idleness. 1st and 2nd columns of table 4.1 show the main effects (individual effects) of variables whereas 3rd, 4th, 5th, 6th and 7th columns show the interactive effects of some variables. So, we will interpret the main effects of variables from regression 1st and 2nd (columns 1st and 2nd) and different interactive effects from regression 3rd, 4th, 5th, 6th and 7th (columns 3rd, 4th, 5th, 6th and 7th). We regress only one interactive effect for Idleness and Paid Work. So, table 4.2 has the results of the main effects and only one interactive effect. Thus, table 4.2 has only the results of three regressions.

Table 4.1
Empirical Results of Binary Logistic Regression Dependent Variables: Children's Schooling and Children's Work

Independent Variables	Impact of Children's and Households 'characteristics on Children's Schooling and Work		Impact of Children's, Households' and Regional characteristics on Children's Schooling and Work		Effectiveness of Financial Supports across Wealth Quantiles on Children's Schooling and Work		Effectiveness of any Financial Supports across Districts on Children's Schooling and Work		Effectiveness of BISP across Wealth Quantiles on Children's Schooling and Work		Effectiveness of BISP across Districts on Children's Schooling and Work		Interactive effect of GPI and Age of Children on Children's Schooling and Work.	
	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work
	Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)	
Received Financial Support through any Programmes	1.055 (.124)	1.051 (.184)											1.011 (.128)	1.032 (.174)
Received Financial Support through BISP			.963 (.669)	1.152 (.127)										
Received Financial Support through WATAN CARD			1.052 (.611)	.979 (.846)					1.044 (.644)	.955 (.855)	1.022 (.654)	.922 (.885)		
Received Financial Support through BITUMAL			.907 (.749)	1.387 (.301)					.955 (.744)	1.322 (.344)	.911 (.734)	1.354 (.354)		
Wealth index quintile of HH (Richest)	Ref.	Ref.			Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Wealth index quintile of HH(Poorest)	.376 (.000)	3.213 (.000)			.985 (.808)	1.108 (.134)	.376 (.000)	3.222 (.000)	.911 (.169)	1.111 (.111)	.311 (.000)	3.588 (.000)	.378 (.000)	3.219 (.000)
Wealth index quintile of HH (Second Poor)	.652 (.000)	1.974 (.000)			1.088 (.258)	.969 (.712)	.652 (.000)	1.944 (.000)	.911 (.633)	.997 (.972)	.633 (.000)	1.966 (.000)	.633 (.000)	1.933 (.000)

Independent Variables	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work
	Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)	
Wealth index quintile of HH (Middle)	.752 (.000)	1.575 (.000)			1.311 (.004)	.792 (.043)	.752 (.000)	1.511 (.000)	1.477 (.024)	.705 (.039)	.711 (.001)	1.522 (.002)	.711 (.000)	1.343 (.000)
Wealth index quintile of HH (Fourth)	.767 (.000)	1.562 (.000)			1.068 (.590)	1.194 (.287)	.447 (.000)	1.442 (.000)	1.208 (.627)	1.133 (.773)	.737 (.000)	1.562 (.000)	.777 (.000)	1.542 (.000)
Children Aged 05 – 09	Ref.	Ref.	Ref.	Ref.			Ref.	Ref.	Ref.	Ref.	Ref.	Ref.		
Children Aged 10 -14	3.606 (.000)	.870 (.000)	1.216 (.011)	.633 (.632)			3.655 (.000)	.844 (.000)	3.677 (.000)	.880 (.000)	3.622 (.000)	.855 (.000)		
GPI favors boys			Ref.						Ref.		Ref.			
(GPI) Division wise gender parity favors Girls			.952 (.707)						.934 (.777)		.911 (.766)			
(GPI) Gender parity equality between Girls and Boys			.968 (.708)						.922 (.702)		.933 (.768)			
(GPI)favors boys *Age 05-09													Ref.	
(GPI) favors Girls *Age 15-17													1.567 (.005)	
(GPI) equality between Girls and Boys* Age 15-17													1.204 (.069)	
(GPI) favors Girls *Age 10-14													4.643 (.000)	
(GPI) equality between Girls and Boys * Age 10-14													2.966 (.000)	
Economic Status of HH: Rich			Ref.	Ref.							Ref.	Ref.		
Extremely Poor			.416 (.000)	2.377 (.000)							.443 (.000)	1.347 (.000)		
Poor			.466 (.000)	2.042 (.000)							.333 (.001)	2.011 (.000)		

Independent Variables	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work
	Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)	
Vulnerably Poor			.592 (.000)	1.705 (.000)							.666 (.001)	1.785 (.011)		
HH Deprivation Score: Score<0.333 (Rich)			Ref.	Ref.							Ref.	Ref.		
HH Deprivation Score≥0.333 (Multidimensional Poor)			.623 (.000)	1.689 (.000)							.555 (.001)	1.654 (.012)		
MPI Division wise			.105 (.000)	3.360 (.000)			.751 (.173)	.646 (.105)			.732 (.127)	1.030 (.893)	.144 (.543)	3.34 (.011)
Received Remittances	1.064 (347)	.977 (.771)	1.051 (.649)	.874 (.332)	1.004 (317)	.978 (.871)	1.044 (347)	.911 (.771)	1.333 (366)	.966 (.881)	1.333 (344)	.978 (.771)	1.064 (347)	.911 (.711)
Gender of Child: FEMALE	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
MALE	1.138 (.000)	.720 (.000)	.750 (.000)	1.624 (.000)	1.139 (.001)	.820 (.012)	1.166 (.000)	.729 (.000)	1.111 (.001)	.866 (.012)	1.155 (.000)	.726 (.000)	1.155 (.022)	.711 (.001)
Both Mother and Father are alive (NOT Orphanhood)	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Both Mother and Father are NOT alive (YES Orphanhood)	.818 (.038)	1.367 (.002)	.867 (.289)	1.044 (.769)	.823 (.038)	1.355 (.002)	.844 (.038)	1.344 (.002)	.844 (.058)	1.333 (.002)	.822 (.038)	1.366 (.002)	.844 (.038)	1.311 (.002)
Region: RURAL	Ref.	Ref.			Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
URBAN	.876 (.001)	1.106 (.032)	.922 (.274)	1.036 (.690)	.899 (.011)	2.106 (.012)	.876 (.001)	1.196 (.032)	.866 (.061)	2.177 (.012)	.833 (.001)	1.144 (.032)	.822 (.001)	1.155 (.332)
Mother's Education														
None/Less than Primary	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Primary	1.368 (.000)	.738 (.000)	1.184 (.042)	.780 .009	1.543 (.765)	.756 (.777)	1.368 (.000)	.711 (.000)	1.577 (.765)	.766 (.777)	1.344 (.000)	.702 (.000)	1.367 (.000)	.788 (.000)

Independent Variables	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work
	Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)	
Middle	1.368 (.000)	.683 (.000)	1.470 (.001)	.530 .000	1.369 (.001)	.687 (.000)	1.368 (.000)	.666 (.000)	1.399 (.001)	.622 (.000)	1.344 (.000)	.611 (.000)	1.377 (.000)	.655 (.000)
Secondary	1.207 (.001)	.681 (.000)	1.258 (.036)	.465 .000	1.567 (.001)	.789 (.000)	1.207 (.001)	.641 (.000)	1.666 (.001)	.755 (.000)	1.233 (.001)	.644 (.000)	1.233 (.001)	.644 (.000)
Higher	1.094 (.192)	.756 (.004)	1.205 (.119)	.662 .003	1.678 (.192)	.712 (.004)	1.094 (.192)	.733 (.004)	1.444 (.192)	.744 (.064)	1.077 (.192)	.758 (.004)	1.77 (.192)	.788 (.004)
Father's Education														
None/Less than Primary	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Primary	1.299 (.000)	.835 (.033)	1.309 (.001)	.774 (.005)	1.254 (.056)	.832 (.087)	1.211 (.000)	.866 (.013)	1.277 (.446)	.345 (.087)	1.211 (.001)	.833 (.055)	1.255 (.005)	.822 (.053)
Middle	1.509 (.000)	.592 (.000)	1.616 (.000)	.634 (.000)	1.554 (.001)	.555 (.011)	1.509 (.000)	.533 (.000)	1.588 (.011)	.554 (.011)	1.559 (.000)	.597 (.000)	1.555 (.000)	.588 (.000)
Secondary	1.527 (.000)	.606 (.000)	1.778 (.000)	.494 (.000)	1.555 (.000)	.667 (.000)	1.522 (.000)	.691 (.000)	1.324 (.000)	.321 (.000)	1.555 (.000)	.677 (.000)	1.533 (.000)	.608 (.000)
Higher	1.665 (.000)	.508 (.000)	2.280 (.000)	.435 (.000)	1.665 (.000)	.654 (.000)	1.677 (.000)	.544 (.000)	1.633 (.000)	.633 (.000)	1.677 (.000)	.504 (.000)	1.632 (.000)	.556 (.000)
Rank of the children (1st Rank)	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
2nd Rank	1.127 (.001)	.930 (.066)	.575 (.544)	.633 (.632)	1.155 (.765)	.9333 (.666)	1.127 (.001)	.930 (.066)	1.143 (.765)	.922 (.654)	1.127 (.001)	.930 (.066)	1.133 (.001)	.999 (.066)
3rd Rank	1.344 (.000)	.841 (.001)	.675 (.667)	.532 (.509)	1.654 (.432)	.866 (.111)	1.344 (.000)	.841 (.001)	1.622 (.462)	.832 (.111)	1.344 (.000)	.841 (.001)	1.354 (.000)	.833 (.001)
4th Rank	1.169 (.006)	.771 (.000)	.708 (.706)	.518 (.492)	1.122 (.006)	.7718 (.000)	1.169 (.006)	.771 (.000)	1.542 (.006)	.7766 (.000)	1.169 (.006)	.771 (.000)	1.144 (.006)	.765 (.000)
5th Rank	1.011 (.912)	.742 (.009)	(.629) (.612)	.559 (.545)	1.066 (.912)	.766 (.009)	1.011 (.912)	.742 (.009)	1.044 (.913)	.722 (.069)	1.011 (.912)	.742 (.009)	1.065 (.962)	.744 (.039)
6th Rank	.813 (.157)	.865 (.375)	.546 .513	.509 .489	.855 (.144)	.833 (.375)	.811 (.187)	.864 (.375)	.853 (.164)	.844 (.375)	.844 (.187)	.899 (.333)	.844 (.197)	.767 (.375)
7th Rank	.588 (.052)	.713 (.295)	.341 .259	.547 .549	.543 (.052)	.766 (.295)	.589 (.022)	.711 (.285)	.555 (.062)	.766 (.295)	.544 (.032)	.711 (.265)	.576 (.052)	.799 (.295)

