

# Determinants of Child Schooling, Work and Idleness: The Case of the Punjab Province

*Research Report No.93*

2014



## **The Social Policy and Development Centre (SPDC)**

Established in 1995, the Social Policy and Development Centre (SPDC), a non-profit research think tank, has made a significant intellectual contribution in placing issues of pro-poor growth and social development on Pakistan's policy-making agenda. With a focus on development, poverty, inequality, governance, social sector policies, climate, gender issues and pro-poor macro-economic policy, it contributes to the national goal of social development through research, policy advice, and advocacy. The Centre also collaborates and cooperates with organizations working on issues relevant to its mandate both at home and abroad and is a partner with several national and international networks on social and economic issues. Determining its own agenda, SPDC has successfully maintained a balance between responsive and proactive social sector research.

*Research Report No.93*

**Determinants of Child Schooling,  
Work and Idleness:  
The Case of the Punjab Province**

*Haroon Jamal*

*December, 2014*

---

**DISCLAIMER:** The views expressed in this research report are those of the author and do not necessarily represent those of the Social Policy and Development Centre (SPDC). Research Reports describe research in progress by the author and are published to elicit comments and initiate further debate.



# **Determinants of Child Schooling, Work and Idleness: The Case of the Punjab Province**

## **ABSTRACT**

This paper analyses the determinants of child activity with regard to schooling, working or neither schooling nor working in the age cohort 5-14 years. Primary data of the Punjab Multiple Indicator Cluster Survey (MICS) conducted in 2010-11 has been used for this study. The objective of the study is to assess the relative influence of poverty, gender equity in educational attainment, parental education and mother's autonomy within the household in the decision regarding child activity. Besides presenting a descriptive relationship between child activities and these determinants, multinomial logit is also estimated in the framework of joint probability distributions. In particular, household multidimensional poverty and gender equity in educational attainment have been estimated for this research.

The study finds the positive (negative) and significantly large impact of poverty on the decision regarding child idleness (schooling). In contrast, coefficients associated with educational gender equity, parental education and mother's empowerment have statistically significant inverse (direct) relationship with the household decision of child idleness (schooling). In terms of relative importance as measured by the marginal impact of these variables on the decision not to send children to school or work, multidimensional household poverty outclasses other determinants.

JEL Classification: D13, I21, J23

Keywords: Child Labour, Child Schooling,  
Multi-dimensional Poverty,  
Gender Equity Index, Punjab, Pakistan



# TABLE OF CONTENTS

---

	<b>Pages</b>
ABSTRACT .....	I
1. PREAMBLE.....	1
2. BRIEF REVIEW OF EMPIRICAL EVIDENCES.....	3
3. SCHOOLING AND WORK STATUS OF CHILDREN IN THE PUNJAB PROVINCE.....	6
3.1 Household Poverty and Child Status .....	10
3.2 Impact of Gender Equity in Education on Children’s Activities.....	13
3.3 Parental Education and Child Schooling.....	15
3.4. Impact of Mother’s Empowerment on Household Decision.....	16
4. MODELING AND ESTIMATION OF DETERMINANTS .....	17
5. ECONOMETRIC EXPLANATION OF DETERMINANTS.....	18
6. CONCLUDING REMARKS.....	24
REFERENCES .....	26
APPENDIX A: THE MICS DATA.....	27
APPENDIX B .....	29
APPENDIX C: BRIEF METHODOLOGY FOR ESTIMATING MULTIDIMENSIONAL POVERTY.....	32
 <b>LIST OF FIGURES AND TABLES:</b>	
Figure 3.1: Distribution of Children Status in the Punjab Province.....	7
Figure 3.2: District Ranking According to Children Status .....	9
Figure 3.3: Estimates of Multidimensional Poverty .....	10
Figure 3.4: Distribution of Children’s Activities According to Household Poverty Status...	11
Figure 3.5: Schooling and Work Status According to Percentile of Household Poverty Score .....	12
Figure 3.6: Schooling and Work Status of Children According to the Percentiles of Gender Equity Index.....	14
Figure 3.7: Schooling and Work Status According to percentile of Mother Education .....	16
Figure 3.8: Schooling and Work Status According to Percentiles of Father Education...	16
Figure 3.9: Mother’s Empowerment and Children Status .....	17

Table 3.1: Children’s Activities – Gender and Regional Scenario.....	7
Table 3.2: Children’s Activities – Divisional Estimates.....	8
Table 3.3: Dimensions of Multidimensional Poverty.....	11
Table 3.4: Distribution of Children’s Activities According to Household Poverty Status ....	12
Table 3.5: Children’s Activities According to Extent of Gender Equity .....	14
Table 5.1: Determinants of Child School Participation – Age Group 5-14 Years .....	22
Table 5.2: Determinants of Child Activity Decision – Age Group 5-14 Years .....	23
Table B-1: Children’s Activities – Districts Ranked According to the Proportion of School participation .....	29
Table B-2: Children’s Activities – Districts Ranked According to the Proportion of Idle Children .....	30
Table B-3: Children’s Activities – Districts Ranked According to the Proportion of Child Labour .....	31

---

## 1. PROLOGUE

The Constitution of Pakistan has placed the responsibility for basic education on the state. This obligation is reflected in the principles of policy in Article 37 which declares: "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 minimum possible period." Although Article 37 (b) exclusively dealt with the removal of illiteracy and provision of free and compulsory secondary education, it did not prescribe a time period rather the provision mentioned is 'within minimum possible period'.

The 18<sup>th</sup> Amendment in the Constitution of Pakistan has abolished the "concurrent list" and gives much more provincial autonomy in education, health and several other sectors. Section 9 of the Constitution (Eighteenth Amendment) Act inserted a new Article 25a in the Constitution, with effect from April 19, 2010. It says: "Right to education --The State shall provide free and compulsory education to all children of the age of 5-16 years in such manner as may be determined by law". Through this amendment in the Constitution, education has become an enforceable right. The caveat, however, remains that compulsory education to all children shall be provided, 'as may be determined by law'. Unfortunately there is no law on the subject at the moment. The subordinate legislation has to be enacted by the respective provincial legislatures. So far no effort has been made to table the necessary legislation in any provincial assembly.

Despite these caveats and anomalies in the Constitution, various governments have, over the years, formulated an assortment of policies and plans to fulfill the constitutional commitment of providing education and removing inequalities. Success has been limited, though, with the result that the current state of education in Pakistan is deplorable. Education in Pakistan has suffered from myriad issues as reflected by various educational indicators including low levels of public spending, high dropout rates from the schooling system, and more importantly acute gender and regional inequalities.

According to the latest available household data of the Pakistan Social and Living Standards Measurement Survey (PSLM, 2012-13), 31 percent (about 13 million)

children of age cohort<sup>1</sup> 5-14 are not attending school in Pakistan. Among them, a very small percentage of children are participating in the labour market, while a sizable percentage of children are neither in school nor at work. In the Punjab, which is a relatively more developed and economically prosperous province, only 76 percent boys and 70 percent girls in this age cohort are attending school. Conversely, 4 to 6 percent of children are reported as workers and a substantial 21 percent (about 5 million) fall in the residual category ('neither school nor at work' or 'invisible' or 'idle' or 'nowhere'). Children in this category are usually engaged in activities like fetching water, collection of firewood, farm or non-farm income generating activities etc. It is argued that 'idleness' should be explicitly considered as one of the child activities in conjunction with schooling and work in modeling and empirical analysis of child welfare.

No national survey captures the activities of the age cohort 5-14 years. The Pakistan Labour Force Survey and PSLM report income generation activities (employment modules) for the age group 10 years and above. Moreover, these surveys do not cover activities of the residual category. Fortunately, the Punjab Multiple Indicator Cluster Survey (MICS)<sup>2</sup> has included a separate child labour module for the age cohort 5-14 years in its latest survey of 2011. This research, by taking advantage of the MICS dataset<sup>3</sup>, evaluates the determinants of children's activities including 'idleness' in the context of Punjab province.

The relevant empirical studies clearly indicate that household poverty status and the level of parental education are key factors that influence a household's decision after controlling standard determinants such as child characteristics, household demography, age and occupation of father and spatial variations with respect to culture and the level of development. Moreover, inspired by the work of Kambhampati (2009) in the Indian context, the study explicitly analyses the impact of educational gender equity in the region and the mother's empowerment and autonomy in a household's decision regarding child schooling, work or idleness.

---

<sup>1</sup> Traditionally in Pakistan, enrolment rates are calculated on the basis of age group 5-9 years and 10-14 years for primary and secondary levels of education respectively.

<sup>2</sup> A brief description of MICS dataset is provided in the Appendix-A.

<sup>3</sup> The author is grateful to Mr. Mohammad Zaman Wattoo, Provincial Project Manager, Strengthening PRS Monitoring-Punjab (a UNDP project) for providing MICS data and permission to use for this research.

---

Specifically, this research estimates a structured demand model of a household's decision regarding child welfare to investigate the relevant determinants in the context of Punjab province using MICS 2011 data. However, the main focus of discussion will be on key determinants: household poverty status, educational gender equity, parental education and mother's empowerment and autonomy.

The paper is structured as follows. The next section presents a brief review of selected articles on the empirics of child schooling and labour in the context of developing countries. The present status of children's activities in the Punjab province is furnished in Section 3. Household poverty status, regional educational gender equity, parental education level and mother's empowerment are also analysed with respect to status of child activities in this section. The theoretical foundation and the empirical specification of the household demand model are discussed in the subsequent section. Section five assembles findings deduced from dichotomous or trichotomous choice framework regarding a household decision's concerning schooling, work participation of their children and idleness. The last section is reserved for a few concluding remarks.

## **2. BRIEF REVIEW OF EMPIRICAL EVIDENCES**

A brief description of the main findings of a few relevant studies on the determinants of child schooling and work in the context of developing countries is furnished below.

Haile and Haile (2012) examined the work participation and schooling for children aged 5-17 years using survey data from rural Ethiopia and by estimating bivariate probit educational attainment equations. Their study concludes that boys are found to be more likely to attend school than their counterparts. Also, the likelihood of combining schooling with work is found to increase with family size and ownership of livestock. Among the two indicators of wealth (land and livestock), only livestock affects the allocation of children's time in their study. They also infer that a large livestock population increases the likelihood of combining school attendance with market work, one aspect of which is time spent on herding. Results from tobit estimation of the equation for age-adjusted educational attainment reveal an inverse association between hours of work and educational attainment implying the detrimental impact that long hours of work have on human capital formation.

Inter-temporal changes in the determinants of primary school enrolment, attendance and child labour in Bolivia for the period 1999 to 2007 are investigated by Grigoli and

Sbrana (2011). Using a trivariate Probit model, evidence is found of a significant decrease in enrolment among children living in rural areas. Interestingly, about 40 percent of the enrolled children were not attending school. When analysing the determinants of the attendance behaviour, poverty turned out to be the most important characteristic. They concluded that although extremely poor children increased their school attendance, they were not able to reduce child labour.

Lodhi et al (2011) analysed the effect of various individual, household, and community level characteristics on the probability that children engage in different activities. Interestingly, they disaggregated schooling further into secular and religious schooling. Data for their study was collected through field surveys conducted in over 40 villages in rural areas across four provinces of Pakistan. Multinomial Probit model was used for their analyses. Their findings indicated that parental perception had significant relationship to the probability of engagement in secular school attendance, religious education, and child labour. In addition, they investigated the relationships between participation in different child activities with location (rural/urban) and children's gender. A lower probability of attending secular school and a higher probability of engaging in child labour among female children in rural areas was found.

An interesting study in the context of Pakistan was conducted by Hou (2010). The study used cross-sectional time-series data from the Pakistan Integrated Household Survey (PIHS) 1998/1999, 2001/2002, and 2005/2006 to examine the relationship between wealth (as measured by household per capita expenditure) and child labour and schooling in Pakistan. It was found that wealth is crucial in determining a child's activities, but is far from being a sufficient condition to enroll a child in school. This is particularly the case for rural girls. The author used nonparametric analysis as well as multinomial logit model to explore the determinants of child welfare in terms of schooling. A universal increase in school enrolment for rural girls from 1998–2006 independently of wealth was concluded from nonparametric analysis. The estimates of multinomial logit regression indicated that wealth is insignificant in determining households' decisions about rural girls' activity. The paper recommended that interventions to increase school enrolment should incorporate broadly targeted, demand-side interventions as well as supply-side interventions.

Kambhampati's (2009) analysis is undertaken in the social context of India, where gender equity varies considerably both across households and across regions. Three

---

hypotheses relating to the impact of mother's autonomy on particular measures of child welfare (participation in school and in the labour market) were tested using the large household socioeconomic survey. The author extended the concept of female autonomy beyond the household to include the constraints imposed by the levels of gender equity prevalent in the regions that the women live in. It was expected that increased autonomy for mothers would increase child schooling and decrease child work. Overall, the results indicated that mother's education (on its own rather than relative to the father's) is an important determinant of the probability of child work and schooling. So is mother's contribution to household expenditure. In both cases he found that the impact depends significantly upon the gender equity of the state that the child lives in. He inferred that in most cases, higher levels of gender equity reinforces mothers' autonomy, while lower levels of regional gender equity offsets any autonomy the mother would otherwise have.

