CHAPTER IV

DETERMINANTS OF CHILD LABOUR IN INDIA:

A STATE LEVEL ANALYSIS

Child labour is an integral part of the labour force in India. The children enter the labour market at a tender age to support their families, which hinders their overall development. This problem continues unabated in many parts of the country.

Child labour is a multidimensional problem. Various social, economic and demographic forces work together in determining the incidence of child labour in the country. This chapter attempts to establish empirically, the relationship that exists between selected social, economic and demographic factors and the incidence of child labour in India.

This analysis is confined to the major states of India. Some of the states and the Centrally Administered Areas are too small compared with states like Uttar Pradesh, Bihar and Maharashtra. Giving equal weightage to small pockets of population with large states would give a distorted picture of the country. The selection of the socio-economic variables has been based primarily on two
considerations:

(i) Its possible relation with the incidence of child labour as brought out in the already existing literature.

(ii) Availability of data.

To examine the relationship between child labour variables (dependent) and the selected social, economic and demographic variables (independent), correlation has been worked out. The zero order correlation presented in the first section exhibits relationship between pair of variables. The second section deals with the regression analysis that includes only selected variables. Child labour in India being a multi-dimensional problem so it cannot be expected to be explained by only two variable model. Therefore multiple regression analysis has been attempted to see how well a set of independent variables can jointly predict a dependent variable and to provide a convincing explanation to the phenomenon of child labour. Stepwise multiple regression analysis has been used by generating suitable equations.

4.1 CORRELATES OF CHILD LABOUR

The relationship between child labour and the possible socio-economic variables is analysed here by generating a correlation matrix amongst them. The list 17
variables used for correlation analysis is presented below. The list is further
categorised into dependent and independent variables for the regression
analysis. The observations have been recorded at the state level for major states
of India for 1981.
1. \( X_1 = \) Total Child Labour (Proportion of child labour to total workers)
2. \( X_2 = \) Male Child Labour (Proportion of male child labour to total male
   workers)
3. \( X_3 = \) Female Child Labour (Proportion of female child labour to total
   workers)
4. \( Y_1 = \) Total Fertility Rate
5. \( Y_2 = \) Child-Woman Ratio
6. \( Y_3 = \) Percent Urban Population
7. \( Y_4 = \) Work Participation Rate
8. \( Y_5 = \) Annual Population Growth Rate
9. \( Y_6 = \) Percentage of SC Population to Total Population
10. \( Y_7 = \) Percentage of ST Population to Total Population
11. \( Y_8 = \) Literacy Rate
12. \( Y_9 = \) Dropout Rates (Primary level)
13. \( Y_{10} = \) Dropout Rates (Middle level)
14. \( Y_{11} = \) Children Attending School (5-9 years)
15. \( Y_{12} = \) Dependency Ratio
The correlation between the above mentioned variables, few significant correlations have also been carefully looked into. For a better understanding of the problem of child labour, special emphasis has been laid on those variables (independent) that exhibit statistically significant relationship with the child labour variables (dependent). The correlation values have been mentioned wherever the values were found to be significant.

Many studies on child labour show that literacy is an important factor negatively related with the prevailing incidence of child labour. The accompanying correlation values reveal a significant negative correlation between literacy rate (Y8) and the prevalence of male child labour for the sixteen major states (X2) \( r = -0.7029 \), significant at 1 per cent level of significance) as well as female child labour (X3)\( r = -0.7126 \), significant at 1 per cent level of significance) and the total child labour (X1)\( r = -0.6554 \), significant at 1 per cent level of significance). This means that the states with high literacy rate have low incidence of male as well as female child labour. In other words, it indicates that child work participation rate is higher where literacy ratio is lower. The literacy rate has a significant negative relationship with the fertility variables. It is
significantly negatively related with Total Fertility Rate ($Y_1$)\(^1\) ($r = -0.8053$) and Child-woman Ratio ($Y_2$)\(^2\) ($r = -0.8158$) at 1 per cent level of significance. The relation between fertility and education has been the subject of investigation of a number of studies in India. Invariably, all the studies have supported the view that the average fertility of the women who are well educated is lower than that of those who are moderately educated or uneducated. The present analysis shows that low level of literacy results in high fertility rates that in turn results in a bottom heavy population structure and abundant availability of children for work. When child labour is an important contributor in various activities, the parents view their children as economic assets and tend to have large family. Besides negative correlation between literacy and child labour, positive correlation is observed between child labour and dropout rates at primary level ($Y_9$). The negative correlation between child labour and percentage of child attending school in the age-group 5-9 years does give indication that states with larger proportion of children attending schools have low child work participation.