Independent Variables	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work
	Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)	
8th Rank	.821 (.702)	.736 (.609)	.336 .284	1.129 .910	.811 (.772)	.738 (.699)	.823 (.702)	.766 (.609)	.811 (.772)	.738 (.699)	.111 (.744)	.722 (.611)	.8445 (.766)	.743 (.633)
Large Family Size	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Small Family Size	2.447 (.009)	.815 (.004)	.601 (.342)	4.769 (.051)	2.411 (.010)	.811 (.044)	.588 (.052)	.713 (.295)	2.466 (.011)	.822 (.054)	2.447 (.009)	.815 (.004)	2.447 (.779)	.888 (.554)
Districts							Ref. Lahore	Ref. Lahore						
Rajanpur	Ref.	Ref.			Ref.	Ref.	1.002 (.978)	1.362 (.001)	Ref.	Ref.	Ref.	Ref.		
Bahawalpur	1.149 (.275)	.595 (.000)			1.133 (.255)	.566 (.011)	.932 (.627)	1.266 (.000)	1.112 (.295)	.554 (.111)	1.467 (.026)	1.346 (.132)		
Bahawalnagar	1.368 (.014)	.654 (.001)			1.333 (.066)	.666 (.055)	1.690 (.001)	.744 (.086)	1.312 (.076)	.655 (.045)	1.030 (.893)	.986 (.950)		
RY Khan	.731 (.112)	1.066 (.602)			.736 (.112)	1.011 (.666)	.777 (.010)	1.543 (.000)	.733 (.002)	1.043 (.666)	.724 (.003)	1.753 (.000)		
DG Khan	.951 (.705)	.993 (.950)			.953 (.705)	.933 (.955)	1.157 (.159)	.993 (.950)	1.955 (.004)	.677 (.013)	.781 (.046)	1.241 (.183)		
Layyah	1.977 (.000)	.672 (.002)			1.999 (.000)	.666 (.022)	2.208 (.000)	.557 (.000)	2.233 (.000)	.355 (.000)	1.808 (.002)	.598 (.009)		
Muzaffargarh	1.326 (.019)	.471 (.000)			1.311 (.044)	.411 (.000)	1.135 (.102)	1.049 (.591)	1.555 (.001)	.333 (.000)	.919 (.094)	1.244 (.061)		
Faisalabad	1.463 (.001)	.677 (.001)			1.466 (.001)	.622 (.001)	1.078 (.600)	1.272 (.128)	1.422 (.006)	.633 (.001)	.751 (.173)	1.475 (.070)		
Chiniot	1.599 (.001)	.781 (.038)			1.577 (.001)	.711 (.038)	1.493 (.028)	.693 (.099)	1.515 (.003)	.402 (.000)	1.630 (.022)	.790 (.397)		
Jhang	1.739 (.000)	.500 (.000)			1.733 (.000)	.501 (.000)	1.430 (.011)	.867 (.378)	.971 (.829)	.804 (.134)	1.681 (.004)	1.046 (.850)		
TT Singh	1.850 (.000)	.550 (.000)			1.844 (.044)	.557 (.001)	1.380 (.163)	.847 (.566)	1.255 (.061)	.722 (.061)	1.092 (.812)	.820 (.695)		
Gujranwala	1.169 (.242)	.587 (.000)			1.166 (.242)	.566 (.000)	.875 (.467)	1.071 (.777)	1.535 (.011)	.802 (.087)	.646 (.105)	1.060 (.848)		
Gujrat	1.628 (.001)	.587 (.000)			1.626 (.001)	.577 (.000)	.473 (.010)	.690 (.112)	1.033 (.536)	.755 (.052)	1.778 (.037)	.871 (.695)		

Independent Variables	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work
	Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)	
Hafizabad	1.602 (.001)	.523 (.000)			1.632 (.001)	.555 (.000)	1.741 (.023)	.825 (.476)	1.411 (.007)	.755 (.043)	1.910 (.039)	1.022 (.957)		
Mandi Bahauddin	1.958 (.000)	.681 (.013)			1.955 (.004)	.677 (.013)	1.360 (.080)	1.105 (.598)	.953 (.705)	.933 (.955)	.956 (.880)	1.377 (.279)		
Narowal	2.239 (.000)	.392 (.000)			2.233 (.000)	.355 (.000)	1.896 (.002)	.638 (.072)	1.999 (.000)	.666 (.022)	3.384 (.002)	.317 (.039)		
Sialkot	1.539 (.001)	.354 (.000)			1.555 (.001)	.333 (.000)	1.337 (.238)	.650 (.222)	1.311 (.044)	.411 (.000)	.714 (.500)	1.027 (.962)		
Kasur	1.434 (.006)	.627 (.001)			1.422 (.006)	.633 (.001)	1.566 (.002)	.570 (.002)	1.466 (.001)	.622 (.001)	1.532 (.005)	.578 (.013)		
Nankana Sahib	1.515 (.003)	.403 (.000)			1.515 (.003)	.402 (.000)	1.437 (.086)	.882 (.598)	1.577 (.001)	.711 (.038)	1.872 (.015)	.894 (.727)		
Sheikhupura	.971 (.829)	.804 (.134)			.971 (.829)	.804 (.134)	.906 (.632)	1.324 (.250)	1.733 (.000)	.501 (.000)	.990 (.975)	1.014 (.967)		
Multan	1.267 (.041)	.743 (.041)			1.255 (.061)	.722 (.061)	1.057 (.551)	1.282 (.015)	1.844 (.044)	.557 (.001)	.771 (.047)	1.500 (.002)		
Khanewal	1.535 (.001)	.802 (.057)			1.535 (.011)	.802 (.087)	1.220 (.136)	1.109 (.499)	1.166 (.242)	.566 (.000)	1.000 (.998)	1.271 (.326)		
Lodhran	1.089 (.536)	.772 (.052)			1.033 (.536)	.755 (.052)	1.288 (.095)	1.027 (.874)	1.626 (.001)	.577 (.000)	.787 (.275)	1.494 (.062)		
Vehari	1.433 (.007)	.761 (.043)			1.411 (.007)	.755 (.043)	1.714 (.001)	.837 (.308)	1.632 (.001)	.555 (.000)	1.486 (.045)	1.350 (.246)		
Rawalpindi	1.535 (.000)	.727 (.014)			1.544 (.000)	.744 (.014)	1.337 (.020)	1.148 (.345)	1.556 (.012)	.564 (.000)	1.013 (.961)	1.388 (.235)		
Attock	1.438 (.008)	.601 (.001)			1.455 (.008)	.611 (.001)	.886 (.457)	1.323 (.178)	1.755 (.000)	.577 (.000)	.899 (.763)	1.601 (.192)		
Chakwal	1.674 (.000)	.498 (.000)			1.611 (.000)	.499 (.000)	1.402 (.028)	.913 (.627)	1.033 (.586)	.644 (.001)	2.268 (.022)	.590 (.232)		

Independent Variables	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work	Schooling	Work
	Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)	
Jhelum	1.516 (.010)	.560 (.002)			1.786 (.012)	.544 (.022)	1.427 (.076)	.779 (.331)	1.543 (.001)	.555 (.000)	1.064 (.649)	.743 (.560)		
Sahiwal	1.310 (.042)	.914 (.506)			1.355 (.033)	.922 (.887)	.993 (.965)	1.332 (.119)	1.654 (.011)	.766 (.071)	1.347 (.005)	1.750 (.019)		
Okara	1.609 (.000)	.588 (.000)			1.433 (.033)	.577 (.000)	1.707 (.000)	.715 (.040)	1.432 (.033)	.511 (.000)	1.544 (.006)	1.362 (.147)		
Pakpattan	1.566 (.001)	.568 (.000)			1.444 (.001)	.532 (.000)	1.959 (.001)	.735 (.147)	1.422 (.001)	.533 (.001)	1.921 (.001)	.846 (.515)		
Sargodha	1.553 (.001)	.597 (.000)			1.543 (.001)	.555 (.000)	1.064 (.649)	1.151 (.377)	1.512 (.001)	.522 (.000)	.706 (.117)	1.836 (.007)		
Bhakkar	1.376 (.011)	.798 (.071)			1.654 (.011)	.766 (.071)	1.347 (.005)	1.090 (.456)	1.611 (.011)	.777 (.011)	2.253 (.027)	1.620 (.003)		
Khushab	1.584 (.002)	.545 (.000)			1.556 (.012)	.564 (.000)	1.916 (.000)	.487 (.002)	1.554 (.002)	.224 (.001)	3.571 (.000)	.354 (.018)		
Mianwali	1.769 (.000)	.545 (.000)			1.755 (.000)	.577 (.000)	1.616 (.000)	.705 (.007)	1.755 (.000)	.533 (.001)	1.576 (.005)	.997 (.989)		
Lahore	1.068 (.586)	.655 (.001)			1.033 (.586)	.644 (.001)	-------	------	1.033 (.586)	.622 (.001)	.964 (.893)	1.003 (.992)		

Table 4.2
Empirical Results of Binary Logistic Regression Dependent Variables: Children's Paid Work and Idleness

Independent Variables	Impact of Children's and Households' characteristics on Children's Paid Work and Idleness		Impact of Children's, Households' and Regional characteristics on Children's Paid Work and Idleness		Effectiveness of Financial Supports across Wealth Quantiles on Children's Idleness
	Paid Work	Idleness	Paid Work	Idleness	Idleness
	Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)
Received Financial Support through any Programme	.342 (.123)	.803 (.000)			
Received Financial Support through BISP			.747 (.333)	.740 (.033)	
Received Financial Support through WATAN CARD			.966 (.767)	.951 (.727)	
Received Financial Support through BITUMAL			.577 (.259)	.556 (.289)	
Wealth index quintile of HH (Richest)	Ref.	Ref.			Ref.
Wealth index quintile of HH(Poorest)	.233 (.337)	.204 (.037)			.800 (.022)
Wealth index quintile of HH (Second Poor)	1.676 (.619)	1.046 (.619)			.846 (.134)
Wealth index quintile of HH (Middle)	1.06 (.398)	1.077 (.358)			.784 (.069)
Wealth index quintile of HH (Fourth)	1.767 (.766)	1.023 (.748)			.773 (.106)