Bacolod and Ranjan (2008) explored the environment in which household wealth and child ability interact to determine children's activities by using longitudinal data from the Philippines. It was concluded by the authors that child ability and household wealth jointly and significantly determine child labour and schooling decisions. They inferred that poor households with high-ability children are more likely to send them to school than poor households with low-ability children. Empirical evidence also suggested that low-income households may let their low ability children remain idle rather than send them to work. According to authors, children in families with a family business and/or a mother who works are more likely to work while attending school at the same time. With respect to supply side determinants, the study inferred that living close to schools with minimal basic facilities — in particular, schools with electricity — makes children more likely to be in school full-time than to remain idle.

Rosati and Rossi (2003) examined the determinants of school attendance and hours of work for Pakistani and Nicaraguan children using simultaneous tobit and probit. They found that higher income and large family size reduce hours of work, and that Pakistani female children were less likely to attend school than their male counterparts.

Ray (2001) simultaneously modelled hours of child labour, educational attainment, and household poverty using Nepalese and Pakistani data and employing 3SLS techniques. He found an inverse association between schooling experience and hours of work, and a positive association between poverty and hours of work.

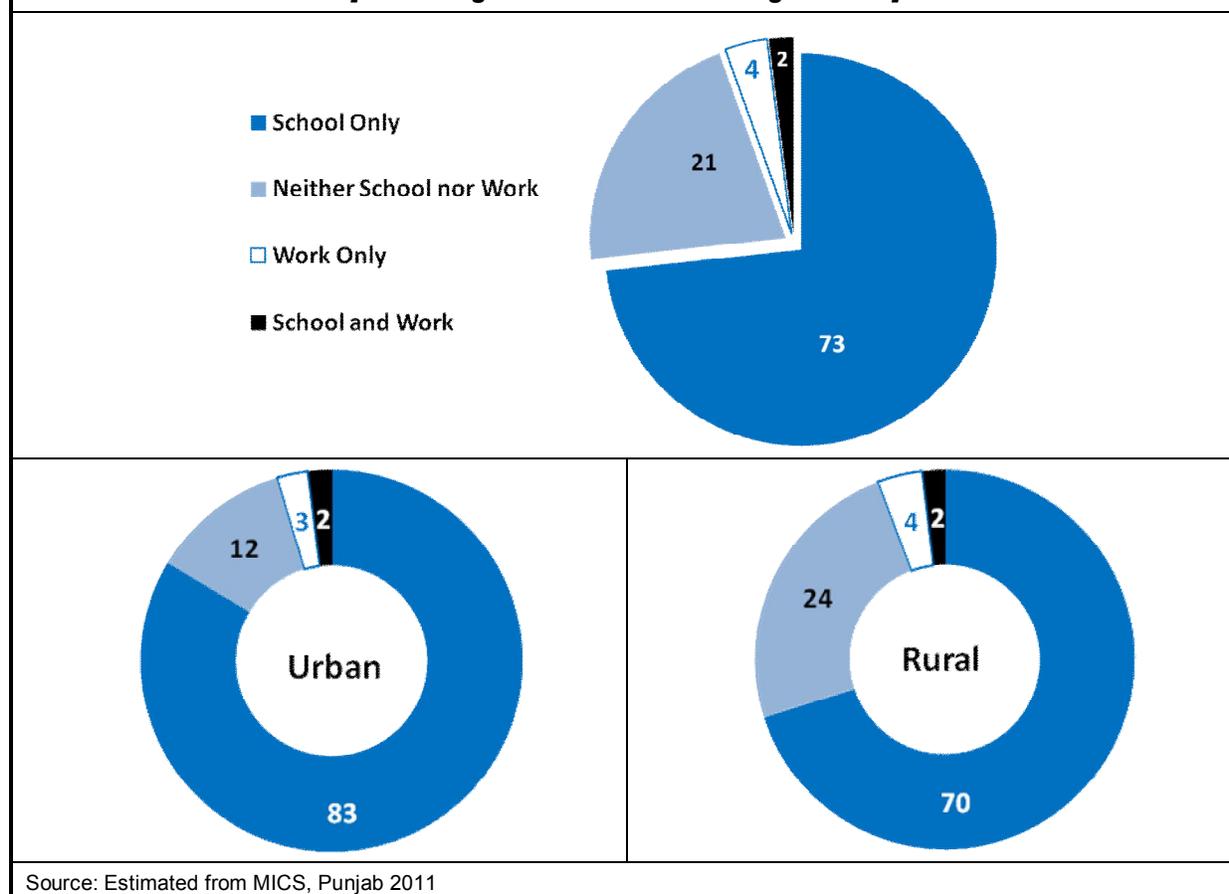
Duraisamy (2000) investigated the determinants of schooling and work participation of boys and girls using a large scale national level survey data. His main contribution was to integrate child schooling and work participation decisions and bringing the third category of children referred to as the 'invisible' or 'idle' children into the rigorous econometric analysis. The widely used household demand model is applied in his study to analyse the family's decision concerning the schooling and work participation of their children. The empirical estimates based on both the dichotomous and a trichotomous choice framework models inferred that parental education and family income significantly increase the probability of children's school attendance and reduce the likelihood of children participating in work. Moreover, according to his findings, mother's education exerts a much stronger effect of increasing school enrolment and reducing child labour. The estimates of gender-specific differences in the determinants of schooling and work participation of children suggested that maternal education increases more the likelihood of a girl child's school enrolment than boys and also reduces more the work participation of girls over boys.

### **3. SCHOOLING AND WORK STATUS OF CHILDREN IN THE PUNJAB PROVINCE**

Access to education is generally gauged with reference to the gross and net enrolment rates, based on the relevant age group. In Pakistan, enrolment rates are calculated on the basis of age group 5-9 years and 10-14 years for primary and secondary levels of education respectively. Therefore, following the tradition, the age group 5-14 is preferred for documentation of the status of children in the Punjab province with respect to schooling, labouring and idleness.

Figure 3.1 portrays the distribution of children's activities in the province. According to the estimates derived from the MICS-2011, about 73 percent of children in the 5-14 age cohort are currently enrolled, 4 percent reported to be working in the labour market, 2 percent are attending school together with work activity and a sizable 21 percent children are 'invisible' or 'idle'. The figure also highlights urban-rural differences in terms of children's activities. The magnitude of residual category of 'idle' children is almost double in rural areas (24 percent versus 12 percent) as compared with their urban counterparts.

**Figure 3.1**  
**Distribution of Children Status in the Punjab Province**  
**[Percentage of Children in 5-14 Age Cohort]**



**Table 3.1**  
**Children's Activities – Gender and Regional Scenario**  
**[Percentage of Children in 5-14 Age Cohort]**

		School Only	Neither School nor Work	Work Only	School and Work
Punjab	Boys	76	17	5	2
	Girls	70	26	2	2
Urban	Boys	83	10	4	2
	Girls	84	13	1	2
Rural	Boys	74	19	5	3
	Girls	65	31	3	1

Source: Estimated from MICS, Punjab 2011

Gender and regional differences in children's activities are furnished in Table 3.1. It is observed that in the context of the urban-rural divide, gender differences in school enrolment are not so harsh in the Punjab province in contrast with other provinces<sup>4</sup>. About 9 and 19 percent difference are evident in the table in rural boys and rural girls respectively from their urban counterparts. The prevalence of boys' child labour in the age cohort 5-14 is slightly higher in rural Punjab, while the incidence of rural girls' child labour is three times higher than their urban counterparts. Highest (31 percent) incidence of 'idle' children is observed in the category of rural girls.

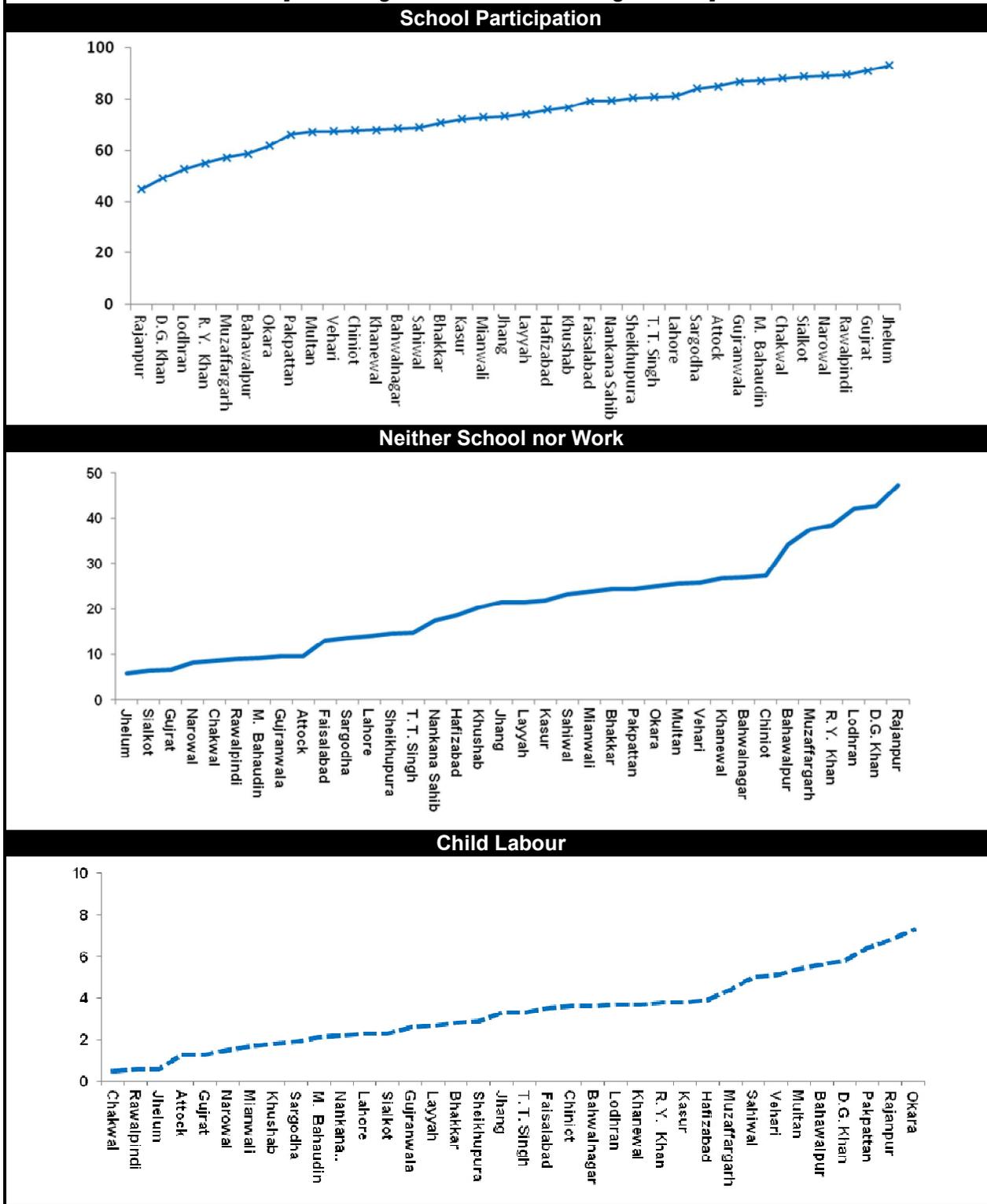
Table 3.2 reflects the divisional estimates of children's activities, while the district-wise picture is portrayed in Figure 3.2. Alarming regional inequalities with respect to schooling and children 'idleness' is evident in the table. Schooling activity varies from 57 to 89 percent for D. G. Khan and Rawalpindi division respectively. Correspondingly children idleness ranges from 9 to 37 percent. The percentage of idle children in D. G. Khan and Bahawalpur is about four times higher than the Rawalpindi division. The table and the figure both reveal south-north divide of Punjab in terms of children schooling, work and idleness.

	School Only	Neither School nor Work	Work Only	School and Work
D.G.Khan	57	37	5	1
Bahawalpur	60	34	4	2
Sahiwal	65	25	6	4
Multan	65	29	5	2
Faisalabad	77	17	4	3
Sargodha	78	19	2	1
Lahore	79	16	3	2
Gujranwala	88	9	2	1
Rawalpindi	89	9	1	2

Source: Estimated from MICS, Punjab 2011

<sup>4</sup> Not shown here, but PSLM data reveals striking gender-wise urban-rural divide, especially in Sindh and Balochistan provinces.

**Figure 3.2**  
**District Ranking According to Children Status**  
**[Percentage of Children in 5-14 Age Cohort]**



Note: Exact Districts' percentages are provided in the Appendix-B, Tables B-1 to B-3.