\(^1\) The Total Fertility Rate can be termed as the sum total of age-specific fertility rates. It is an estimate of the number of children a cohort of 1000 women would bear if they all went through their reproductive years exposed to the age-specific fertility rates in effect at a particular time.

\(^2\) The child-woman ratio that is the ratio of young children to women of age-groups which include the mothers. A commonly used ratio is that of children under five and women in the child bearing age, i.e., 15 to 50 years. Thus, $P_{0.5} / F_{15-50} \cdot 1000$
level. The above findings entail that education, if made compulsory, can play a very significant role in containing the problem of child labour.

The impact of fertility on child labour has also been analysed in many studies. These studies have shown that a negative relationship exists between the incidence of child labour and the level of fertility.

The present analysis found a significant negative relationship between the child-woman ratio (CWR) (Y2) and incidence of female child labour only. The relationship of CWR, though negative with male child labour and total child labour, however it is not significant. The other measures of the fertility also exhibit a negative relationship with child labour. The child-woman ratio (Y2) is much more useful and far simpler measure of fertility and can be calculated with the help of Census data. The significant negative relationship between CWR and female child labour indicates that in the states where the fertility is high, there is a high incidence of female child labour. The significant relationship emerges only in the case of female child and not in the case of male child labour. This also points towards the low status accorded to the female child vis-a-vis male child in the Indian society.
The prevalence of child labour as indicated by numerous studies, is also related to the economic situation in a given region. The two economic variables used in this analysis to examine the relationship between child labour and economic backwardness are - Per Capita Income at constant prices (Y13) and Poverty Ratio (Y14). Though the correlation results do not exhibit a significant relationship, but the direction of the relationship reflect that these two variables could also be the determining factors of child labour. The Per Capita Income at constant prices (Y13) has a negative correlation with child labour, implying that with an increase in the per capita income, there is a decline in the incidence of child labour. On the other hand, the Poverty Ratio (Y14) has a positive relationship with child labour. This indicates that in the states where there is a high proportion of the population below the poverty line, there is also a high incidence of child labour. The poverty of the households forces the children to work for a living and augment the earnings of the households. The only way for the child to support their parents economically is by way of their labour. This relationship indicates that to a certain extent economic backwardness is also responsible for the obnoxious practice of child labour. To eliminate child labour, poverty has to be eradicted by effectively implementing the economic development programmes.
The annual growth of the population (Y5) and child labour, reveals a positive relationship. However, the relationship is significant only in case of female child labour \( r = .6613 \) significant at 1 per cent level of significance. This implies that states with higher population growth rate have high female child labour ratio. Or in other words, with a rise in the population, there is a significant rise in the girl child labour. This points to the low status of the girl child and the discrimination faced by them in the Indian society. The existing social and cultural set up in family is too loaded against the girl child. The Census figures depict that the proportion of female child labour is much more than the male child labour. Female workers in the age-group of 0-14 has increased considerably and this growth is in sharp contrast to their male counterpart that has declined. The girl child is treated as a temporary member of the household and any investment on her, like education is considered to be a wastage. Education is not regarded as one of the essential attributes for girls. Instead of being sent to schools, the girls are sent to work. Thus this significant positive correlation between annual population growth rate only with the female child labour signifies that with an increase in the population, there is significant increase in the female child labour and it is not so in the case of male child labour.
The dependency ratio (Y12) indicating the proportion of economically inactive population per 1000 economically active population. It is calculated as the number of persons in the age-group 0-14 and 60 & above per 1000 persons in the age-group 15-59. The correlation result between dependency ratio and child labour show a positive relationship, though not a significant one. The positive relationship indicates that in those states where the dependency ratios are higher, the incidence of child labour is also high. This situation compels the family to send their children to the labour market where they are preferred as cheaper labour.

Urbanization (Y3), Percentage of SC population to total population (Y6), Percentage of ST population to total population (Y7) were not found to be directly related with child labour. These variables were not significantly correlated with any of the variables under consideration. From the above discussion, it needs to be mentioned that is not merely the economic advancement, but the over-all social development especially education, that holds the key in curbing the practice of child labour. It is mainly due to this fact that Kerala has lower incidence of child labour than Punjab, Haryana and several other states which have lower poverty ratio than Kerala but higher per capita income. The incidence is more in those areas which are not well developed both socially as well as economically. Thus, Child labour is essentially a case of
under-development, both economic as well as social.