Independent Variables	Paid Work	Idleness	Paid Work	Idleness	Idleness
	Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)
Children Aged 05 - 09	Ref.	Ref.	Ref.	Ref.	Ref.
Children Aged 10 -14	37.87 (.000)	.128 (.000)	3.877 (.123)	.123 (.643)	.144 (.773)
Children Aged 15 -17	3.541 (.000)	.118 (.000)	1.541 (.123)	.156 (.632)	.188 (.332)
Economic Status of HH: Rich			Ref.	Ref.	
Extremely Poor			4.246 (.000)	1.286 (.002)	
Poor			3.928 (.000)	1.383 (.000)	
Vulnerably Poor			2.503 (.000)	1.262 (.000)	
HH Deprivation Score: Score<0.333 (Rich)			Ref.	Ref.	
HH Deprivation Score≥0.333 (Multidimensional Poor)			.279 (.078)	1.001 (.991)	
MPI Division wise			12.47 (.001)	.765 (.078)	.733 (.008)
Received Remittances	.977 (.771)	.895 (.230)	.657 (765)		.795 (.030)
Gender of Child: FEMALE	Ref.	Ref.	Ref.	Ref.	Ref.
MALE	8.674 (.000)	7.567 (.000)	1.674 (.000)	6.567 (.111)	6.533 (.011)
Region: RURAL	Ref.	Ref.	Ref.	Ref.	Ref.
URBAN	1.279 (.078)	1.132 (.020)	1.33 (.788)	2.132 (.220)	1.132 (.110)

Independent Variables	Paid Work	Idleness	Paid Work	Idleness	Idleness
	Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)
Mother's Education					
None/Less than Primary	Ref.	Ref.	Ref.	Ref.	Ref.
Primary	.866 (.118)	.878 (.018)	.776 (.158)	.566 (.118)	.544 (.228)
Middle	1.454 (.688)	1.035 (.648)	2.454 (.678)	2.035 (.888)	2.333 (.128)
Secondary	1.876 (.399)	1.065 (.390)	2.876 (.366)	2.065 (.399)	2.095 (.003)
Higher	1.0787 (.455)	1.064 (.475)	2.0787 (.775)	1.164 (.575)	1.1655 (.575)
Father's Education					
None/Less than Primary	Ref.	Ref.	Ref.	Ref.	Ref.
Primary	.676 (.116)	.876 (.016)	.656 (.126)	.866 (.026)	.856 (.036)
Middle	1.787 (.678)	1.035 (.648)	1.656 (.338)	1.225 (.338)	1.444 (.003)
Secondary	1.875 (.367)	1.065 (.390)	1.8755 (.337)	1.665 (.320)	1.633 (.110)
Higher	1.664 (.454)	1.064 (.475)	1.644 (.424)	1.444 (.445)	1.422 (.335)
Rank of the children (1st Rank)	Ref.	Ref.	Ref.	Ref.	Ref.
2nd Rank	.877 (.114)	.893 (.014)	.567 (.124)	.867 (.024)	.827 (.004)
3rd Rank	.764 (.000)	.764 (.000)	.722 (.011)	.733 (.045)	.711 (.225)
4th Rank	1.676 (.444)	1.056 (.400)	1.633 (.454)	1.022 (.401)	1.011 (.402)

Independent Variables	Paid Work	Idleness	Paid Work	Idleness	Idleness
	Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)
5th Rank	1.565 (.111)	1.298 (.011)	1.522 (.141)	2.298 (.051)	2.338 (.061)
6th Rank	1.543 (.613)	1.444 (.013)	1.333 (.513)	1.774 (.113)	1.224 (.333)
7th Rank	1.188 (.453)	2.188 (.003)	1.187 (.423)	2.144 (.033)	2.111 (.023)
8th Rank	1.654 (.334)	1.609 (.383)	1.622 (.324)	2.644 (.333)	2.633 (.311)
Rajanpur	Ref.	Ref.			Ref.
Bahawalpur	.716 (.359)	1.757 (.001)			1.754 (.031)
Bahawalnagar	.307 (.683)	1.202 (.277)			1.242 (.000)
RY Khan	.853 (.936)	1.537 (.007)			1.557 (.057)
DG Khan	.621 (.204)	2.017 (.000)			2.033 (.000)
Layyah	.636 (.249)	1.011 (.950)			1.022 (.040)
Muzaffargarh	.864 (.653)	1.206 (.235)			1.126 (.005)
Faisalabad	1.300 (.437)	.829 (.239)			.849 (.009)
Chiniot	1.243 (.568)	1.324 (.124)			1.114 (.014)
Jhang	.930 (.839)	1.040 (.792)			1.220 (.012)

Independent Variables	Paid Work	Idleness	Paid Work	Idleness	Idleness
	Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)
TT Singh	1.087 (.842)	.862 (.463)			.772 (.443)
Gujranwala	.845 (.699)	1.675 (.003)			1.335 (.023)
Gujrat	1.205 (.675)	1.102 (.621)			1.567 (.551)
Hafizabad	.891 (.803)	.827 (.352)			.866 (.552)
Mandi Bahauddin	.799 (.551)	1.157 (.403)			1.237 (.003)
Narowal	.733 (.465)	1.013 (.949)			1.053 (.009)
Sialkot	1.263 (.667)	1.023 (.998)			1.033 (.088)
Kasur	1.061 (.872)	1.908 (.000)			1.967 (.000)
Nankana Sahib	.892 (.798)	.667 (.047)			.634 (.037)
Sheikhupura	1.544 (.265)	1.845 (.000)			1.822 (.000)
Multan	1.009 (.978)	1.009 (.955)			1.033 (.955)
Khanewal	1.287 (.491)	739 (.900)			732 (.912)
Lodhran	.698 (.388)	1.364 (.081)			1.322 (.071)

Independent Variables	Paid Work	Idleness	Paid Work	Idleness	Idleness
	Odds Ratio (P-value)		Odds Ratio (P-value)		Odds Ratio (P-value)
Vehari	.638 (.301)	.845 (.362)			.833 (.342)
Rawalpindi	.583 (.172)	.853 (.340)			.822 (.320)
Attock	.417 (.075)	1.195 (.327)			1.133 (.227)
Chakwal	.410 (.084)	1.133 (.495)			1.111 (475)
Jhelum	1.059 (.914)	1.179 (.451)			1.129 (.421)
Sahiwal	.892 (.791)	.742 (.113)			.722 (.123)
Okara	1.420 (.331)	1.042 (.815)			1.032 (.825)
Pakpattan	.885 (.760)	1.165 (.408)			1.155 (.418)
Sargodha	1.139 (.710)	1.070 (.695)			1.022 (.685)
Bhakkar	.981 (.956)	.824 (.264)			.854 (.214)
Khushab	.417 (.057)	1.755 (.002)			1.722 (.022)
Mianwali	.666 (.279)	.990 (.995)			.977 (.915)
Lahore	.751 (.481)	1.769 (.000)			1.743 (.011)

4.2 IMPACT OF WEALTH INDEX QUINTILES OF HOUSEHOLDS, FINANCIAL SUPPORTS AND DISTRICTS

4.2.1 Impact of Wealth Index Quintile of households on Child Schooling, Work and Idleness

Commonly, wealth index measure is used to identify the inequalities in household characteristics. Furthermore, it is also used to get information about the wealth quintiles of households or the economic status of households. Simply, we applied wealth to understand the economic differentials in households. The findings of the study recommend that children having the poorest wealth quintile of households are significantly less likely to attend school as compared to children who live in the richest quintile.

We can see the results in the light of Tables 4.1 and 4.2. The wealth index quintiles have a statistically significant association with Children's Work. For the Poorest Wealth Index Quintile, the probability of work and idleness (neither school nor work) is high and the likelihood of schooling is lower. When wealth status tends to shift from poorer to the richest then, as a result the likelihood of Children's Work tends to decrease but it is insignificant for neither school nor work. Here, paid Children's Work also increases in poor households but it is insignificant for rich households which shows that in the richest quintiles children are not involved in paid work. Consequently, it has been stated that higher wealth status decreases the Children's Work and increases schooling. It also shows that the wealth index quintiles have a statistically significant association with child idleness only for the poorest households. It is insignificant for rich households. For the Poorest Wealth Index Quintile, the likelihood of idleness (neither school nor work) is high as compared to the Richest Wealth Index Quintiles of the households.

4.2.2 Impact of Received Financial Support through any Programme on Children's Work, Schooling and Idleness

Table 4.1 and 4.2 indicate that the variable received Financial Supports through any Programme by the government has a statistically insignificant association with Children's Work and Schooling. But it has significant effect on idleness. It reveals that the amount of financial support provided by the government is not enough to push the children back from work and increase school enrolment.

4.2.3 Interactive effects of financial supports and Wealth index quintiles of households

Table 4.1 and 4.2 also show the interaction effects contain an astounding collection of facts for government and policymakers. The interaction effects of different Financial Supports and effects of Wealth index quintiles of Households are also important. Received Financial Supports through any Programmes* Wealth index quintiles of Household = Interaction term of Received Financial Support through any Programme and Wealth Index Quintiles of households. This interaction term has been used to investigate the 2-way interaction effect of the Received Financial Supports through any Programme by the government and Wealth Index Quintiles of the household. In simple words, these interaction terms show that some households which exist in Fourth Rich Wealth Quintiles get the benefits from the financial supports to reduce Children's Work and dropout from schools. This interaction effects of financial supports with all Poor Wealth Index Quintiles of households have insignificant effects. But the interaction of financial supports with Middle Wealth Quintile in significant. It reveals that the amount of financial support provided by the government is not enough to push the children back from work and increase the enrolment in schools but it has significant influence on Fourth Rich Wealth Quintiles with interaction of financial supports. It shows that amount of financial supports is very low. Interactive effects of wealth quantiles and financial supports show that some households which exist in Second Poor Wealth Index Quintiles and Fourth Rich Wealth Quintiles get the benefits from the financial supports to reduce children's work and idleness but unfortunately, these children are not going to school. The amount of financial supports is very low. It needs to be increased by the government. This is the essence of a good governess to take into account the visionary needs to establish any policy for the poor.