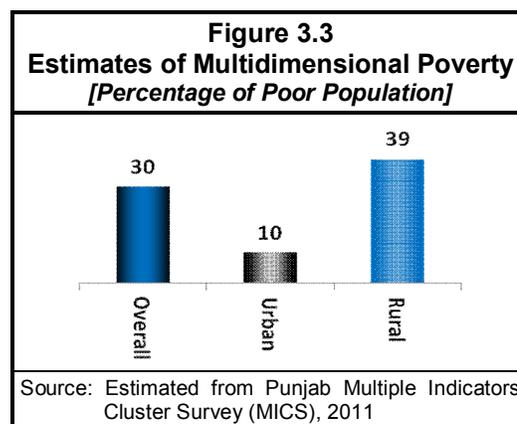
### 3.1. Household Poverty and Child Status

The literature regarding the determinants of child schooling and child labour in the context of developing countries indicates that poverty is among the key factors that explains why parents cannot afford to send their children to school. Consequently, the empirical studies on the subject infer a positive (negative) relationship between poverty and child labour (schooling).

The economic status of household which has a clear link with the decision regarding child schooling, labouring or idleness may be ascertained either through household wealth or through the extent of deprivations. The MICS data provides only possession (Yes/No) of household assets which may be used as a proxy of wealth<sup>5</sup>. However, assessment of wealth would not be appropriate by ignoring the market value of assets, year of purchase and quantity of a particular asset. Therefore, it is preferred to consider household economic status in terms of poverty and deprivations.

To establish household poverty status for this research, a multi-dimensional approach is preferred which considers non-income socio-economic deprivations. Recently a global exercise is carried out by the Oxford Poverty and Human Development Initiative (OPHI) to develop a Multidimensional Poverty Index (MPI) for more than 100 countries with the help of 10 non-income deprivation indicators. Since 2010, the UNDP Human Development Report has started publishing the results of this exercise in terms of countries rankings and magnitude of multidimensional poverty. Thus, the OPHI methodology<sup>6</sup> is applied to the Punjab Multiple Indicators Clusters Survey (MICS, 2011) data to estimate the household poverty score with respect to the selected deprivation indicators.

Figure 3.3 presents the estimates of the incidence of multidimensional poverty. According to the figure, about 30 percent population was poor in the province in 2011. The incidence of rural poverty in terms of multidimensional indicators is substantially high as compared with the urban incidence. Rural incidence is about 39 against the urban incidence of 10 percent.



<sup>5</sup> Interestingly, HOU (2010) used per capita expenditure as a proxy of household wealth in the context of Pakistan.

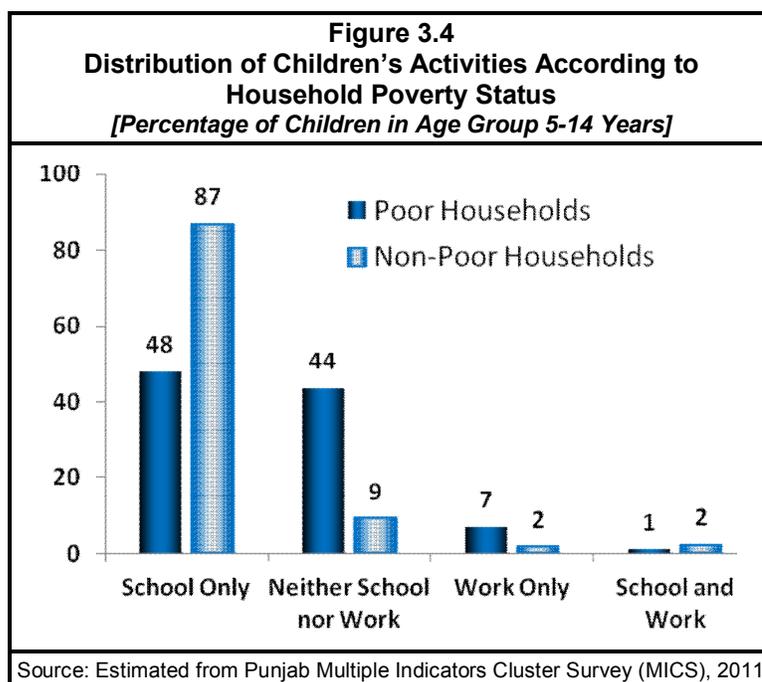
<sup>6</sup> Brief note on OPHI methodology with the list of deprivation indicators is furnished in the Appendix-C.

	<b>Poor Population</b>	<b>Poverty Intensity</b>	<b>Multidimensional Poverty Index</b>	<b>Vulnerable to Poverty</b>	<b>Population in Severe Poverty</b>
<b>Punjab-Overall</b>	<b>30.23</b>	<b>63.83</b>	<b>19</b>	<b>16.89</b>	<b>14.13</b>
Urban	9.60	49.76	5	12.34	3.12
Rural	38.80	65.28	25	18.77	18.70

Source: Estimated from Punjab Multiple Indicators Cluster Survey (MICS), 2011.

Besides poverty incidence or headcount, estimates of different measures of multidimensional poverty (suggested in OPHI-UNDP methodology<sup>7</sup>) are furnished in Table 3.3. It is evident from the table that about 17 percent population of the Punjab is vulnerable to poverty, while 14 percent live in severe poverty conditions (with a poverty score of more than 50 percent). The estimated value of MPI which is a product of poverty incidence and intensity is 19 for the Punjab. The magnitudes of all dimensions of multidimensional poverty for rural areas are significantly higher as compared with their urban counterparts.

Figure 3.4 displays children's activities according to their household poverty status. Significant disparities are evident in the figure. In terms of child schooling, only 48 percent children are enrolled in poor households as compared with 87 percent enrolment in non-poor households. Similarly, the difference in the magnitude of children 'idleness' is 35 (44 versus 9) percentage points between poor and non-poor households. The figure also

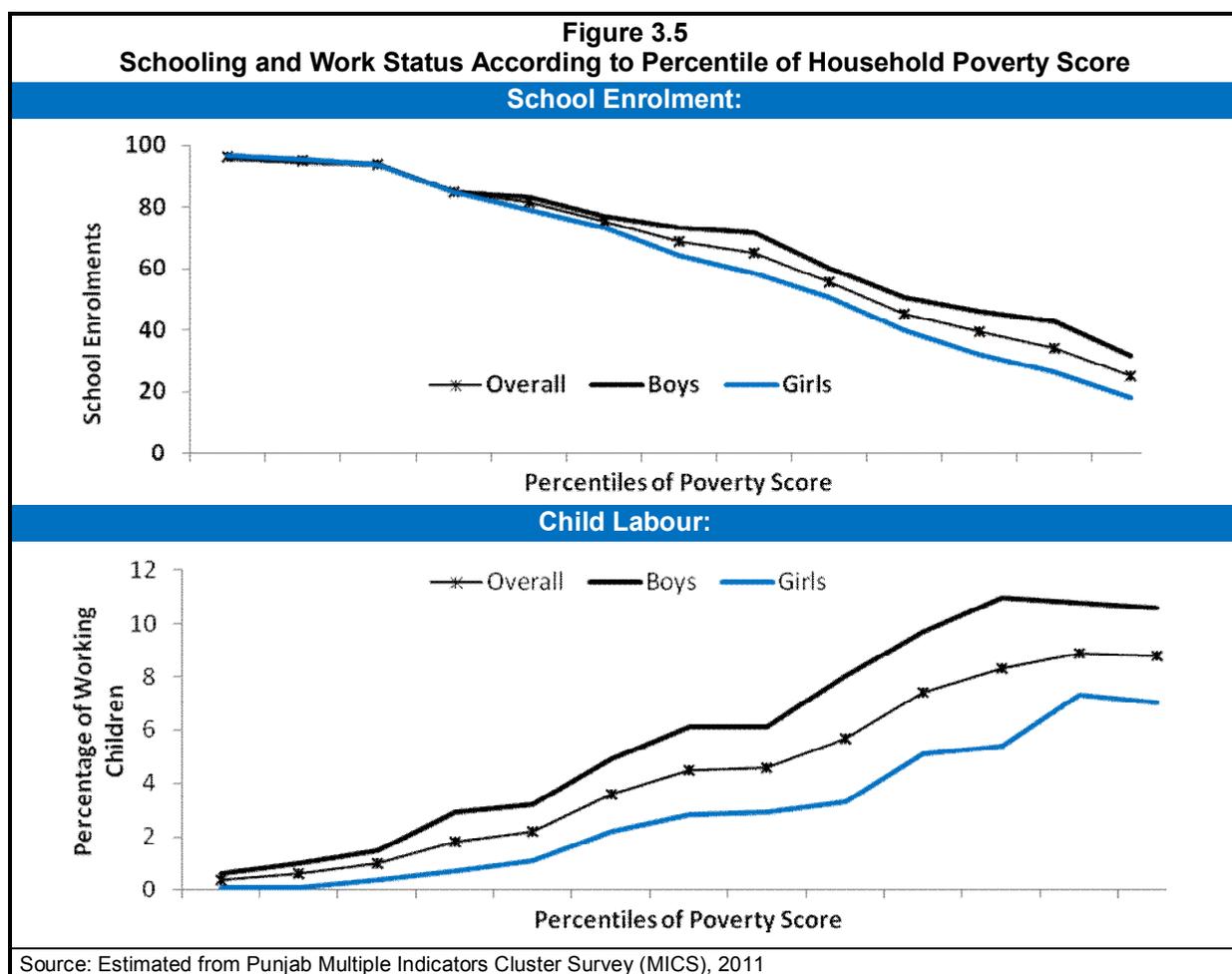


reveals that about 7 percent children of poor households are reported working in the labour market, while the comparative percentage is 2 in non-poor households.

<sup>7</sup> See the Appendix–C for the definition of various poverty aggregates.

		School Only	Neither School nor Work	Work Only	School and Work
High Poverty Score	Overall	48	44	7	2
	Boys	54	35	9	2
	Girls	41	53	5	1
Medium Poverty Score	Overall	79	16	3	2
	Boys	81	13	4	3
	Girls	77	20	2	2
Low Poverty Score	Overall	96	2	1	2
	Boys	95	1	1	3
	Girls	96	2	0	2

Source: Estimated from Punjab Multiple Indicators Cluster Survey (MICS), 2011



To further elaborate the poverty-schooling phenomenon, households are categorised in three percentile (33 percent each) groups on the basis of poverty score. The school enrolment with high poverty score (upper third-33 percent) is only 48, while it is doubled

in households with low poverty (Table 3.4). The disparity is more pronounced between highest and lowest poverty status with respect to the magnitude of idle children. Only 2 percent children are reported 'idle' in the category of household with low poverty score, while the comparative percentage is 44 in household with high poverty. Similarly the incidence of child labour is almost 7 times higher in households with a high incidence of poverty as compared with the group of low poverty households. As expected, noticeable gender differences are evident in the table. About 35 percent boys are in the category of 'neither school nor work' as against 53 percent girls in households with high poverty. A schematic view of this phenomenon is furnished in Figure 3.5. A sharp downward (upward) trend indicates the nature of association between poverty status and schooling (child labour).

### 3.2 Impact of Gender Equity in Education on Children's Activities

Following the work of Kambhampati (2009), it is hypothesised that the gender equity conditions that exist in a region or cluster (adjoining areas) play an important role in determining the probability of child schooling and work<sup>8</sup>. To evaluate the associations between children's activities regarding schooling and working and adjoining educational environment in terms of gender equity, a gender-related education index is developed using the Punjab MICS data. The index follows the principle used by the UNDP Gender-related development index (GDI), known as equally distributed index. The index combines male and female education indices in a way that penalise differences in achievement between men and women<sup>9</sup>. For calculating a combined index for education, male and female cluster indices were first developed by assigning two third weights to adult literacy and one third weights to combine enrolment for age cohort 5-24. These separate gender indices were then combined using the following formula.

---

<sup>8</sup> To test this hypothesis in the Indian context, Kambhampati developed UNDP Gender-Related Development Index (GDI) at state level due to non-availability of disaggregated data at lower administrative levels. The author made an implicit assumption that gender equity does not vary within states. GDI addresses gender-gaps in life expectancy, education, and incomes. Unfortunately, district-wise disaggregated data of income (GDP) and life expectancy is not available in Pakistan and thus the only education component of GDI is used for this study to scrutinise the role of gender equity in education on household decision regarding their children schooling or labouring. Hence, the index captures the disparities between men and women in educational attainment only.