4.2.4 Interactive Effects of Financial Supports and Districts

In table 4.1 the interaction effects contain an astounding collection of facts for the government and policymakers. The combined (interaction) effects of different financial supports and effects of districts are much more effective than individual effects on children's choice of schooling, work and idleness. Financial Support as an individual has a statistically insignificant association between Children's Work, schooling, and idleness but the interaction effect of Financial Supports with different districts of Punjab strengthens the existing impact of the individual variables on the dependent variable child schooling (increase child schooling) but it weakens to work activities (decrease children's work). In simple words, this interaction shows only a few districts

get financial benefits to reduce children's work and dropout rate from schools. On one hand, it shows that financial supports do not decrease children's work as a whole in Punjab province but these financial supports decrease children's work in different districts; financial supports decrease children's work in district Bahawalnagar, Layyah, Kasur, Khushab, Mianwali, Narowal and okara as compared to Lahore but it has no significant impact on rest of the districts of Punjab. On the other hand, results show that financial supports do not increase schooling as a whole in Punjab province but these financial supports impact on different districts; financial supports increase schooling in district Bahawalnagar, Layyah, Chiniot, Jhang, Gujrat, Hafizabad, Mandi Bahauddin, Narowal, Kasur, Nankana Sahib, Vehari, Lodhran, Rawalpindi, Chakwal, Jhelum, Okara, Pakpattan, Bhakkar, Khushab and Mianwali as compared to Lahore but it has not a significant impact on rest of the districts of Punjab.

4.2.5 Impact of Received Financial Support through BISP, WATAN CARD and BITUMAL on Child Schooling Work and Idleness

The variables received BISP, WATAN CARD and BITUMAL by the government have a statistically insignificant association with Child Schooling, Work and Idleness. It reveals that the amount of financial support provided by the government is not enough to increase enrolment in schools. Different social support Programmes enable families to afford their basic needs like food and clothing to some extent. These financial support Programmes alone are unable to increase child enrolment in schools.

4.2.6 Interaction effect of BISP and Wealth Index Quintiles of households

We have explained the interaction effects of receiving different financial supports and effects of Wealth index quintiles of Households in detail. Now, we can see in Table 4.1 that the same results of interactions. It shows that the significant impact of different financial supports with Fourth Rich Wealth Quintiles is due to BISP. Other financial supports like BITULMAAL and WATAN CARD etc. even do not make significant interaction with any wealth index quintiles of households. This is the essence of a good governess to take into account the visionary needs to establish any policy for the poor.

UNDP's latest Human Development Report, 2020 outlined 3 p's of inequality in Pakistan; Power, People, and Policy. Inequalities are widening all the time. Inequalities in Pakistan are the reason for three factors 'power', 'people', and 'policy'. Power can contribute to inequality by giving certain groups more than their fair share of benefits and privileges. People can

contribute to inequality through discrimination based on gender, class, region, or more. Last but not least, a 'Policy' can lead to inequality because it may be ineffective or not helpful to the poorest and the most vulnerable (UNDP,2020).

4.2.7 Interaction effects of BISP and Districts

We have explained the interaction effects of receiving different financial supports and the effects of districts in detail. Now, we can see this in Table 4.1 that the same results of interactions. It shows that the significant impact of different Financial Supports with specific districts is due to BISP. Other financial supports like BITULMAAL and WATAN CARD even do not make significant interaction with any districts of Punjab. In simple words, this interaction shows that only a few districts get financial benefits to reduce Children's Work and dropout rate from schools. On one hand, results show that financial supports do not decrease children's work as a whole in Punjab province but BISP decreases Children's Work in different districts; financial supports decrease Children's Work in district Layyah Kasur, Khushab and Narowal as compared to Rajanpur but it has no significant impact on rest of the districts of Punjab. On the other hand, financial supports do not increase schooling as a whole in Punjab province but this financial supports impact on different districts; financial supports increase schooling in district Bahawalpur, Layha, Chiniot, Jang, Gujrat, Hafizabad, Narowal, Kasur, Nankana Sahib,Vehari, Chakwal, Sahiwal, Okara Pakpatan Bakhar, Khushab and Mianwali as compared to Rajanpur but it has not a significant impact on rest of the districts of Punjab.

4.3 IMPACT OF AGE OF CHILDREN AND GPI

4.3.1 Impact of Age of Children on Child Schooling, Work and Idleness

The involvement of children in work or paid work is a major issue with minor children. The variable children's age is a significant factor for a choice of child schooling, work, and idleness. We can see the results in Tables 4.1 and 4.2. On one hand, results show that in the age group 15-17, a major part of the children is involved in both activities of work and schooling. The odds ratio of the variable the presence of age group 15-17 for child schooling is 1.215. It shows that likelihood of schooling is 21.5 percent higher among those children who exist between the ages 5-17 as compared to the children of age group 05-09 (reference category). Similarly, the odds ratio of the variable the presence of age group 15-17 for the involvement of children in work is 2.914. It shows that likelihood of being engaged in Children's Work is 191.77 percent higher

among the children age group 15-17 as compared to the children age group 05-09 (reference category). Meanwhile (Table 4.2), the odds ratio of the variable the presence of age group 15-17 for involvement in paid work is 27.122. It shows that likelihood of paid work is 2,612.2 percent higher among those children who exist within the age 15-17 as compared to the children of age group 05-09 (reference category). On the other hand, the odds ratio of the variable the presence of age group 15-17 for neither school nor work is .123. It shows that likelihood of being idle (neither school nor work) is 87.7 percent lower among those children who belong to the age group 15-17 as compared to the children of age group 05-09 (reference category).

Table 4.1 shows the results of child schooling and work whereas table 4.2 shows the results of paid children's work and idleness, we can perceive the results for the age group 10-14. The odds ratio of the variable the presence of age group 10-14 for schooling is 3.606. It shows that likelihood of schooling is 260.6 percent higher among those children who exist in the age group 10-14 as compared to the children of age group 05-09 (reference category). Similarly, the odds ratio of the variable the presence of age group 10-14 for the involvement of children in work is .870. It shows that likelihood of being engaged in Children's Work is 13 percent lower among the children age group 10-14 as compared to the children age group 05-09 (reference category). For now, the odds ratio of the variable the presence of age group 10-14 for involvement in Paid Work is 4.295. It shows that likelihood of Paid Work is 329.5 percent higher among those children who exist in the age group 10-14 as compared to the children of age group 05-09 (reference category). It reveals that the likelihood of being engaged in Children's Work for age 10-14 is decreasing but Paid Work is increasing for this age. On the other hand, (in table 4.2), the odds ratio of the variable the presence of age group 10-14 for neither school nor work is .119. It shows that likelihood of being idle is 88.1 percent lower among children belonging to the age group 10-14 as compared to the children of age group 05-09 (reference category). So, a large number of children in the age group 10-14 are involved in Paid Work. It seems children of this age group are overwhelmed by Paid Work.

4.3.2 Impact of Gender Parity Index (GPI) on Child Schooling

The Gender Parity Index (GPI) is a socioeconomic index. This index estimates the relative opportunity to get education for boys and girls. It has a simple calculation. For calculation of this index, the proportion of the enrolled number of girls in schools is divided by the enrolled number of boys in schools. If GPI = 1, it shows equality between boys and girls. If GPI<1, it indicates that gender parity favors boys. If GPI > 1, indicates gender parity that

favors girls. As the value of GPI goes nearer to one, the achieving quality of access between boys and girls increases. International organizations use this index particularly in determining the improvement of developing countries. UNESCO further explains the values of GPI. If the value of GPI lies between 0.97 to 1.03, it will point out the parity between the girls and boys. If the value of GPI is less than 0.97, it will show the parity in favor of boys. If the value of GPI is greater than 1.03, it will show parity in favor of girls. Sometimes it is not possible to get an exact value of 1 when we calculate GPI at region level. Thus, UNESCO provides the above criterion to calculate GPI (UNESCO, 2008). In this study, we calculated GPI at the Division level.

Table 4.1 enumerates the results of Gender Parity (equity) lndex. If it is given gender parity in favor of Girls, the results are insignificant. In simple words, Gender parity Index (GPI) have a statistically insignificant association with child Schooling.

4.3.3 Interaction effects of Gender Parity Index (GPI) and Age of Children

According to the Table 4.1, interaction Effects between the Gender Parity Index (GPI) and Age groups of Children show plausible and interesting results regarding schooling. Gender parity Index (GPI) Division wise * Children Aged 10-14 and 15-17 = interaction term of the Gender Parity Index (GPI) and influence of Children aged 10-14 and 15-17. This interaction term has been used to investigate the 2-way interaction effect of the Gender Parity Index (GPI) and the influence on Children aged 15–17 and 10-14. Now this interaction has a statistically significant association with schooling, but as an individual effect of GPI is insignificant. It depicts that the odds ratio of the variable ‘given gender parity in favor of Girls for age 15-17’ is 1.567 it shows that likelihood of children ‘given gender parity in favor of Girls for age group 15-17’ is 56.7 percent higher (or it increases) among the children age between 15-17 as compared to the children ‘given gender parity in favors of Boys for age 05-07’ (reference category). The odds ratio of the variable ‘given equality between girls and boys for age group15-17 is 1.204 it shows that likelihood of children ‘given equality between girls and boys for age group 15-17’ is 20.4 percent higher (or it increases) among the children ‘given equality between girls and boys for age group 15-17 as compared to the children ‘given gender parity in favors of Boys for age 05-07’ (reference category).