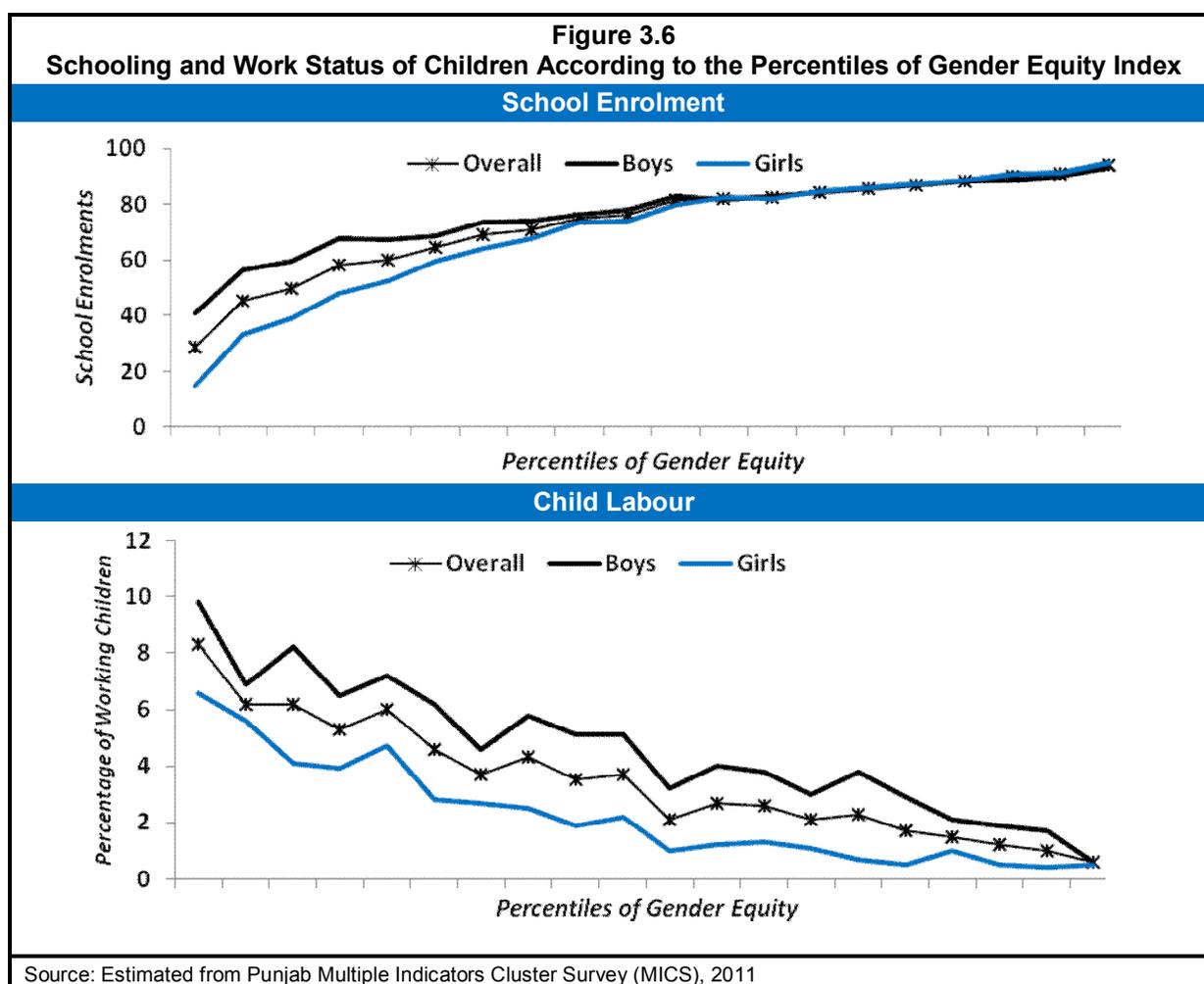
<sup>9</sup> The GDI is defined as a "distribution-sensitive measure that accounts for the development impact of existing gender gaps. Distribution sensitive means that the GDI takes into account not only the average or general level of well-being (here achievement in education), but focuses also on how this well-being is distributed between different groups within society.

$$\left( \left[ \text{Female population share} * (\text{Female education index})^{-1} \right] + \left[ \text{Male population share} * (\text{Male Education Index})^{-1} \right] \right)^1$$

The index is estimated at the level of sampling cluster (Primary Sampling Unit – PSU) and ranges from 0 to 1 (perfect inequality to perfect equality).

	School Only	Neither School nor Work	Work Only	School and Work
Low Gender Equity	60	33	5	2
Medium Gender Equity	74	21	4	1
Higher Gender Equity	85	10	2	2

Source: Estimated from Punjab Multiple Indicators Cluster Survey (MICS), 2011

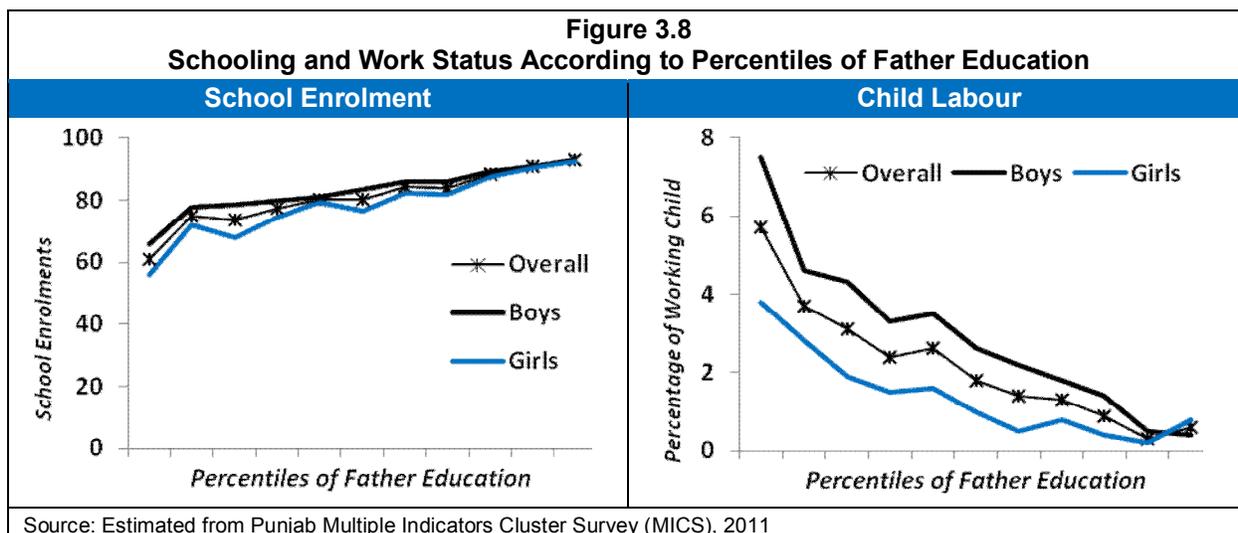
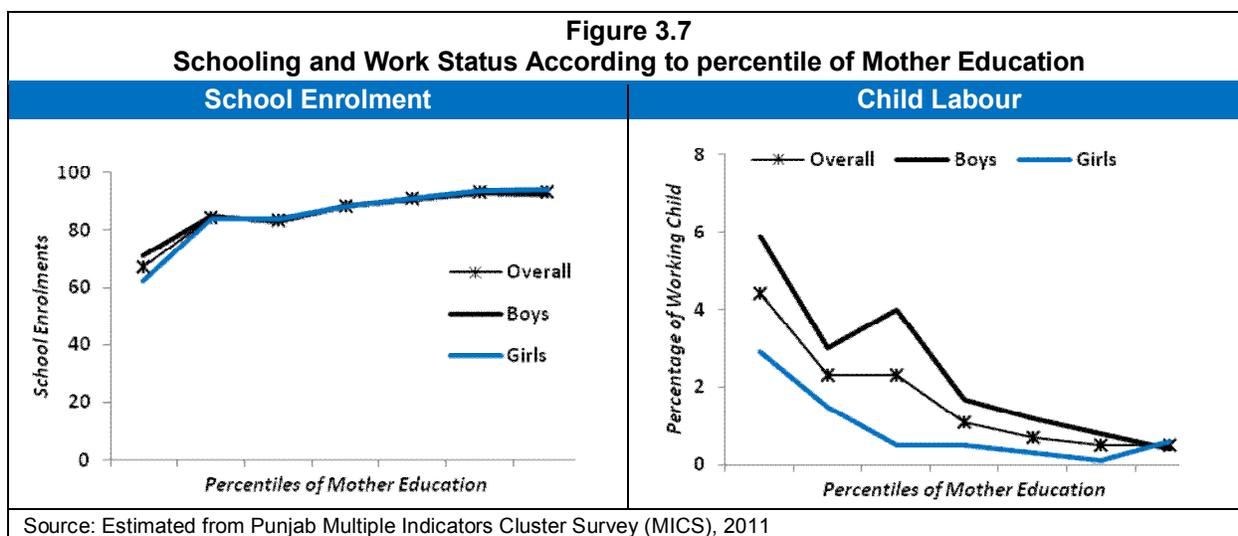


Households are arranged in three percentile groups (33 percent each) on the basis of magnitude of gender equity index at the level of cluster (PSU) to establish the link between adjoining educational environment with respect to gender equity and the decision regarding children's schooling or labouring. According to Table 3.5 which summarises the results of this exercise, 85 percent children are attending school in the areas of high gender equity as against 60 percent enrolment in the areas of low gender equity (lowest 33 percent). Similarly, the difference in the estimates of child 'idleness' is more than three times higher (33 versus 10) in the areas of low gender equity. Figure 3.6 which depicts the visual picture of the relationship between gender equity index and household decisions confirms the positive (negative) relationship between gender equity and schooling (labour child). The figure also denotes the gender difference in children's activities. An interesting finding which is evident in the figure is that gender disparity in school enrolment collapsed after a level (approximately 50<sup>th</sup> percentile) of cluster gender equity index. It is also observed that gender disparity in school enrolment is more pronounced and sharp at low level of cluster gender equity index.

The results, although interesting and depict positive association between adjoining gender equity index and children's schooling, are derived through bi-variate relationship. Thus the analysis ignores the impacts of spatial characteristics such as level of development, demography, cultural constraints, labour market situation, etc. These differences or dissimilarities are controlled through multivariate statistical analysis which is furnished in Section 4.

### **3.3 Parental Education and Child Schooling**

An important determinant of a household's decision regarding their children's welfare in terms of schooling or labouring is the education of parents. Almost all studies in the context of developing countries establish the determining role of parents' education on schooling status of children. In contrast, the probability of sending children to work is high in case of non-educated parents who perhaps do not necessarily consider education as an investment. The empirical relationship between the mother and father's educational status and the decision for schooling or working is portrayed in Figures 3.7 and 3.8 respectively for the Punjab province. The extent of gender disparity in schooling decision and child work is also evident in both figures.

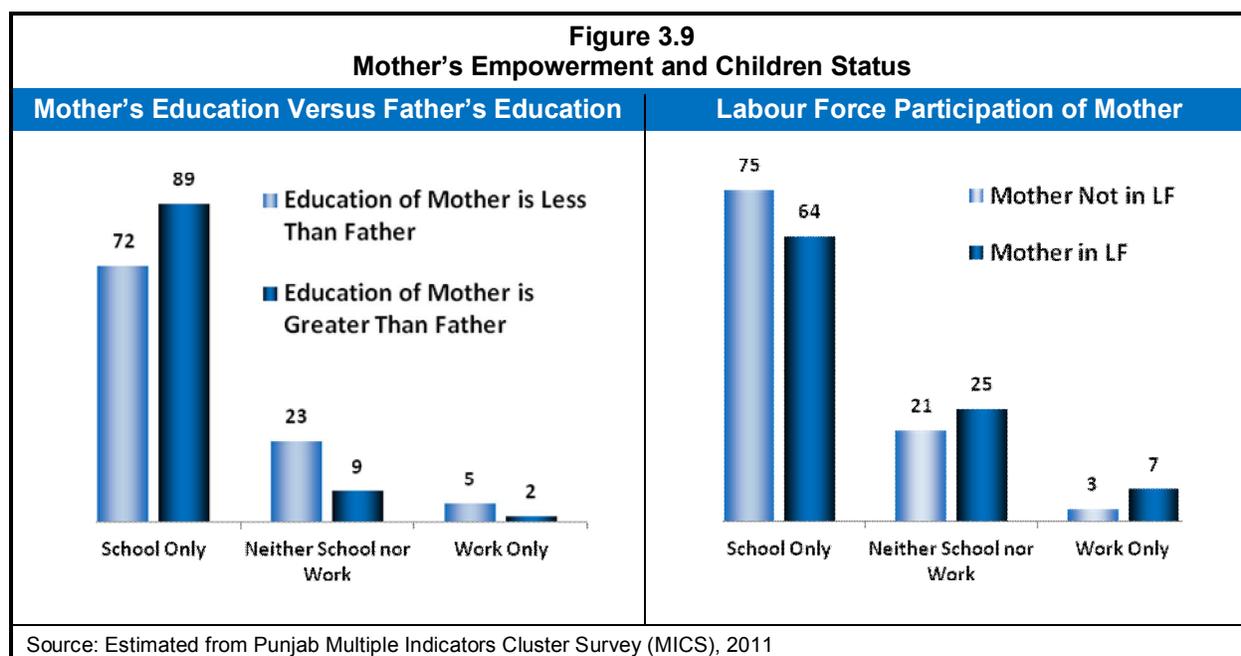


Both figures affirm an inverse relationship (decreasing trend) between parental education and prevalence of child work. However, it appears from figures that comparatively father's education is more effective in the decision of sending child to work. The descending slope of child labour in Figure 3.8 is sharper than in Figure 3.7. Child school enrolment and percentiles of parental education is also showing a positive association.

### 3.4. Impact of Mother's Empowerment on Household Decision

Besides mothers' own level of education, two additional binary variables are used to represent the mother's autonomy or empowerment within the household: mothers'

participation in the labour force and hence contribution to household expenditure and mothers' level of education relative to those of fathers. Figure 3.9 describes the relationship between the proxies of empowerment and the decision regarding child schooling or labouring.



According to the figure, the higher level of education of mothers relative to fathers has a positive (negative) impact on child schooling (working) decision. Nonetheless, this is not true in case of mothers' labour force participation. Percentage of school enrolment is higher in households where mothers are working. This contradiction, however, vanishes after controlling other variables which may affect on the household decision in the multivariate framework.

#### 4. MODELING AND ESTIMATION OF DETERMINANTS

In the previous section, four activities of children (schooling, labouring, idleness and schooling with labouring) are analysed with respect to important policy relevant determinants of a household's decision regarding children's activities. Even though the descriptive analysis presented above provides useful insights, it does not control the effects of other factors such as child characteristics and spatial disparities among households. Thus to estimate the net impact of poverty, gender equity, parental education and mother's empowerment on household decisions, modeling the determinants in a multivariate econometric setting is crucial.

The empirical specification<sup>10</sup> of child activities, backed by the theory of child time allocation, supposes that the parents of child  $i$  assign a utility value to each activity choice  $j$  according to

$$U_{ij} = V_{ij}(p, ge, pe, me) + \varepsilon_{ij}$$

where  $V$  denotes the deterministic component of  $i$ 's utility function from pursuing activity  $j$  and is a function of household poverty ( $p$ ), regional gender equity ( $ge$ ), parental education ( $pe$ ) and mother's empowerment ( $me$ );  $\varepsilon_{ij}$  captures the effects of unmeasured choice attributes such as tastes for schooling, work, and idleness.

Following utility maximisation, the probability of choosing activity  $k$  is;

$$\Pr(U_{ik} > U_{ij}, \forall j \neq k) = \Pr(\varepsilon_{ij} < V_{ik}(p, ge, pe, me) - V_{ij}(p, ge, pe, me) + \varepsilon_{ik}, \forall j \neq k)$$

A household's decision is based on the marginal utility of each activity. If a household decides to send their child to school, the marginal utility of sending children must be greater than the alternate decision of child labour or child idleness. Assuming that  $\varepsilon$  follows an extreme value distribution, the conditional choice probabilities of pursuing each activity may be specified by multinomial logit formulas. Since only a very small percentage (2 percent) of children reported schooling while working, this category is merged with the schooling category. Thus only three categories: school (S), work (W) and idle (I) are used for the estimation of the following multinomial logit model.

$$\Pr(Y = j; S, W, I) = (p, ge, pe, me, X)$$

where  $X$  is a vector of other determinants of child activities.

## 5. ECONOMETRIC EXPLANATION OF DETERMINANTS

The probable factors which may influence the decision regarding children's activities and are available in the MICS data are grouped into the following five categories.

- Child characteristics include age and sex of child and time spent on household activities. The child labour module of the MICS data probes three questions regarding housework; "Did you fetch water or collect firewood for household use?", "Did you work on a family farm or in a family business?" and "Did you help with household chores such as shopping, cleaning, washing clothes,

<sup>10</sup> Following empirical specification is largely benefited from the discussion in Bacolod and Ranjan (2008).

---

cooking, and caring of children, old or sick persons?”. The time spent in these activities is recorded with the reference to past week.

- Age and educational attainment (class completed) of head are grouped in the category of characteristics of father. Two types of occupation (agriculture and self-employed) were also included but dropped from the multinomial logit model due to the statistical insignificance and wrong sign. This may be due to multicollinearity problem as multinomial logit model simultaneously estimates the model coefficients. Nonetheless, these variables worked well with expected signs in bivariate logit specification. It is assumed that these occupation types have an inverse relationship with schooling decision.
- The variables included in the characteristics of the mother include education, labour force participation and mother’s autonomy represented by a relatively higher education level than the father’s. Binary variables (1,0) are created for working mothers and mothers with autonomy or empowerment; where 1 represent the presence of the characteristics.
- Household poverty and the level of educational gender equity in the cluster (PSU) are incorporated in household characteristics category. A negative (positive) relationship is expected between schooling decisions and poverty (gender equity). The conceptualisation and estimation approach of these demand-side variables have already been discussed in the section above.
- Regional (urban/rural) and divisional binary variables are also incorporated in the logit models to control for spatial disparities among households regarding the level of development, nature of labour market and cultural differences.

The multinomial logit model, described in the previous section is estimated using MICS data to statistically evaluate the direction and significance of joint determinants of a household’s decision regarding children’s activities. On the other hand, binomial logit or probit specification is also used in most of the relevant studies to explore the determinants of child schooling and child working in separate equations. This approach is however inappropriate<sup>11</sup> due to the exclusion of a large percentage of children who

---

<sup>11</sup> This argument is highlighted in HOU (2010)

neither go to school nor to work and also due to simultaneous nature of household decisions. Nonetheless, for the purpose of comparison with these studies, this research also provides estimates of bi-variate logit specification which models the determinants of child school participation.

Table 5.1 reports the estimates of logistic regression function for school participation of 5-14 age cohort children. All potential correlates of school participation, described above are included in the logistic function to assess the probability and marginal effect on the household decision to send their children to school. The summary statistics of the logistic regression indicate a good-fit of the model with a high percentage (80 percent) of correct predictions and expected signs of all coefficients associated with variables. The table displays estimated coefficients, level of significance and marginal effects with respect to probability to enroll. Model summary statistics are also provided in the table.

Household poverty is the main constraint in sending children to school as reflected by the highest magnitude of the negative marginal effect on the probability of a child's schooling decision. Thus the result confirms the strong relationship between poverty and the extent of idle children. According to the magnitude of the estimated coefficient as well as the marginal effect, the educational gender equity in the neighborhood (cluster) is the second most important determinant of child schooling. On the other hand, father's education although positive and statistically significant has low marginal impact on the probability of child schooling. With respect to mothers' level of education, an interesting phenomenon is observed. The marginal impact on the probability of child schooling rises with the increase in mother's education. Overall, the marginal impact on the probability of mother's education is 0.52 percent; it is negative in case of matriculation; 4 percent in case of intermediate education; and more than 6 percent in case of graduate mothers. The mother's empowerment and autonomy represented by the contribution in household expenditure and relatively higher education than the father's is also positive and statistically significant though with low marginal impacts as compared with the poverty and educational gender equity.

The results of multinomial logit model are furnished in Table 5.2. Similar to binomial logit model, almost all determinants are statistically significant with expected signs. Moreover, summary statistics (Chi-square and R-Square) show a relatively better fit than the binomial logit for school participation.

As expected, household poverty is the dominant factor leading to the decision to send a child to work. Highest magnitude of estimated coefficient and the marginal impact on probability is evident in the table. Educational gender equity in the cluster, parental education and mother's autonomy with respect to education are all statistically significant with the inverse relationship with the decision to send a child to work. Nonetheless, low marginal impacts on the probability regarding the decision of child work are evident in the table.

Whereas household poverty is directly related with the decision to keep children idle, educational gender equity, parental education and mother's empowerment are inversely related. However the relative magnitudes and marginal effects of determinants other than poverty are very low. Interestingly, the marginal inverse impacts of mothers' characteristics (education, labour force participation and relative education) on the probability of not sending a child to school and work are higher than the fathers' characteristics. Moreover, hours spent by a child in household work (three categories) are statistically significant and positively related with the decision of 'idleness'. But the low marginal impacts of these indicators on the probability of idleness indicate that these are not very influential in household decisions regarding child idleness.

<b>Table 5.1</b> <b>Determinants of Child School Participation – Age Group 5-14 Years</b> <b>[Binomial Logit Model: Dependent Variable, Schooling = 1, No-Schooling = 0]</b>				
		<b>Estimated Coefficients</b>	<b>p- Value</b>	<b>Marginal Effect</b>
Characteristics of Child	Age of Child	-0.076	0.0000	-1.60
	Boy Child in the Age Group 10-14 Years	-0.045	0.0742	-0.65
	Hours Spent to Fetch water/Collect Firewood	-0.013	0.0000	-0.19
	Hours Worked on Family Farm or Business	-0.058	0.0000	-0.85
	Hours Spent on Household Chores	-0.012	0.0000	-0.18
	Girl Child	-0.386	0.0000	-6.24
Characteristics of Father	Age of Head	-0.007	0.0000	-0.12
	Education – Class Completed	0.015	0.0000	0.20
	Occupation – Agriculture	-0.122	0.0000	-1.78
	Occupation – Self Employed	-0.069	0.0020	-1.00
Characteristics of Mother	Education – Class Completed	0.038	0.0000	0.52
	Education – Matriculated	-0.038	0.5228	-0.55
	Education – Intermediate	0.283	0.0012	4.05
	Education – Graduate or Above	0.439	0.0000	6.27
	Mother in Labour Force	0.058	0.0041	0.82
	Mother Education > Father Education	0.090	0.0182	1.29
Household Poverty Status	Multidimensional Poverty Score	-4.493	0.0000	- 110.23
Neighboring Characteristics	Educational Gender Equity Index	2.068	0.0000	12.80
Region	Urban Inhabitant	0.505	0.0000	6.62
Locations - Divisions	Bahawalpur	0.113	0.0000	1.61
[D. G. Khan, Excluding Category]	Lahore	0.180	0.0000	2.54
Category]	Faisalabad	-0.091	0.0009	-1.32
	Gujranwala	-0.163	0.0000	-2.39
	Multan	0.315	0.0000	4.41
	Rawalpindi	0.072	0.0781	1.02
	Sahiwal	0.094	0.0013	1.35
	Sargodha	-0.225	0.0000	-3.27
	Intercept	1.558	0.0000	--
<b>Model Summary:</b>	Chi-Square	44145		
	Pseudo R-Square:			
	Cox & Snell R-Square	0.257		
	Nagelkerke R-Square	0.374		
Notes: Marginal effects (%) are computed at mean value of variables.				
Zero or less than 0.05 p-value indicates that the coefficient ( $\beta$ ) is statistically significant at least at 95 percent confidence level and strongly rejects the null hypothesis that $\beta = 0$ .				
The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0. The value of Chi-Square strongly rejects the null hypothesis.				

<b>Table 5.2</b>						
<b>Determinants of Child Activity Decision – Age Group 5-14 Years</b>						
<i>[Multinomial Logit Model with Schooling, Work and Idleness – Schooling is a Reference Category ]</i>						
	Child Work			Neither School nor Work		
	Estimated Coefficients	p-Value	Marginal Effects	Estimated Coefficients	p-Value	Marginal Effects
<b>Child Characteristics:</b>						
Age of Child	0.25	0.000	0.86	0.04	0.000	0.40
Boy Child Aged 10-14 Years	0.22	0.000	0.09	-0.34	0.000	-2.48
Hours Spent to Fetch water	0.03	0.000	0.01	0.01	0.007	0.07
Hours Spent on Family Work	0.08	0.000	0.03	0.02	0.000	0.19
Hours Spent on Household Chores	-0.01	0.000	0.00	0.02	0.000	0.16
Girl Child	-0.24	0.000	-0.08	0.49	0.000	4.59
<b>Characteristics of Father:</b>						
Age of Head	0.00	0.066	0.00	0.01	0.000	0.09
Education – Class Completed	-0.05	0.000	-0.01	-0.01	0.012	-0.04
<b>Characteristics of Mother:</b>						
Education – Class Completed	-0.01	0.025	-0.01	-0.04	0.000	-0.27
Mother in Labour Force	0.52	0.000	0.20	-0.08	0.000	-0.64
Mother Education > Father Education	-0.10	0.130	-0.04	-0.12	0.007	-0.91
<b>Household Characteristics:</b>						
Multidimensional Poverty Score	3.57	0.000	3.57	4.82	0.000	94.83
Gender Equity Index	-0.66	0.000	-0.17	-2.40	0.000	-6.01
<b>Locational Variables:</b>						
Urban Inhabitant	-0.53	0.000	-0.17	-0.51	0.000	-3.54
Bahawalpur Division	0.01	0.885	0.00	0.16	0.000	1.23
Lahore Division	0.14	0.008	0.05	0.24	0.000	1.89
Faisalabad Division	0.20	0.000	0.08	-0.18	0.000	-1.35
Gujranwala Division	-0.05	0.397	-0.02	-0.18	0.000	-1.34
Multan Division	0.18	0.000	0.07	0.38	0.000	3.10
Rawalpindi Division	-0.17	0.029	-0.06	0.20	0.000	1.57
Sahiwal Division	0.69	0.000	0.27	-0.08	0.013	-0.62
Sargodha Division	-0.57	0.000	-0.20	-0.12	0.001	-0.92
Intercept	-5.60	0.000	--	-2.37	0.000	--
<b>Model Summary:</b>						
	Chi-Square			52708		
	Pseudo R-Square:					
	Cox & Snell R-Square			0.298		
	Nagelkerke R-Square			0.392		
Notes: Marginal effects (%) are computed at mean value of variables.						
Zero or less than 0.05 p-value indicates that the coefficient ( $\beta$ ) is statistically significant at least at 95 percent confidence level and strongly rejects the null hypothesis that $\beta = 0$ .						
The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0. The value of Chi-Square strongly rejects the null hypothesis.						