Now, we will examine the intricacies for the age group 10-14 with the interaction of GPI. The odds ratio of the variable ‘given gender parity in favor of Girls for age 10-14’ is 4.643, it shows that likelihood of ‘given gender

parity in favor of Girls for age group 10-14' is 346.3 percent higher (or it increases) among the children age between 10-14 as compared to the children 'given gender parity in favors of Boys for age 05-07' (reference category). The odds ratio of the variable 'given equality between girls and boys for age group 10-14' is 2.966 it shows that likelihood of 'given equality between girls and boys for age group 10-14' is 196 percent higher (or it increases) among the children given equality between Girls and Boys for age group 10-14, as compared to the children 'given gender parity in favors of Boys for age group 05-07, (reference category). It is concluded that if it is 'given parity to girls to get education for the age of 15-17, it increases schooling; the likelihood of children going to school is 56.7 percent higher (or it increases) among the children age between 15-17. If it is 'given parity to girls to get education for the age of 10-14, it increases schooling; the likelihood of children going to school is 346.3 percent higher (or it increases) among the children aged between 10-14. Here, the likelihood of children going to school for the age group 10-14 is higher than the age group 15-17 for children going to school. Similarly, if it is 'given equality between Girls and Boys for the age group 15-17, it increases schooling; the likelihood of children going to school is 20.4 percent higher (or it increases) among the children aged between 15-17. If it is 'given equality between Girls and Boys for the age group 10-14, it increases schooling; the likelihood of children going to school is 196 percent higher (or it increases) among the children aged between 10-14. Here, the likelihood of children going to school for the age group 10-14 is higher than the age group 15-17 for children going to school.

Without the interaction of GPI with age groups results are insignificant, rather give parity in 'favor of girls and' equity to both genders' in education should give more chances to children to get education but the irony of fate is that nearly all children are enrolled in school (before primary level), but nearly one-third of them left the school before completing primary. Despite gender parity in schooling, a country including Pakistan, where less than 40 percent of girls and boys complete primary education, should not be considered a girls' education success. According to this sample data (MICS) 2017-18, the attendance rate in the primary level is 50 percent (38478/75905), the attendance rate in lower secondary is 17.23 percent (13086/75905) and in upper secondary, it remains only 10.55 percent (8009/75905). So, 33 percent (50 percent -17.23 percent =33 percent) of children dropped out the school before completing primary. Also, 40 percent (50 percent -10.55 percent = 40 percent) of children dropped out the school before completing lower secondary. In nutshell, Gender Parity cannot be considered a success in education until this parity occurs along with high levels of enrollment in schools. So, primary and secondary education should be compulsory and provided free of cost by the government. Interestingly, if we observe the

individual effect of GPI, it shows that if it is given gender parity in favor of Girls and equity to both genders, the results are insignificant. But if we observe its effects with interaction terms of different age groups the results are different and significant.

In nutshell, our results show that if it is given parity to girls to get education for the age group 10-14 and 10-14, the likelihood of children going to school for the age group 10-14 is higher than the age group 15-17 for children going to school. If it is given equality between girls and boys for the age group 10-14 and 15-17, the likelihood of children going to school for the age group 10-14 is higher than the age group 15-17 for children going to school. Thus, the likelihood of children going to school for age 15-17 is less even if it is given parity to girls to get education or given equality between girls and boys.

4.4 IMPACT OF ECONOMIC STATUSES OF HOUSEHOLDS AND MPI

4.4.1 Impact of Economic Statuses of household on Children's Work, School and Idleness

The next independent variable is the different Poverty Statuses of households. For creating the different statuses of poor households, we need a deprivation score(s) of each household. For the calculation of the deprivation score of each household, we identify the deprived and non-deprived household or individuals according to the available facilities at an individual level or household level (definitions of these diminutions and indicators are given in the previous chapter).

Table 4.3
Economic Statuses of Households According to Deprivation Scores

Deprivation Score	Status
0 to 20 percent	No poverty
20 percent to 33.3 percent	At-risk or vulnerable to poor
33.3 percent to 50 percent	Multi-dimensionally poor
50 percent to 100 percent	Severely poor

After that, we assign the weights. In this way, we get a deprivation score(s) for each household. We can see in table 4.3, to make differentiate between multi-dimensionally poor and non-poor, we create a cut-off of 33.3 percent or one-third of the weighted indicators. If 's' (deprivation score) $\geq$ 33.3

percent, that household is multi-dimensionally poor. If 's' (deprivation score) ≥ 20 present but 's' (deprivation score) ≤ 33.3 percent, that household (and everyone in it) is vulnerable to poor. If 's' (deprivation score) ≥ 50 percent, that household (and everyone in it) is severely multi-dimensionally poor (UNDP, 2020). After getting these statuses, we create multiple categorical independent variables with the name of the economic statuses of households. We observed the impact of these statuses on Children's Work, schooling and idleness by using Logistic Regression.

Tables 4.1 and 4.2 show the results of Binary Logistic Regression. Findings suggest that the Poverty Status of a Household has a positive impact on Children's Work and idleness, whereas it also has a negative impact on parents' decisions regarding child schooling. In the table 4.1, the odds ratio of the variable the Household Severely Poor Status for Children's Work is 2.377, which shows that the likelihood of children for the involvement in work is 137.7 percent higher among the Households with Severely Poor Status as compared to the Richest Households (reference category). The odds ratio of the variable the household Multi-dimensionally poor Status for Children's Work is 2.042, which shows that the likelihood of children for the involvement in work is 104.2 percent higher among the households with Multi-dimensionally poor Status as compared to the Richest Households (reference category). The odds ratio of the variable the Household Vulnerably Poor Status for Children's Work is 1.705, which shows that the likelihood of children for the involvement in work is 70.5 percent higher among the Households with Vulnerably Poor Status as compared to the Richest Households (reference category). The odds ratio of the variable the Household Severely Poor Status for child schooling is .416, which shows that the likelihood of children for going to school is 58.4 percent lower among the households with Severely Poor Status as compared to the Richest Households (reference category). The odds ratio of the variable the Household Multi-dimensionally poor Status for going to school is .466, which shows that the likelihood of children for the involvement in work is 53.4 percent lower among the Households with Multi-dimensionally poor Status as compared to the Richest Households (reference category). The odds ratio of the variable the Household Vulnerably Poor Status for Children's Work is .592, which shows that the likelihood of children for the involvement in work is 40.8 percent lower among the Households with Vulnerably Poor Status as compared to the Richest Households (reference category). Poverty status of household has a positive impact on child paid work. For the poorest status of household, the likelihood of paid Children's Work is high and the likelihood of schooling is lower. Consequently, it has been stated that the likelihood of involvement of child in Paid work decreases with an increase in household's economic status. Poverty status of household has a positive impact on child Paid Work and Idleness. For the poorest status

of household, the likelihood of idleness (neither school nor work) is high and the likelihood of schooling is lower.

Consequently, it has been stated that the likelihood of involvement of child in work decreases with an increase in household's economic status. Similarly, the likelihood of attending school increases with an increase in a household's economic status.

4.4.2 Impact of Households' Deprivation Score on Children's Work, Schooling and Idleness

As we have explained above after assigning the weights, we get a deprivation score(s) of each household. To make a differentiation between Multi-dimensionally poor and non-poor, we create a cut-off of 33.3 percent or one-third of the weighted indicators. If 's' (deprivation score) ≥ 33.3 percent, that household is multi-dimensionally poor. If 's' (deprivation score) < 0.333 present that household (and everyone in it) is non-poor. After getting these statuses, we create a binary categorical independent variable with the name of Household's Deprivation Score. we observed the impact of these statuses on children's work, schooling and idleness by using Logistic Regression. Tables 4.1 and 4.2 show the results of Households' Deprivation Scores. Findings suggest that multi-dimensionally poor households have a negative impact on parents' decisions regarding child schooling, whereas it also has a positive impact on Children's Work and idleness. likelihood of involvement of child in work decreases with a decrease in Households' Deprivation Score. Similarly, the likelihood of attending school decreases with an increase in Households' Deprivation Score.

4.4.3 Impact of MPI on Children's Work, Schooling and Idleness

For Children's Work Participation, results of Table 4.1 identify the values of MPI: β=1.212 and odds ratio= 3.360. As the MPI variable increases, the likelihood of participation of children in the work variable tends to increase by 236 percent. For schooling, Table 4.1 shows that MPI is β= -2.254 and odds ratio = .105. As the MPI variable increases, the likelihood of participation of children in school variable tends to decrease by 89.5 percent. Table 4.2 shows that MPI is β= 2.524 and odds ratio = 12.477. As the MPI variable increases, the likelihood of children for being idle variable tends to increase by 1,147.7 percent.

4.4.4 Results of Multidimensional Poverty Index for Punjab Pakistan

This study can be unique in the sense that no study to date has been conducted to determine the impact of the 'Deprivation Score of household' on child labour and schooling by applying (MICS), dataset 2017-18 in regression at the 'Household Level'. The multidimensional Poverty Index (MPI) categorizes multiple deprivations in education, health and standard of living.

Table 4.4
Multidimensional Poverty Index for Punjab Pakistan

	Percentage of MPI-poor people (H)	Average intensity across the poor (A)	Multidimensional Poverty Index for Punjab (MPI = H x A)
Punjab	26 percent	46.9 percent	0.123

Source: Estimated by Researcher from the Data (MICS), 2018

Table 4.4 presents that 'H' is a headcount ratio. It reflects the multidimensionally poor people's percentage. It is 16 percent for Punjab province. 'A' shows on average intensity of poverty. It shows on average share of deprivation which a person faces. It is 46.9 present; on average a poor person's share of deprivation is 40 percent. The multiplication of H and A is called MPI. Here, the value of MPI is 0.1. It indicates that in Punjab, multi-dimensionally poor people experience 12.3 percent of the total deprivations that would be experienced if all people were deprived in all indicators. (Methodology has been explained in previous Section).

4.5 IMPACT OF CHILD GENDER, REGION AND ORPHANHOOD

4.5.1 Impact of Child Gender on Child Schooling, Work and Idleness

Gender plays an important role to allocate work and schooling for boys and girls. Even it dictates the occupations for gender. Boys and girls both perform work in fields for long hours. They work in isolation for an extremely long time. They also face the risk of violence and abuse. Moreover, a large portion of girls' child labour is unpaid; girls are often paid less than boys for performing the same job. It is given less amount to girls as compared to boys. Furthermore, the community does not give value to girls' education. It is not measured that household chores as work. Society has different viewpoints about different returns of education regarding to boys and girls. Especially in rural areas, girls are facing so many challenges regarding work and schooling.