## 6. CONCLUDING REMARKS

This research explores the characteristics of child activities in terms of schooling, work and idleness in the age cohort 5-14 years. The Punjab MICS 2011 data provides information about activities of children in this age cohort besides standard information regarding characteristics of household and its members.

The data reveals that considerable 21 percent children are idle and do not either go to school or to work in the Punjab province. Significant spatial differences in child activities (schooling, work and idleness) are also observed. For instance, the percentage of idle children in Jhelum is 6 as against 47 observed in district Rajanpur. Similarly, the magnitude of idle children is almost double in rural areas as compared with their urban counterparts.

The key focus of the study was on four important variables which influence a household's decision regarding child activity: household poverty, educational gender equity, parental education and mother's autonomy within the household. Household multidimensional poverty and educational gender equity at cluster (PSU) level are estimated particularly for this research. The descriptive analyses clearly reveal the positive role of gender equity, parental education and mother's empowerment in reducing the intensity of child idleness and thereby increasing the strength of child schooling. In contrast, household poverty is perhaps the main cause of keeping children away from school. The study highlights that only 48 percent children are enrolled in poor households as compared with 87 percent enrolment in non-poor households.

A household's decision regarding child activity is also econometrically analysed by applying binomial and multinomial logit models on a set of correlates including the four aforementioned determinants. The multinomial logit model jointly determines the probability of household decision among alternate choices (schooling, work or idleness).

The logit estimated coefficient, associated with the household poverty confirms the positive (negative) impact on the decision regarding child idleness (schooling). In contrast, coefficients associated with educational gender equity, parental education and mother's empowerment have a statistically significant inverse relationship with the household decision of child idleness. In terms of relative importance as measured by the marginal effect (impact) of these variables on the decision not to send children to

school or work, household poverty outclasses others. Highest magnitude with expected signs of marginal impact of multidimensional poverty on the probability of child idleness is observed followed by gender equity variable.

The evidences presented in this research lead to the conclusion that tackling poverty through income support with conditional cash transfer schemes might be useful for reducing the intensity of child idleness. Moreover, these schemes should be especially targeted to regions (districts) where high intensity of idleness is observed. As this research ignores the supply side determinants, especially distance of household to primary and secondary (boys and girls) school due to the data limitation, this caveat should be kept in mind while interpreting the empirical findings.

## REFERENCES

- Alkire, Sabina and Maria Emma Santos (2010), "Acute Multidimensional Poverty: A New Index for Developing Countries," Oxford Poverty and Human Development Initiative, Working Paper 38, University of Oxford.
- Bacolod Marigee p. and Ranjan Priya (2008), "Why Children Work, Attend School, or Stay Idle: The Roles of Ability and Household Wealth", Economic Development and Cultural Change.
- Duraisamy, Malathy (2000), "Child Schooling and Child Work In India", Paper presented in the Eighth World Congress of the Econometric Society, University of Washington.
- Grigoli, Francesco and Sbrana, Giacomo (2011), "Determinants and Dynamics of Schooling and Child Labour in Bolivia", Poverty Reduction and Economic Management Network, Policy Research Working Paper 5534, The World Bank.
- Haile, Getinet and Haile, Beliyou (2012), "Child labour and Child Schooling in Rural Ethiopia: Nature and Trade-off", Education Economics, Vol. 20, No. 4.
- Hou Xiaohui (2010), "Wealth: Crucial but Not Sufficient – Evidence from Pakistan on Economic Growth, Child Labour and Schooling", Journal of Development Studies, 46(3).
- Kambhampati, Uma Sarada (2009), "Child Schooling and Work Decisions In India: The Role of Household And Regional Gender Equity", Feminist Economics 15(4).
- Lodhi, Abdul Salam, Tsegai Daniel and Gerber Nicolas (2011), "Determinants of Participation in Child's Education and Alternative Activities in Pakistan", ZEF-Discussion Papers on Development Policy No. 159, Center for Development Research, Bonn.
- Punjab (2011), Bureau of Statistics, Planning and Development Department, Government of the Punjab, Multiple Indicator Cluster Survey.
- Ray, R. 2001. Simultaneous Analysis of Child Labour and Child Schooling: Comparative Evidence from Nepal and Pakistan, School of Economics. University of Tasmania.
- Rosati, F., and M. Rossi. (2003). "Children's Working Hours and School Enrolment: Evidence from Pakistan and Nicaragua". World Bank Economic Review 17, no. 2: 283–95.
- United Nations Development Programme (2011) *Human Development Report*, New York: Palgrave Macmillan for the UNDP.

---

## APPENDIX A THE MICS DATA

Multiple Indicator Cluster Survey (MICS) is a household survey programme developed by UNICEF in the mid 90's to assist countries in filling data gaps for monitoring the situation of children and women. The MICS was originally developed in response to the World Summit for Children (WISC) held in 1990 to measure progress towards an internationally agreed set of mid-decade goals. In this sense, MICS was basically developed to fill existing data gaps and to inform and complement existing data collection methods and instruments. The MICS surveys are typically carried out by government organisations, with the support and assistance of UNICEF and other partners. Technical assistance and training for the surveys is provided through a series of regional workshops, covering: questionnaire content, sampling and survey implementation, data processing, data quality and data analysis.

Generally, three sets of questionnaires are used in the survey:

- Household questionnaire is used to collect information on all household members, household socio-economic characteristics and to identify eligible women and individuals for detailed interviews.
- Woman questionnaire is designed to collect information from all women aged 15-49 years registered in the household questionnaire. The women questionnaire includes various modules such as Woman's Background, Marriage, Child Mortality, Maternal and Newborn Health, Illness Symptoms, Contraception etc.
- A questionnaire for under 5 children is administered to mothers or caretakers living in the household and comprise of modules: Birth Registration, Early Childhood Development, Breastfeeding, Care during Illness, Malaria, Immunisation, and Anthropometry.

Punjab Multiple Indicators Cluster Survey (Punjab, 2011) data for the year 2010-11 is utilised for this study which covers more than 100 thousand households. It was the biggest survey in the history of Punjab in terms of indicators and sample size. The Survey was carried out in 2011 by the Bureau of Statistics, Government of the Punjab in

collaboration with United Nations Children's Fund (UNICEF) and United Nations Development Programme (UNDP).

The sample for the MICS Punjab, 2011 was designed by Pakistan Bureau of Statistics (PBS), to provide estimates on a large number of indicators on the situation of women and children including the socio-economic indicators at the provincial level for 9 divisions, 36 districts and 150 tehsils/towns. The sample design was reviewed for adequacy and soundness by international consultants engaged by UNICEF Pakistan. The sample was selected in two stages. Within each of the 287 sampling domains, Enumeration Areas (EA) (enumeration blocks in urban areas or village/ mouzas/ dehs in rural areas) were selected with probability proportional to size. Prior to the survey implementation, a complete listing of households in all the selected EAs was conducted. Based on the total number of households in each EA a systematic sample of 12 households in urban and 16 households in rural areas was randomly drawn. This formed the second stage of sampling. In selected households, all females aged 15-49 years and children under five years were identified for individual interviews. The total sample size for the survey was 102,0485 households. The sample was not self-weighting and sample weights were used to report results.

## APPENDIX B

Table B-1 Children's Activities – Districts Ranked According to the Proportion of <i>School participation</i> [Percentage of Children in 5-14 Age Cohort]				
	School Only	Idle (Nowhere)	Work Only	School and Work
Rajanpur	44.8	47.4	6.8	1.0
D.G. Khan	49.1	42.7	5.8	2.5
Lodhran	52.7	42.1	3.7	1.4
Rahim Yar Khan	55.1	38.4	3.8	2.7
Muzaffargarh	57.2	37.5	4.4	1.0
Bahawalpur	58.6	34.2	5.6	1.6
Okara	61.8	25.1	7.3	5.9
Pakpattan	66.2	24.5	6.4	2.9
Multan	67.4	25.7	5.4	1.5
Vehari	67.5	25.9	5.1	1.6
Chiniot	67.9	27.4	3.6	1.1
Khanewal	68.1	26.8	3.7	1.4
Bahwalnagar	68.6	26.9	3.6	0.8
Sahiwal	69.0	23.4	5.0	2.7
Bhakkar	70.8	24.5	2.8	1.9
Kasur	72.3	22.0	3.8	2.0
Mianwali	73.0	23.9	1.7	1.5
Jhang	73.4	21.5	3.3	1.8
Layyah	74.3	21.6	2.7	1.4
Hafizabad	75.8	18.6	3.9	1.7
Khushab	76.7	20.4	1.8	1.1
Faisalabad	79.3	13.0	3.5	4.2
Nankana Sahib	79.4	17.4	2.2	1.0
Sheikhupura	80.6	14.5	2.9	2.0
T. T. Singh	80.9	14.7	3.3	1.1
Lahore	81.3	14.1	2.3	2.3
Sargodha	84.2	13.6	1.9	0.3
Attock	85.0	9.6	1.3	4.0
Gujranwala	86.8	9.5	2.6	1.0
Mandi Bahaudin	87.3	9.2	2.1	1.5
Chakwal	88.2	8.6	0.5	2.7
Sialkot	88.8	6.4	2.3	2.5
Narowal	89.3	8.2	1.5	1.0
Rawalpindi	89.5	8.9	0.6	1.1
Gujrat	91.2	6.6	1.3	0.9
Jhelum	93.2	5.9	0.6	0.3

Source: Estimated from MICS, Punjab 2011

**Table B-2**  
**Children's Activities – Districts Ranked According to the Proportion of**  
*Idle Children*  
**[Percentage of Children in 5-14 Age Cohort]**

	<b>School Only</b>	<b>Idle (Nowhere)</b>	<b>Work Only</b>	<b>School and Work</b>
Jhelum	93.2	<b>5.9</b>	0.6	0.3
Sialkot	88.8	<b>6.4</b>	2.3	2.5
Gujrat	91.2	<b>6.6</b>	1.3	0.9
Narowal	89.3	<b>8.2</b>	1.5	1.0
Chakwal	88.2	<b>8.6</b>	0.5	2.7
Rawalpindi	89.5	<b>8.9</b>	0.6	1.1
Mandi Bahaudin	87.3	<b>9.2</b>	2.1	1.5
Gujranwala	86.8	<b>9.5</b>	2.6	1.0
Attock	85.0	<b>9.6</b>	1.3	4.0
Faisalabad	79.3	<b>13.0</b>	3.5	4.2
Sargodha	84.2	<b>13.6</b>	1.9	0.3
Lahore	81.3	<b>14.1</b>	2.3	2.3
Sheikhupura	80.6	<b>14.5</b>	2.9	2.0
T. T. Singh	80.9	<b>14.7</b>	3.3	1.1
Nankana Sahib	79.4	<b>17.4</b>	2.2	1.0
Hafizabad	75.8	<b>18.6</b>	3.9	1.7
Khushab	76.7	<b>20.4</b>	1.8	1.1
Jhang	73.4	<b>21.5</b>	3.3	1.8
Layyah	74.3	<b>21.6</b>	2.7	1.4
Kasur	72.3	<b>22.0</b>	3.8	2.0
Sahiwal	69.0	<b>23.4</b>	5.0	2.7
Mianwali	73.0	<b>23.9</b>	1.7	1.5
Bhakkar	70.8	<b>24.5</b>	2.8	1.9
Pakpattan	66.2	<b>24.5</b>	6.4	2.9
Okara	61.8	<b>25.1</b>	7.3	5.9
Multan	67.4	<b>25.7</b>	5.4	1.5
Vehari	67.5	<b>25.9</b>	5.1	1.6
Khanewal	68.1	<b>26.8</b>	3.7	1.4
Bahwalnagar	68.6	<b>26.9</b>	3.6	0.8
Chiniot	67.9	<b>27.4</b>	3.6	1.1
Bahawalpur	58.6	<b>34.2</b>	5.6	1.6
Muzaffargarh	57.2	<b>37.5</b>	4.4	1.0
Rahim Yar Khan	55.1	<b>38.4</b>	3.8	2.7
Lodhran	52.7	<b>42.1</b>	3.7	1.4
D.G. Khan	49.1	<b>42.7</b>	5.8	2.5
Rajapur	44.8	<b>47.4</b>	6.8	1.0

Source: Estimated from MICS, Punjab 2011

**Table B-3**  
**Children's Activities – Districts Ranked According to the Proportion of**  
*Child Labour*  
**[Percentage of Children in 5-14 Age Cohort]**