In table, 4.1 and 4.2 findings show that the odds ratio of the variable Gender for the involvement of children in work is .720 It shows that likelihood of being engaged in Children's Work is 28 percent lower among boys as compared to the girls (reference category). Table 4.2 shows that the odds ratio of the variable Gender for the involvement of children in Paid Work is 8.674, it shows that likelihood of being engaged in paid Children's Work is 767.4 percent higher among boys as compared to the Girls (reference category). It declares that girls are less involved in Paid Work as compared to boys. However, the likelihood of boys' involvement in paid work is higher as compared to girls. Likelihood of girls for being engaged in unpaid work is higher than boys. The odds ratio of the variable Gender for going to School is 1.138, which shows that likelihood for going to School is 13.8 percent higher among boys as compared to Girls (reference category). These results highlight that boys have higher opportunities of getting Education as compared to girls. The community does not give value to girls' education. It is not measured that household chores as work. Especially in rural areas, girls are facing so many challenges regarding work and schooling.

4.5.2 Impact of Orphanhood on Children's Work and Schooling

Parents' deaths are incredibly damaging incidents for children. This incident brings consequences for the future well-being of a child. The untimely end of parents can decrease the probability of child welfare. This loss can mark the financial status of a family worse. Table 4.1 shows that the odds ratio of the variable the Orphanhood for the involvement of children in work is 1.367. It shows that likelihood of children for the involvement of children in work is 36.7 percent higher among those children whose both mother and father are not alive as compared to the children whose both mother and father are alive (reference category). Table 4.1 also identifies that the odds ratio of the variable the Orphanhood for the schooling of children is .818. It shows that likelihood of children for going to school is 18.2 percent lower among those children whose both mother and father are not alive as compared to the children whose both mother and father are alive (reference category).

4.5.3 Impact of Region (Urban/Rural)

In the logistic regression Model, we use the region (urban or rural) as a binary variable to determine the impact of region on schooling, work and idleness of children. This impact describes the situation of labour market and cultural differences in urban and rural areas. These differences can be seen in tables 4.1 and 4.2. The results demonstrate that although the likelihood of child

paid and unpaid work is increasing in urban areas of Punjab, yet the likelihood of paid work in urban areas is enlarged. We can see in tables 4.1 and 4.2 in urban areas of Punjab the likelihood of child unpaid work is less as compared to paid work.

So, we can see the results of Paid Work in table 4.2, the likelihood of child paid work is higher in urban areas as compared to rural areas. It demonstrates that mostly children in rural areas are working or helping in fields and feeding the animals etc. as unpaid work. While, a major part of children in urban areas are involved in manufacturing products, selling commodities and handiwork etc. These activities provide income in cash: paid activities. It shows that likelihood of children's involvement in all types of Work is 10.6 percent higher among those children who belong to Urban areas as compared to the children who live in Rural areas (reference category). The likelihood of children's involvement in Only Paid Work is 75.2 percent higher among those children who belong to urban areas as compared to the children who live in rural areas (reference category). Table 4.1 also shows the results of schooling. It shows that the likelihood of children going to school is 12.4 percent lower among those children who belong to urban areas as compared to the children who live in rural areas (reference category). So far, children of urban areas have been facilitated with educational opportunities as compared to rural areas. Table 4.2 also shows the results of idleness, the likelihood of children neither at school nor at work is 12.4 percent higher among those children who belong to urban areas as compared to the children who live in rural areas (reference category).

4.6 IMPACT OF REMITTANCES, MOTHER'S EDUCATION AND FATHER'S EDUCATION

4.6.1 Impact of Received Remittances on Children’s Work, Schooling and Idleness

Results show that Remittances have a statistically insignificant association with children’s work, schooling, and idleness. This insignificant impact of remittances on child activities shows that remittances cannot help to reduce the burden of poverty. Inflow of remittances may not be enough to increase the income of households, improve the living standard of people and relax their financial constraints. Consequently, remittance inflow remains insignificant for schooling, work and idleness. It might be possible that those households who have working children do not receive remittance. Extensive literature has revealed the possibility that remittances can decrease the incentive for the children of households to participate in labour. Barajas et al.

(2009) discuss that remittances can decrease the relative opportunity cost to reduce the workforce. Consequently, a decrease in labor supply can create an offsetting. On the contrary, the migrants can face some financial crises after migration to a developed country, that financial crises can be temporary or not. In this situation, the non-migrants can have to increase supply of labour to help migrants financially. In this case, the amount of remittances will not be sufficient and non-migrates will have to increase labour supply as well as Children's Work. This situation will decrease the opportunity cost of leaving school (Posso, 2012; McKenzie and Rapoport, 2011).

In Tables 4.1, this insignificant impact of remittances on child activities shows that remittances cannot help to reduce the burden of poverty. The inflow of remittances may not be enough to increase the income of households, improve the living standard of people and relax their financial constraints. Consequently, remittance inflow remains insignificant for schooling, work and idleness. It might be possible that those households who have working children do not receive remittance.

4.6.2 Impact of Mother's Education on Child Schooling, Work and Idleness

Many studies declare that an educated mother can provide courage and strength to her children. An educated mother can guide and prepare her child in the best way for the future. She can provide better career counseling and education to her child because of updated knowledge. Consequently, it will reduce Children's Work and improve child schooling. The education levels of parents have a significant effect on a child's schooling and work. Table 4.1 depicts that the odds ratio of the variable the Mother has Primary Education for Children's Work is .738, which shows that the likelihood of children for the involvement in work is 26.2 percent lower among those children whose Mother's Education is Primary as compared to the children belonging to less than those mothers who have Primary Education. (which is the reference category). The odds ratio of the variable the Mother has Middle Level of Education for Children's Work is .683, which shows that the likelihood of children for the involvement in work is 31.7 percent lower among those children whose Mother's Education is Middle Level as compared to the children having mothers less than Primary Education (which is reference category). The odds ratio of the variable the Mother has Secondary Level of Education for Children's Work is .681, which shows that the likelihood of children for the involvement in work is 31.9 percent lower among those children whose Mother's Education is Secondary Level as compared to the children whose mothers have less than Primary Education (which is reference

category). The odds ratio of the variable the Mother has Higher Level of Education for children's work is .756, which shows that the likelihood of children for the involvement in work is 24.4 percent lower among those children whose Mother's Education is Higher Level as compared to the children having mothers having less than Primary Education (which is reference category). Table 4.1 also shows that Mother's Educational levels positively impact on their children's education. Table 4.1 and 4.2 show that the likelihood of involvement of the child in work and idleness decreases with an increase in the mother's Levels of Education. Similarly, the likelihood of attending school increases with an increase in the mother's Levels of Education. The Mother's Primary level of Education decreases idleness but other levels of the mother's education have an insignificant impact on idleness.

4.6.3 Impact of Father's Education on Child Schooling, Work and Idleness

The higher levels of father's education provide better education and less behavioral and physical health problems. So, higher education of a father gives more chances to his children to get an education. Table 4.1 shows that the odds ratio of the variable the Father has Primary Education for Children's Work is .835, which shows that the likelihood of children for the involvement in work is 16.5 percent lower among those children whose Father's Education is Primary as compared to the children belonging to those fathers who have less than Primary Education. (which is the reference category). The odds ratio of the variable the Father has Middle Level of Education for children's work is .592, which shows that the likelihood of children for the involvement in work is 40.8 percent lower among those children whose Father's Education is Middle Level as compared to the children having Fathers less than Primary Education (which is reference category). The odds ratio of the variable the Father has Secondary Level of Education for children's work is .606, which shows that the likelihood of children for the involvement in work is 39.4 percent lower among those children whose Father's Education is Secondary Level as compared to the children having Fathers less than Primary Education (which is reference category). The odds ratio of the variable the Father has Higher Level of Education for involvement in children's work is .508, which shows that the likelihood of children for the involvement in work is 49.2 percent lower among those children whose Father's Education is Higher Level as compared to the children whose Fathers have less than Primary Education (which is reference category). Results show that Father's Educational levels positively impact on their children's education. Tables 4.1 and 4.2 show that the likelihood of involvement of child in work and idleness decreases with an increase in the father's Levels of Education. Similarly, the likelihood of

attending school increases with an increase in the father's Levels of Education. The Father's Primary level of Education decreases the child's idleness but other levels of the Father's education have an insignificant impact on the child's idleness.

4.7 IMPACT OF RANK OF CHILDREN AND FAMILY SIZE

4.7.1 Impact of the rank of the children in the household on Child Schooling, Work and Idleness

The rank of the children in the household plays an important role to allocate work and schooling. Even it dictates the occupations for children and educational opportunities. Ranks of the children have a statistically significant association with children's work, schooling, and idleness. Table 4.1 shows that younger children have less likelihood to involve in work as compared to elder children in a household. It illustrates that the lastborn child in a household has a lower likelihood of being engaged in paid and unpaid work as compared to the firstborn child. The likelihood of involvement of the child in work decreases with an increase in the rank of a child in a household. These results highlight that younger children have a higher likelihood to attend school as compared to elder children in a household. Thus, the likelihood of attending school increases with the increase rank of the child in a household. Ranks of the children have a statistically significant association with child idleness. The younger children have less likelihood for idleness as compared to elder children in a household in rank 1st and 2nd. Contrarily, child rank 5th, 6th, 7th and 8th highlight that younger children have a higher likelihood for idleness as compared to elder children in a household.

4.7.2 Impact of Family Size on Child Schooling and Work

The results of this study show that small family size has a negative impact on Children's Work and a positive effect on child schooling. That is to say, children with lesser siblings attain more schooling than those with more siblings. Also, children with fewer siblings are involved in less paid and unpaid work than those with more siblings. Table 4.1 shows that the odds ratio of the variable the Family Size of the household for the involvement of children in Work is .815, which shows that the likelihood of children for the involvement in work is 18.5 percent lower among the Households having a small family size as compared to the households having large family size (reference category). The results of this study show that small family size has a negative impact on children's work and a positive effect on child schooling.

That is to say, children with lesser siblings attain more schooling than those with more siblings. Table 4.1 also shows that the odds ratio of the variable the Family Size of the household for Child Schooling is 2.447, which shows that the likelihood of children for going to school is 144.7 percent higher among the households having a small family size as compared to the households having larger family size (reference category).

4.8 IMPACT OF DISTRICTS OF PUNJAB

4.8.1 Impact of Districts of Punjab on Children's Work, Schooling and Idleness

Where a child is born and brought up determines his chances of living in different statuses as well as his quality of education. So, geographical conditions may determine the Well-Being of a child. This study shows that different circumstances in different districts determine the schooling and work conditions of children. Table 4.1 illustrates that likelihood of being involved in children's work is lower in District Lahore, Rawalpindi, Bahawalpur, Layyah, Bahawalnagar, Muzaffargarh, Faisalabad, Mandi Bahauddin, Khanewal, Jhelum, Vehari, Okara, Attock, Bhakkar, Khushab, Hafizabad, T.T Singh, Jhang, Mianwali, Sargodha, Narowal, Chiniot, Pakpattan, Chakwal, Lodhran, Multan, Nankana Sahib, Kasur, Sialkot, Gujrat and Gujranwala, as compared to Rajanpur. Table 4.2 shows that likelihood of being involved in paid work is lower in District Attock, Khushab and Chakwal as compared to Rajanpur. Table 4.1 also shows that children have a higher likelihood of going to school in districts Rawalpindi, Layyah, Bahawalnagar, Muzaffargarh, Faisalabad, Mandi Bahauddin, Khanewal, Sahiwal, Jhelum, Vehari, Okara, Attock, Bhakkar, Khushab, Hafizabad, T.T Singh, Jhang, Mianwali, Sargodha, Narowal, Chiniot, Pakpattan, Chakwal, Multan, Nankana Sahib, Kasur, Sialkot and Gujrat as compared to Rajanpur. The likelihood of idleness of children is higher in District Lahore, Khushab, D.G Khan, R.Y Khan, Bahawalpur, Shekhupura, Kasur and Gujranwala as compared to Rajanpur.

These results are pointing out the inequality. It manifests the situation of inequality in human development and inequality across districts of Punjab. A civilized society is defined by the way it facilitates the weakest section of the population. It is not defined by the lifestyle of the richest people. Specifically, it is defined by the planning and policies to reduce inequality. According to the report of the United Nations 2020, the richest groups of developing countries do not pay 1 trillion dollars every year in form of taxes. About 7 trillion dollars of poor countries' money have been sent out to the richest countries every year in the form of money laundering. This money must be spent on the welfare of

poor groups. This one fact can be the reason behind the inequality in the huge world. If this money spends on the welfare of the poorest groups, it will increase the amount of social and financial supports for the poor groups. On the other hand, it also creates poverty: that amount can be spent on human development. If this money hadn't left the country, the currency of that poor country wouldn't have devalued. So, this devaluation of the currency would have become the reason for poverty. This study depicts that different groups in Pakistan live completely different lives.

4.9 TWO-STAGE LEAST SQUARES MODEL

We also used Two-Stage Least Squares Technique for treating the School Enrolment variable as an endogenous variable. Enrolment of children in all Schools is an Endogenous variable. Tuition support and Financial support (BISP) are instrumental variables of School Enrolment. Hours of child labour is a dependent variable. We have found the fitted value of the endogenous variable that is not correlated to the error term.

In light of the results of the Two-Stage Least Squares Model, we may determine that Tuition Support (free schooling) cannot provide benefits until that household gets financial support from the government to reduce child labor and increase schooling. Thus, on one hand, schooling is an important factor to reduce child labour as an end onto itself because schooling has positive spillover effects as it reduces child labour. Many studies highlight the need to invest in children and basic needs like food and clothing in developing countries. On the other hand, the amount of financial support provided by the government is not enough to bring the children back from child labour. Different social support Programmes enable families to afford their basic needs like food and clothing to some extent. These financial support Programmes alone can be unable to increase child enrolment in schools. In nutshell, there is a need for financial support from the government to prop up the incomes of poor families. Poor families compel to push their children into child labour as a buffer against negative shocks such as unemployment of parents and loss of agricultural income due to droughts or other natural disasters (Edmonds, 2005).

Free school educational Programmes by the government may not be more effective because poor households need money to keep their body and soul together so parents push their children into child labour. The individual factor, free school education Programmes by the government may not reduce child labour in large numbers. The combined effect of free school education Programmes and financial support Programmes can be much more effective

than the alone effects of financial supports and free school education Programmes to reduce child labour. Here, Tuition support (free schooling) and Financial support (BISP) are instrumental variables of School Enrolment. School Enrolment is an Endogenous variable. When a variable is endogenous, it may be correlated with the disturbance term (OLS biased). The goal of Two-Stage Least Squares is to find the fitted value of the endogenous variable that is not correlated to the error term (like ỹ hat).

4.9.1 Why are not OLS estimates reliable and consistent for the simultaneous Models?

The results of OLS are estimated by not taking into account the relationship of school enrolment (endogenous variable) with error term: School enrolment is also correlated with Tuition Support and Financial Support (BISP). So, the results by taking OLS will not be reliable and consistent. The results of 2SLS estimates are reliable and consistent.

4.9.2 Results of the Two-Stage Least Square Model

Table 4.5
Indirect effects of Tuition Support and Financial Support on Working Hours of Children. Dependent Variable: Working Hours of Children (CL)

Independent Variables	Coef.	Std. Err.	Sig.
Enrollment Ratio	-10.85563	1.265251	0.000
Rank of the children	-1.157047	.1402818	0.000
Gender of Child	1.061059	.3232551	0.001
Constant	12.05446	1.110304	0.000
	R-squared Number of observations	0.0370 3,887	
Test of Endogeneity:	Durbin Hausman test	9.38235 (P=0.0022) 9.39296 (P=0.0022)	
Tests of over identifying restrictions:	Sargan Test Basman Test	.190255 (P=0.6627) .19002 (P=0.6629)	
Instrumental variables: 1. Received Free Tuition Support from GOVT./ PUBLIC schools. 2. BISP: Received Financial Support through 'BISP'.			
Endogenous Variable: Enrolment of the child in GOVT./ PUBLIC, PRIVATE, RELIGIOUS/ MISSIONARY and OTHER schools.			

In Table 4.5, β (School Enrolment) = -10.85563. It shows that the Enrolment of the child in all schools is negatively correlated and this variable moves in opposite direction i.e. per child increase for schooling (increase in School Enrolment) causes 10.85563 times to decrease in children's paid working hours (child labour).

$$(CHILD\ LABOUR\ HOURS)\ ij = \beta o + \beta 1\ (Rank\ of\ the\ children)1ij + \beta 2\ (Father\ alive)2j + \beta 3\ (Gender\ of\ Child)3ij + \beta 4\ (School\ Enrolment)4ij + \varepsilon 1ij \quad (1)$$

$$(School\ Enrolment)\ ij = \gamma o + \gamma 5\ (BISP)5j + \gamma 6\ (Tuition\ Support)6j + \varepsilon 2i\ j \quad (2)$$

If we estimate it by individually running the regression on equation (1) not taking into account the relationship in equation (2) and error terms of equation (1) or the relationship between the endogeneity, simultaneity of the variables (enrolment in all schools is also correlated with Free Tuition Support from Government schools and BISP), so these results by taking OLS will not be reliable and consistent. (The methodology has been presented in the previous chapter 'theoretical framework and methodology'.) The Two Stage Least Squares estimates have reliable and consistent results. Sargan and Basman Tests are used to know about the over identification if the probability value is more than 5 percent, we say the model is correctly specified. Null Hypothesis for Over Identified Instruments: instrument set is valid and the Model is correctly specified. Hausman test is significant, it means there is Endogeneity in this Model. So, Two Stage Least Square is the appropriate technique for this problem.

4.9.3 Impact of Rank of the Children on Child Labour Hours

The rank of the children in a household plays an important role to allocate work and schooling. Even it dictates the occupations for children and educational opportunities. Ranks of the children have a statistically significant and negatively correlated with child labour. Table 4.5 shows that β (Rank of Child) = -1.157047 has a significant effect on Working Hours of Children. It shows that the Rank of the child in a household (Rank of Child) is negatively correlated with Working Hours of Children. This variable moves in opposite direction i.e. per rank of child increase in a household causes 1.157047 times to decrease in children's paid working hours (child labour).

4.9.4 Impact of Child Gender on Child Labour Hours

Gender plays an important role to allocate work and schooling for boys and girls. Even it dictates the occupations for gender. Boys and girls both perform work in fields for long hours. They work in isolation for an extremely long time. They also face the risk of violence and abuse. Moreover, a large portion of girls' child labour is unpaid; girls are often paid less than boys for performing the same job. It is given less amount to girls as compared to boys. Table 4.5 indicates that β (Child Gender) = 1.061059 has a significant effect on Working Hours of Children. It shows that the variable Child Gender is positively correlated with Working Hours of Children. Results show that if the child gender is male it causes 1.061059 times to increase in children's paid working hours (child labour).

CHAPTER 5

POLICY IMPLICATIONS AND CONCLUSION

The Constitution of Pakistan has placed the responsibility for basic education on the state. This responsibility is revealed in Article 37 which states: "The State shall: (a) Promote, with special care, the educational and economic interests of backward classes or areas. (b) Remove illiteracy and provide free and compulsory secondary education within the minimum possible period." Although Article 37 (b) copes with the elimination of illiteracy, yet it did not suggest a specific time period for it. The statement "within the minimum possible period" is not clear in this Article.

According to this sample data (MICS) 2017-18, the attendance rate in the primary level in Punjab is 50 percent, the attendance rate in the lower secondary is 17.23 percent and in the upper secondary, it remains at only 10.55 percent. So, 33 percent (50 percent minus17.23 percent=33percent) of children dropped out the school before completing primary. Also, 40 percent of children dropped out the school before completing lower secondary. Our results of interaction terms of GPI with age groups show that if it is given parity to girls to get education for the age group 10-14 and 10-14, the likelihood of children going to school for the age group 10-14 is higher than the age group 15-17 for children going to school. If it is given equality between girls and boys for the age group 10-14 and 15-17, the likelihood of children going to school for the age group 10-14 is higher than the age group 15-17 for children going to school. Thus, the likelihood of children going to school for age 15-17 is less even if it is given parity to girls to get education or given equality between girls and boys. It is recommended that primary and secondary education should be compulsory and provided free of cost by the government. Further, government should also be provided financial supports with some conditions under compulsion with sending the children to school.