	<b>School Only</b>	<b>Idle (Nowhere)</b>	<b>Work Only</b>	<b>School and Work</b>
Chakwal	88.2	8.6	<b>0.5</b>	2.7
Rawalpindi	89.5	8.9	<b>0.6</b>	1.1
Jhelum	93.2	5.9	<b>0.6</b>	0.3
Attock	85.0	9.6	<b>1.3</b>	4.0
Gujrat	91.2	6.6	<b>1.3</b>	0.9
Narowal	89.3	8.2	<b>1.5</b>	1.0
Mianwali	73.0	23.9	<b>1.7</b>	1.5
Khushab	76.7	20.4	<b>1.8</b>	1.1
Sargodha	84.2	13.6	<b>1.9</b>	0.3
Mandi Bahaudin	87.3	9.2	<b>2.1</b>	1.5
Nankana Sahib	79.4	17.4	<b>2.2</b>	1.0
Lahore	81.3	14.1	<b>2.3</b>	2.3
Sialkot	88.8	6.4	<b>2.3</b>	2.5
Gujranwala	86.8	9.5	<b>2.6</b>	1.0
Layyah	74.3	21.6	<b>2.7</b>	1.4
Bhakkar	70.8	24.5	<b>2.8</b>	1.9
Sheikhupura	80.6	14.5	<b>2.9</b>	2.0
Jhang	73.4	21.5	<b>3.3</b>	1.8
T. T. Singh	80.9	14.7	<b>3.3</b>	1.1
Faisalabad	79.3	13.0	<b>3.5</b>	4.2
Chiniot	67.9	27.4	<b>3.6</b>	1.1
Bahwalnagar	68.6	26.9	<b>3.6</b>	0.8
Lodhran	52.7	42.1	<b>3.7</b>	1.4
Khanewal	68.1	26.8	<b>3.7</b>	1.4
Rahim Yar Khan	55.1	38.4	<b>3.8</b>	2.7
Kasur	72.3	22.0	<b>3.8</b>	2.0
Hafizabad	75.8	18.6	<b>3.9</b>	1.7
Muzaffargarh	57.2	37.5	<b>4.4</b>	1.0
Sahiwal	69.0	23.4	<b>5.0</b>	2.7
Vehari	67.5	25.9	<b>5.1</b>	1.6
Multan	67.4	25.7	<b>5.4</b>	1.5
Bahawalpur	58.6	34.2	<b>5.6</b>	1.6
D.G. Khan	49.1	42.7	<b>5.8</b>	2.5
Pakpattan	66.2	24.5	<b>6.4</b>	2.9
Rajanpur	44.8	47.4	<b>6.8</b>	1.0
Okara	61.8	25.1	<b>7.3</b>	5.9

Source: Estimated from MICS, Punjab 2011

## APPENDIX C

### BRIEF METHODOLOGY FOR ESTIMATING MULTIDIMENSIONAL POVERTY

This brief note is largely verbatim of Technical Notes of UNDP Human Development Report (2011), while details of conceptual and other related issues in measurement of multidimensional poverty may be acquired from various OPHI<sup>12</sup> working papers. UNDP cited Alkire and Santos (2010) for the preparation of the Technical Note.

The Multidimensional Poverty Index (MPI) identifies multiple deprivations at the individual level in education, health and standard of living. Each person is assigned a deprivation score according to his or her household's deprivations in each of the 10 component indicators. The maximum score is 100 percent; with each dimension equally weighted (thus the maximum score in each dimension is 33.3 percent). The education and health dimensions have two indicators each, so each component is worth 5/3 (or 16.7 percent). The standard of living dimension has six indicators, so each component is worth 5/9 (or 5.6 percent). Table 3.1 furnishes the deprivation indicators and their thresholds.

<b>Indicators of Household Deprivation</b>		
<b>Education</b>	<i>Years of Schooling</i>	If no household member has completed five years of schooling
	<i>Child Enrolment</i>	If any school-aged child is not attending school in years 1 to 8
<b>Health</b>	Child Mortality	If any child has died in the family
	Under-nutrition	If any adult or child is malnourished
<b>Standard of Living</b>	Electricity	Deprived if the household has no electricity
	Drinking water	Deprived if the household does not have access to clean drinking water
	Sanitation	Deprived if they do not have access to adequate sanitation
	Flooring	Deprived if the house hold has dirt, sand or dung floor
	Cooking Fuel	Deprived if they cook with dirty fuel (wood, charcoal or dung)
	Assets	Deprived if the house hold does not owning car, truck or similar motorised vehicle while owning at most one of these assets: bicycle, motorcycle, radio, refrigerator, telephone or television.

<sup>12</sup> <http://www.ophi.org.uk/>

---

To identify the multi-dimensionally poor, the deprivation scores for each household are summed to obtain the household deprivation,  $c$ . A cut-off of 33.3 percent, which is the equivalent of one-third of the weighted indicators, is used to distinguish between the poor and non-poor. If  $c$  is 33.3 percent or greater, that household (and everyone in it) is multi-dimensionally poor. Households with a deprivation score greater than or equal to 20 percent but less than 33.3 percent are vulnerable to or at risk of becoming multi-dimensionally poor. Households with a deprivation score of 50 percent or higher are severely multi-dimensionally poor.

The MPI value is the product of two measures: the multidimensional headcount ratio and the intensity (or breadth) of poverty. The headcount ratio,  $H$ , is the proportion of the population who are multi-dimensionally poor:

$$H = \frac{q}{n}$$

Where  $q$  is the number of people who are multi-dimensional poor and  $n$  is the total population. The intensity of poverty,  $A$ , reflects the proportion of the weighted component indicators in which, on average, poor people are deprived. For poor households only, the deprivation scores are summed and divided by the total number of poor persons:

$$A = \frac{\sum_q^1 c}{n}$$



**List of  
SPDC's Publications**

## ANNUAL REVIEWS OF SOCIAL DEVELOPMENT IN PAKISTAN

- SPDC-AR, Social Development in Pakistan: Annual Review 2012-13  
(*The State of Social Development in Rural Pakistan*)
- SPDC-AR, Social Development in Pakistan: Annual Review 2011-12  
(*Devolution and Social Development*)
- SPDC-AR, Social Development in Pakistan: Annual Review 2009-10  
(*Social Impact of the Security Crisis*)
- SPDC-AR, Social Development in Pakistan: Annual Review 2007-08  
(*Women at Work*)
- SPDC-AR, Social Development in Pakistan: Annual Review 2006-07  
(*Devolution and Human Development in Pakistan*)
- SPDC-AR, Social Development in Pakistan: Annual Review 2005-06  
(*Trade Liberalization, Growth and Poverty*)
- SPDC-AR, Social Development in Pakistan: Annual Review 2004  
(*Combating Poverty: Is Growth Sufficient?*)
- SPDC-AR, Social Development in Pakistan: Annual Review 2002-03  
(*The State of Education*)
- SPDC-AR, Social Development in Pakistan: Annual Review 2001  
(*Growth, Inequality and Poverty*)
- SPDC-AR, Social Development in Pakistan: Annual Review 2000  
(*Towards Poverty Reduction*) (Urdu summary is also available)
- SPDC-AR, Social Development in Pakistan: Annual Review 1999  
(Social Development in Economic Crisis)] (Urdu summary is also available)
- SPDC-AR, Social Development in Pakistan: Annual Review 1998

## RESEARCH REPORTS

- RR-93, Determinants of Child Schooling, Work and Idleness: The Case of the Punjab Province, [2014]
- RR-92, Health and Educational Status of Children: An Exploration through a Gender Lens, [2014]
- RR-91, Profiling Rural Pakistan for Poverty, Inequality and Social Exclusion, [2014]
- RR-90, School Participation in Rural Pakistan: A Situation Analysis, [2014]
- RR-89, Incidence of General Sales Tax in Pakistan: Latest Estimates, [2014]
- RR-88, State of the Economy: An Evaluation of the Federal Budget 2014-15, [2014]
- RR-87, State of the Economy: An Ambitious Budget 2013-14, [2013]
- RR-86, State of the Economy: Imperatives for Fiscal Policy in the Federal Budget of 2013-14, [2013]
- RR-85, Predicting Sub-National Poverty Incidence for Pakistan, [2013]
- RR-84, Pakistan Poverty Statistics: Estimates for 2011, [2012]
- RR-83, An Exploratory Analysis of Inter-Temporal Multidimensional Poverty, [2012]
- RR-82, Districts' Indices of Multiple Deprivations for Pakistan-2011, [2012]
- RR-81, A Profile of Social Protection in Pakistan: An Appraisal of Empirical Literature [2010]
- RR-80, Assessing Vulnerability to Poverty: Evidence from Pakistan, [2009]
- RR-79, Estimation of Multidimensional Poverty in Pakistan, [2009]
- RR-78, Understanding Rural Poverty Dynamics: The Case of the Poorest District of Sindh Pakistan, [2008]
- RR-77, Exploring the Impact of Microfinance in Pakistan, [2008]

- RR-76, State of the Economy: Fiscal Policy Choices in Budget 2008-09, [2008]
- RR-75, Pay Offs to Schooling and Returns to Credentials, [2008]
- RR-74, Satisfaction or Frustration: A Survey of Selected District Governments, [2008]
- RR-73, Trends in Regional Human Development Indices, [2007]
- RR-72, Indices of Multiple Deprivations 2005, [2007]
- RR-71, Education Status of Districts: An Exploration of Inter-Temporal Changes, [2007]
- RR-70, Income Poverty at District Level: An Application of Small Area Estimation Technique, [2007]
- RR-69, Updating Poverty and Inequality Estimates: 2005 Panorama, [2007]
- RR-68, Determinants of Total Factor Productivity in Pakistan, [2006]
- RR-67, Gender Inequality and Trade Liberalization: A Case Study of Pakistan, [2007]
- RR-66, Determinants of Recent Inflation in Pakistan, [2007]
- RR-65, Estimating the Black Economy through Monetary Approach: A Case Study of Pakistan, [2006]
- RR-64, State of the Economy: Growing Macroeconomic Imbalances, [2006]
- RR-63, The Economy in the Aftermath of the Earthquake, [2005]
- RR-62, State of the Economy: An Overheating Economy, [2005]
- RR-61, Cancer: Social Implications of Treatment and Financial Burden, [2005]
- RR-60, Province-Wise Growth Patterns in Human Capital Accumulation, [2005]
- RR-59, In Search of Poverty Predictors: The Case of Urban and Rural Pakistan, [2004]
- RR-58, Does Inequality Matter for Poverty Reduction? Evidence from Pakistan's Poverty Trends, [2004]
- RR-57, State of the Economy: A Shift towards Growth, [2004]
- RR-56, State of the Economy: Behind the Aggregates, [2003]
- RR-55, Poverty and Inequality during the Adjustment Decade: Empirical Findings from Household Surveys, [2003]
- RR-54, Impact of Ownership and Concentration of Land on Schooling: The Case of Rural Punjab, [2003]
- RR-53, Zakat as A Social Safety Net: Exploring the Impact, [2003]
- RR-52, Mapping the Spatial Deprivation of Pakistan, [2003]
- RR-51, Price and Income Effects on Urban Undernutrition, [2003]
- RR-50, Private Returns to Education: Evidence for Pakistan, [2003]
- RR-49, Returns to Education: The Case of Fertility, [2003]
- RR-48, Microfinancing: Fighting Against Poverty, [2003]
- RR-47, The Changing Profile of Regional Inequality, [2003]
- RR-46, The Knowledge Divide: Education Inequality in Pakistan, [2003]
- RR-45, Pakistan's External Debt Burden: Causes, Complexities and Remedies, [2003]
- RR-44, The Slowing Down of the Growth of Total Factor Productivity in Pakistan, [2002]
- RR-43, Cost of Living Index by City of Pakistan, [2002]
- RR-42, Recasting Sindh Budget (Expenditures) From 'Head of Account' To 'Department' Basis, [2002]
- RR-41, Impact of the Afghan War on the Economy: Options for Pakistan, [2001]
- RR-40, Stabilization vs Growth: Federal Budget 2001-02, [2001]

- RR-39, Incidence of Income Poverty in Pakistan, [2001]
- RR-38, Credit to the Poor: Consultations with Borrowers, [2001]
- RR-37, Social Development and Economic Growth: A Statistical Exploration, [2001]
- RR-36, Alternative Delivery Mechanisms, [2000]
- RR-35, Evaluation of the Federal Budget 2000-01, [2000]
- RR-34, Public-Private Partnerships in the Health Sector, [2000]
- RR-33, Macroeconomic Developments and Poverty, [2000]
- RR-32, Evaluation of Social Safety Nets in Pakistan, [2000]
- RR-31, A Medium-Term Macroeconomic Framework for Pakistan, [2000]
- RR-30, Elements of Good Economic Governance, [2000]
- RR-29, Social Impact of Economic Crisis: Lessons for Pakistan, [1999]
- RR-28, Impact of Economic Adjustment on Social Development in Pakistan, [1999]
- RR-27, Modeling Poverty Trends in Pakistan: Some Additional Empirical Evidence, [1999]
- RR-26, Analysis of Provincial Budgets, 1999 2000, [1999]
- RR-25, The 1998 Population Census, [1999]
- RR-24, Gender Inequality in Developing Countries: A Case Study of Pakistan, [1999]
- RR-23, Evaluation of the Federal Budget 1999 2000, [1999]
- RR-22, Essays on the Federal Budget 1998 99, [1998]
- RR-21, Decentralised Governance of Sindh Katchi Abadis Authority, [1998]
- RR-20, Social Development in Pakistan Annual Review 1998
- RR-19, Fiscal Decentralization: Lessons from the Asian Experience, [1997]
- RR-18, Social and Economic Ranking of Districts of Pakistan, [1998]
- RR-17, Growth of Public Debt and Debt Servicing in Pakistan, [1996]
- RR-16, Review of the Social Action Program, [1997]
- RR-15, The Provincial Budgets 1997 98, [1997]
- RR-14, An Evaluation of the Federal Budget 1997 98, [1997]
- RR-13, An Evaluation of the Budget 1996 97, [1996]
- RR-12, Resource Mobilisation and Expenditure Planning for Social Sectors in Pakistan, [1996]
- RR-11, The World Summit for Social Development: Its Implications for Social Sector Development in Pakistan, [1996]
- RR-10, Social Development Ranking of Districts of Pakistan, [1996]
- RR-9, Continuation Rates in Primary Education: A Study of Pakistan
- RR-8, National Finance Commission: 1995 - Inter-Governmental Revenue Sharing in Pakistan, [1996]
- RR-7, Integrated Social Policy and Macro Economic Planning Model for Pakistan, [1995]
- RR-6, Optimal Enrollment and Cost Effective Expenditures for Public School System, [1994]
- RR-5, Optimal Mix of Health Sector Expenditure, [1994]
- RR-4, Data Base Development for Integrated Social Sector Revenue and Expenditure Model, [1994]
- RR-3, Specification of Integrated Social Sector Revenue and Expenditure Planning Model, [1993]
- RR-2, A Study on Improving the Efficiency and Effectiveness of Spending in the Social Sectors and Increasing Resource Mobilisation in the Provinces, (Five Volumes), [1992]
- RR-1, Fiscal Policy in Pakistan, [1991]