The findings of this data also show the results of the interaction terms, these interaction terms show that some households who exist in Foutrh Wealth Index Quintiles get the benefits from the financial supports to reduce Children's Work and dropout rate from schools. It shows that the interaction effects of financial supports with the poorest wealth index quintiles of households do not have a significant impact on Children's Work and Schooling. It reveals that the amount of financial support provided by the government is not enough to push the children back from work and increase

Enrolment in Schools but it has a significant influence on Fourth Quintile with the interaction of financial supports. It reveals that the amount of financial support is very low. It needs to be increased by the government.

The results of combined (interaction) effects of different financial supports and effects of districts show that only a few districts get financial benefits to reduce Children's Work and dropout rate from schools. Government should increase the amount of financial supports. There should be transparency regarding to provide all types of financial supports. Government can develop effective policies only by improving administrational abilities and setting better target for beneficiaries.

Results of Two-Stage Least Squares Model may determine that Tuition Support (free schooling) cannot provide benefits until that household gets financial support from the government to reduce child labor and increase schooling. According to this data (MICS) 2017-18, 28.2 percent children are out of school in Punjab. Different social support Programmes enable families to afford their basic needs like food and clothing to some extent. These financial support Programmes alone can be unable to increase child enrolment in schools. Free school educational Programmes by the government may not be more effective because poor households need money to keep their body and soul together so parents push their children into child labour. These results call for the government to carry on spending on these Programmes such as the Punjab Education Sector Reform Programme (PESRP), these Programmes decrease the expenditure on education and rise the fascination for schools.

Punjab is a relatively more developed and economically prosperous province but only 53.5 percent children in the age group 5-17 are getting an education without facing the extra burden of work. Thus, overall 39.1 percent children are involved in Children's Work. On the other hand, 20.8 percent children are involved in only work activities and 7.3 percent fall in the category neither school nor at work. This category is called 'idle'. Probably, this category is apparently 'invisible' in this dataset because this dataset seemingly shows children's activities related to schooling and work. It is not mentioned as a variable in this dataset. Mostly, children in this category are disabled or engaged in unhealthy activities. Government should provide facilities for disabled children. Transport facilities should be provided free of cost for poor and idle children by the government. Government should consider the situation of these children and do something productive for their better future.

Results also show that alarming district-wise inequalities with respect to schooling, work and idleness. Resources should be equally distributed among

all districts of Punjab by the government. Government should facilitate the underdeveloped districts of Punjab so that children of that districts can get rid of exploitation. This study depicts that different groups in Punjab live completely different lives. 40.3 percent children aged 5-9 who belong to the poorest households are attending schools. Whereas 67.5 percent children aged 5-9 who belong to the richest households are attending school. This study is pointing out inequality. It manifests the situation of inequality in human development and inequality across the districts of Pakistan. A civilized society is defined by the way to facilitate the weakest section of the population. It is not defined by the lifestyle of the richest people. Specifically, the planning and policies should be designed to reduce inequality and poverty.

Multidimensional deprivations and vulnerability in Punjab Pakistan have been analyzed in this study. The dataset MICS 2017-18 is applied for this study. This study may be helpful for organizing new policy standards. It can also provide useful information to human development experts and statisticians for assessing and using poverty indices.

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APPENDIX-A

Table A-1

District Ranking According to Children Status 'Children's Work and Schooling together', District-Wise Phenomenon (Percentage and Frequency of Children in 5-17 Age Cohort)

Rank	Districts	Not Idle Children	Idle Children	Percentage of Idle Children	Total
1	Rawalpindi	2666	888	24.99%	3554
2	Nankana Sahib	1018	334	24.70%	1352
3	Sahiwal	1310	412	23.93%	1722
4	Vehari	1498	445	22.90%	1943
5	Faisalabad	3198	924	22.42%	4122
6	Gujrat	1859	530	22.19%	2389
7	Chakwal	1379	384	21.78%	1763
8	Multan	2744	733	21.08%	3477
9	Attock	1527	395	20.55%	1922
10	Khanewal	1532	396	20.55%	1927
11	Sialkot	2059	525	20.32%	2584
12	TT Singh	1327	317	19.28%	1644
13	Layyah	1249	298	19.26%	1547
14	Bhakkar	1600	376	19.03%	1976
15	Sargodha	1684	395	19.00%	2079
16	Jhelum	1101	254	18.75%	1355
17	Bahawalnagar	1574	354	18.36%	1928
18	Pakpattan	1015	228	18.34%	1243
19	Hafizabad	1143	244	17.59%	1387
20	Mandi Bahauddin	2060	432	17.40%	2483
21	Okara	1451	294	16.85%	1745
22	Lodhran	1115	224	16.73%	1339
23	Chiniot	1023	202	16.49%	1225
24	Muzaffargarh	1898	372	16.39%	2270
25	Sheikhupura	1761	343	16.30%	2104
26	Mianwali	1775	345	16.27%	2120
27	Bahawalpur	1527	284	15.68%	1811
28	Lahore	3708	682	15.54%	4390
29	Jhang	1692	306	15.32%	1998
30	Rajanpur	994	169	14.53%	1163
31	Narowal	1482	247	14.29%	1729
32	Khushab	1054	175	14.24%	1229
33	RY Khan	1955	323	14.18%	2278
34	DG Khan	1431	227	13.69%	1658
35	Kasur	1672	236	12.37%	1908
36	Gujranwala	2965	404	11.99%	3369
Total		**61036**	**13697**		**74733**

Source: Estimated by Researcher from the Data (MICS), 2018

APPENDIX-B

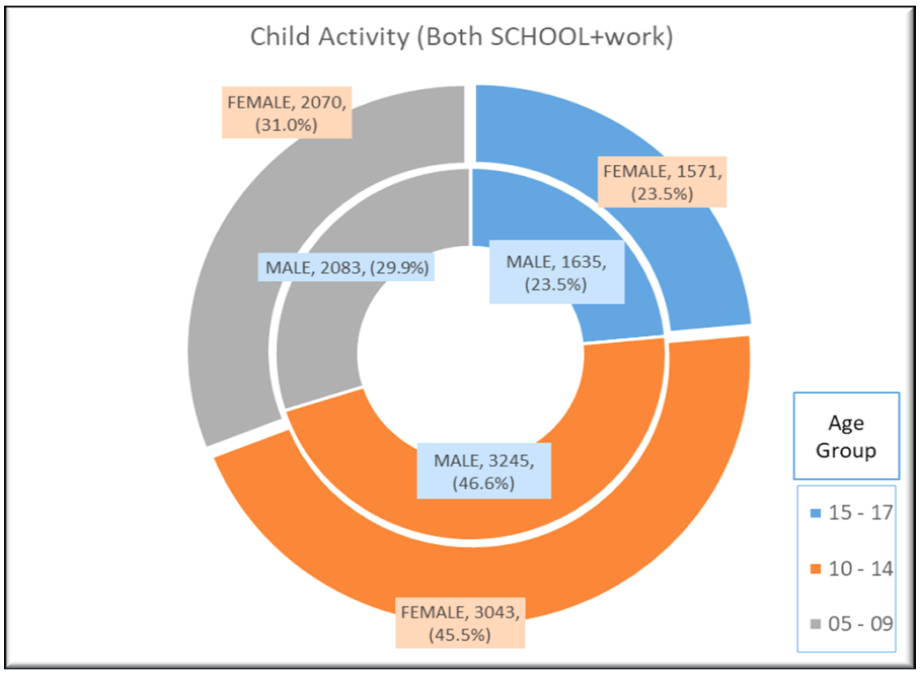

Figure B-2: Gender and Age wise 'Work and School Together Status' of children (Punjab province, Data MICS 2018)

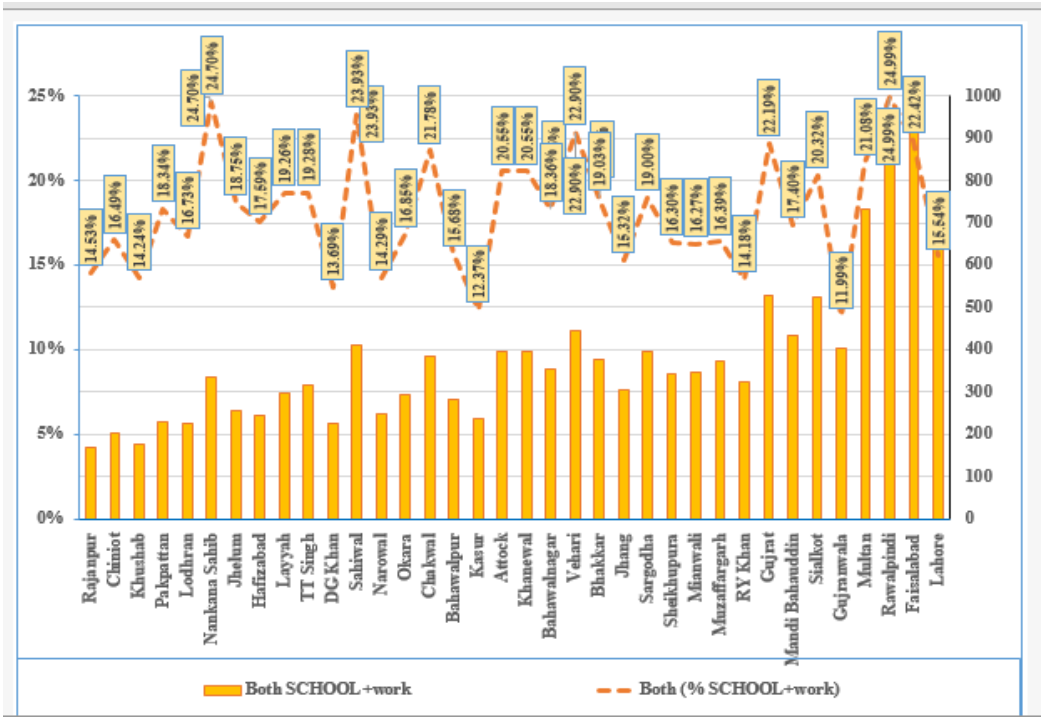

Figure B-3: District Wise Ranking for Children's Status 'Work and School together' (Data MICS, 2018)