## GRP RESEARCH REPORTS

- 8, GRP Research Report No. 8: The Socio-Economic Impact of Floods in District Thatta: A Gendered Analysis, [2013]
- 7, GRP Research Report No. 7: Gender Dimensions in Rural Non-farm Employment in Pakistan, [2013]
- 6, GRP Research Report No. 6: Gender Dimensions of Development Induced Displacement and Resettlement: A Case of Lyari Expressway in Karachi, [2012]
- 5, GRP Research Report No. 5: The Socio-Economic Cost of Violence Against Women: A Case Study of Karachi, [2012]
- 4, GRP Research Report No. 4: Gender Dimensions of Social Safety Nets: The Case of Zakat Recipients in Pakistan, [2010]
- 3, GRP Research Report No. 3: Socio-Economic Characteristics of Female- Headed Households in Pakistan Baseline Survey, 2009-10, [2010]
- 2, GRP Research Report No. 2: Trade Liberalisation and Gender Dynamics of Employment in Pakistan, [2010]
- 1, GRP Research Report No. 1: Public Spending on Education and Health in Pakistan: A Dynamic Investigation through Gender Lens, [2010]

## POLICY PAPERS

- PP-25, Agenda for the 8<sup>th</sup> NFC: Lessons from the 7<sup>th</sup> NFC Award, Post-7<sup>th</sup> NFC Development and Emerging Issues, [2014]
- PP-24, The Privatization Program, [2014]
- PP-23, On the Estimation of An Absolute Poverty Line: An Empirical Appraisal, [2003]
- PP-22, Hidden Subsidies, [2002]
- PP-21, Why has the Tax-To-GDP Ratio Fallen? [2002]
- PP-20, A National Poverty Reduction Strategy and the Role of Donors, [2000]
- PP-19, Macroeconomic Framework for Debt Management, [2000]
- PP-18, Revamping the SAP, [2000]
- PP-17, Statement to the Commonwealth Delegation, [1999]
- PP-16, Unsustainability of the Balance of Payments, [1999]
- PP-15, Broad-Basing of GST: The Strategy for Transition, [1999]
- PP-14, Provincial Resource Mobilisation, [1998]
- PP-13, Financial Sustainability of NGOs: Proposal for 1998-99 Federal Budget, [1998]
- PP-12, Political Economy of Tax Reforms: The Pakistan Experience, [1997]
- PP-11, Ninth Five Year Plan (1998-2003): Issues Paper, [1996]
- PP-10, Fiscal Effort by Provincial Governments in Pakistan, [1995]
- PP-9, Implication of the TOR of the New NFC, [1995]
- PP-8, Provincial Budgets of 1995-96, [1995]
- PP-7, Switchover to Ad Valorem Octroi Rates at Dry Ports, [1994]
- PP-6, Rationalisation of Octroi Rates, [1994]
- PP-5, User Charges in Health, [1994]
- PP-4, Sindh Government Budget of 1993-94, [1994]
- PP-3, User Charges in Education, [1994]
- PP-2, Sales Taxation of Services by Provincial Governments, [1994]
- PP-1, Rationalisation of Stamp Duties on Financial Assets and Transactions, [1994]

## POLICY BRIEF

Social Impact of the Security Crisis [ Rabia Sidat]  
Policy Brief, December 2011

Women at Work [Samar Zuberi]  
Policy Brief, July 2011

The Elimination of Textile Quotas and Pakistan-EU Trade  
[Iffat Ara]  
Policy Brief, April 2007

## CONFERENCE PAPERS

CP-63, Challenges and Responses for Democracy and Security:  
Pakistan's Perspective, [2009]

CP-62, Neo-Liberal Governance and Poverty in Pakistan, [2009]

CP-61, How External Shocks and Exchange Rate Depreciations  
Affect Pakistan? Implications for Choice of an Exchange Rate  
Regime, [2005]

CP-60, Agricultural Terms of Trade in Pakistan: Issues of Profitability  
and Standard of Living of the Farmers, [2005]

CP-59, Is Pakistan's Manufacturing Sector Competitive? [2005]

CP-58, The Plight of Working Mothers in Pakistan: Advantages and  
Disadvantages of a Joint Family System, [2004]

CP-57, Macroeconomic Reforms and Return to Human Capital in  
Pakistan, [2004]

CP-56, Burden of Stabilization on Provinces and Its Implication on  
Social Sectors, [2004]

CP-55, Macroeconomic Reforms and Total Factor Productivity Growth  
in Pakistan: An Empirical Analysis, [2003]

CP-54, Budgets and Fiscal Decentralization: A Case Study of Sindh, [2003]

CP-53, Districts Level of Development as Push and Pull Factor in Inter-  
District Migration in Pakistan, [2002]

CP-52, Is Female Illiteracy a Determinant for Child Malnutrition: An  
Analyses of Developing Countries, [2003]

CP-51, Tax Holidays, Cost of Capital and Investment Behaviour:  
Jorgenson Approach, [2003]

CP-50, Why Private Investment in Pakistan has Collapsed and how  
can it be Restored, [2003]

CP-49, Hidden Subsidies, [2003]

CP-48, Gender and Public Spending on Education in Pakistan: A Case  
Study of Disaggregated Benefit Incidence, [2003]

CP-47, Nonprofit Sector in Pakistan: Government Policy and Future  
Issues, [2003]

CP-46, The Income Tax Regime and the Non-Profit Sector: The Case of  
Pakistan, [2003]

CP-45, The Long run and Short run Impact of Exchange Rate  
Devaluation on Pakistan's Trade Performance, [2002]

CP-44, Crowding Out Hypothesis in a Vector Error Correction  
Framework: A Case Study of Pakistan, [2002]

CP-43, Dynamic Consequences of the 1997 National Finance  
Commission Award: Provincial Social Sector Expenditures, [2002]

CP-42, Political Economy of Fiscal Reforms in the 1990s, [2002]

CP-41, Stabilization Policy vs Growth Oriented Policy: Implication for  
the Pakistan Economy, [2002]

CP-40, Internal Migration: The Case of Sindh Province, [2001]

CP-39, Some Issues of Governance in Pakistan, [2000]

CP-38, Governance, Decentralisation and Poverty: The Case of  
Pakistan, [2001]

CP-37, Devolution and Fiscal Decentralisation, [2001]

CP-36, Brief on Annual Review of SPDC for 2000 on Towards Poverty  
Reduction, [2000]

CP-35, Policy Research and Its Implementation: Pakistan and  
Canada, [2000]

CP-34, Issues in Institutional Reform for Devolution, [2000]

CP-33, Issues in Fiscal Decentralisation, [2000]

CP-32, Public Expenditure Reform, [2000]

CP-31, Social Sector Policies Under SAP, [1999]

CP-30, Impediments to Social Development in Pakistan, [1999]

CP-29, Pakistan's Ranking in Social Development: Have We Always  
Been Backward, [1999]

CP-28, An Econometric Evaluation of Pakistan's National Education  
Policy 1998-2010, [1999]

CP-27, Impediments to Improvement of Social Sectors in Pakistan, [1998]

CP-26, Gender Differentials in the Cost of Primary Education: A Study  
of Pakistan, [1996]

CP-25, Integrated Social-Sector Macroeconomic Model for  
Pakistan, [1996]

CP-24, Determinants of Rates of Octroi Tax in Pakistan, [1995]

CP-23, Social Development Ranking of Districts of Pakistan, [1996]

CP-22, The City of Karachi: Planning and Managing for Urban  
Development, [1996]

CP-21, Sustainability of Public Debt in Pakistan, [1996]

CP-20, Has Poverty Returned to Pakistan? [1996]

CP-19, Improved Health Status and Economic Growth: Some Co-  
integration Results from Developing Economies, [1996]

CP-18, Is There a Long-Run Relationship Between Economic Growth  
and Human Development? Some Cross Country Evidence from  
Developing Countries, [1996]

CP-17, Municipal Finance in Small Cities, [1995]

CP-16, Financial Development of Megacities, [1995]

CP-15, Is Public Sector Investment Productive? Some Evidence from  
Pakistan, [1995]

CP-14, Is the Social Action Programme (SAP) in Pakistan Financially  
Sustainable? [1995]

CP-13, Results of Policy Simulations, [1995]

CP-12, Software Development and Use of the Model, [1995]

CP-11, Specification of the Integrated Social Policy Macro Economic  
Model, [1995]

CP-10, Overview of Integrated Revenue and Expenditure Planning  
Model for Social Sectors, [1995]

CP-9, Development of Property Taxation, [1995]

CP-8, Prospects of Resource Mobilisation by the Provincial  
Governments, [1995]

CP-7, Expenditure Planning Issues, [1993]

CP-6, Local Government Resource Mobilisation, [1993]

CP-5, Local Government Resource Mobilisation, [1993]

CP-4, Problems in Resource Mobilisation in Punjab, [1993]

CP-3, Provincial Government Resource Mobilisation in Punjab, [1993]

CP-2, Investment Strategy and Expenditure Requirements for Social  
Development, [1993]

CP-1, The Implementation Environment of the Social Action  
Programme, [1993]

## CONFERENCE PROCEEDINGS

- CPP-4, Proceedings of the Seminar on Prospects and Policies for the Future, [2000]
- CPP-3, Proceedings of the Launching Ceremony of the Social Development in Pakistan - Annual Review 1998, [1998]
- CPP-2, Proceedings of the Second Conference on Resource Mobilisation and Expenditure Planning, [1995]
- CPP-1, Proceedings of the Conference on Resource Mobilisation and Expenditure Planning, [1993]

## DATABASE REPORTS

- DB-5, Data-Base Report 2013: Gender Disaggregated Indicators of the Labour Market in Pakistan, [2013]
- DB-4, Data-Base Report 2005: Socio-Economic Indicators by Gender: A Regional Comparison for Pakistan, [2005]
- DB-3, Data-Base Report 1997: Education Module, [1997]
- DB-2, Data-Base Report 1997: Provincial Finance Module, [1997]
- DB-1, Data-Base Report 1997: Federal Finance Module, [1997]

## WORKING PAPERS

- WP-7, Proposed Agenda for Sustained Economic Revival, [2013]
- WP-6, Has civil society failed in Pakistan? [2011]
- WP-5, Provincial Accounts of Pakistan: Methodology and Estimates 1973-2000, [2005]
- WP-4, Nonprofit Sector in Pakistan: Historical Background, [2004]
- WP-3, Law and the Nonprofit Sector in Pakistan, [2002]
- WP-2, Nonprofit Sector in Pakistan: Government Policy and Future Issues, [2002]
- WP-1, Dimensions of the Nonprofit Sector in Pakistan, [2002]

## SPDC BOOKS

- SPDC Book, In Search of Gendered Development: A Compendium, [2014]
- SPDC Book, Provincial Governments and the Social Sectors in Pakistan, [1997]
- SPDC Book, Resource Mobilisation and Expenditure Planning in the Provinces of Pakistan, [1996]

## OTHER PUBLICATIONS

- OP-3, Report of Interactive Discussion Session on Integrated Energy Policy Formulation with Emphasis on Social Dimensions, [2012]
- OP-2, Booklet: ABC of the Economics of Tariffs and Import Quotas, [2007]
- OP-1, Research Report: The Elimination of Textile Quotas and Pakistan-EU Trade, [2007]



**Social Policy and Development Centre**  
15-Maqbool Co-operative Housing Society  
Block 7 & 8, Karachi 75350, Pakistan  
Tel: (92-21) 111-113-113  
Fax: (92-21) 3453-4285  
E-mail: [spdc@spdc.org.pk](mailto:spdc@spdc.org.pk)

Find us on



[www.spdc.org.pk](http://www.spdc.org.pk)