Table 4.1  CORRELATION OF CHILD LABOUR AND SOCIO-ECONOMIC VARIABLES

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Y1) TFR</td>
<td>.2578</td>
<td>.2995</td>
<td>.1599</td>
</tr>
<tr>
<td>(Y2) CWR</td>
<td>.3534</td>
<td>.6063*</td>
<td>.3449</td>
</tr>
<tr>
<td>(Y3) URPOP</td>
<td>.1251</td>
<td>-.0953</td>
<td>.0851</td>
</tr>
<tr>
<td>(Y4) WPR</td>
<td>.6029*</td>
<td>.3204</td>
<td>.7191*</td>
</tr>
<tr>
<td>(Y5) APGR.RA.</td>
<td>.2863</td>
<td>.6613*</td>
<td>.2922</td>
</tr>
<tr>
<td>(Y6) @SC_POP</td>
<td>-.1757</td>
<td>-.2005</td>
<td>-.1930</td>
</tr>
<tr>
<td>(Y7) @ST_POP</td>
<td>.4093</td>
<td>.2379</td>
<td>.4363</td>
</tr>
<tr>
<td>(Y8) LIT RATE</td>
<td>-.7029*</td>
<td>-.7126*</td>
<td>-.6554*</td>
</tr>
<tr>
<td>(Y9) DROP.RATE(P)</td>
<td>.6092</td>
<td>.4345</td>
<td>.5341</td>
</tr>
<tr>
<td>(Y10) DROP.RATE(M)</td>
<td>.6434*</td>
<td>.4522</td>
<td>.5950</td>
</tr>
<tr>
<td>(Y11) CHILD.ATTEND.SCH.</td>
<td>-.4180</td>
<td>-.5871</td>
<td>-.3681</td>
</tr>
<tr>
<td>(Y12) DEP.RATI</td>
<td>.3034</td>
<td>.5266</td>
<td>.3334</td>
</tr>
<tr>
<td>(Y13) PCI_CP_</td>
<td>-.1600</td>
<td>-.2547</td>
<td>-.2128</td>
</tr>
<tr>
<td>(Y14) POV.RATI</td>
<td>.3304</td>
<td>-.0482</td>
<td>.2817</td>
</tr>
</tbody>
</table>

1-tailed Signif:  * - .01
4.2 REGRESSION ANALYSIS

For the regression analysis, some selected variables have been considered to avoid the problem of multicollinearity. Regression equations have been formed by taking different combinations of variables selected on the basis of correlation matrix. Due to high inter-correlation among some of the independent variables, they have not been taken in a single step. Those variables which have inter-correlation are either dropped from the analysis or are taken alternatively. The selected regression equations are as follows:

(A). \[ X_1 = 8.6' - 0.08Y_8' \]
\[ (7.1) \quad (-3.2) \]
\[ R^2 = 0.39 \quad \text{D.F.} = 14 \]

(B). \[ X_1 = 0.66 - 0.07Y_8' + 0.23Y_4' \]
\[ (0.4) \quad (-5.2) \quad (5.8) \]
\[ R^2 = 0.82 \quad \text{D.F.} = 13 \]

(The figures in the parentheses are t values)

where \[ X_1 = \text{Total Child Labour} \]
\[ Y_8 = \text{Literacy Rate} \]
\[ Y_4 = \text{Work Participation Rate} \]
Equation A shows that the explanatory power of the two variable model involving proportion of total child labour and literacy rate is only 39 per cent. It is evident that the relationship is significant and inverse. It implies that in states where the literacy rate is high, the incidence of child labour is low. Adding the second variable of work participation rate to the above model, indicates that this variable too, is significantly related with child labour with a positive sign. One per cent rise in the total workers results in 0.2 per cent rise in child labour. In other words, any increase in work participation rate, 20 per cent of it comes through child labour. Literacy and work participation rate put together are able to explain as much as 82 per cent variation in the total child labour.

(C). \[ X_1 = -8.5 + 0.30Y_4 + 0.82Y_1 \]

\[ (-3.1) \quad (5.1) \quad (2.5) \]

\[ R^2 = 0.62 \quad D.F = 13 \]

(The figures in the parentheses are t values)

where \( X_1 = \) Total Child Labour

\( Y_4 = \) Work Participation Rate

\( Y_1 = \) Total-Fertility Rate
Since the total-fertility rate (TFR) and literacy rate have a highly significant negative relationship, the literacy rate has been dropped while taking TFR into consideration among list of the independent variables. Like literacy rate, the coefficient of fertility rate also has a positive sign that indicates high incidence of child labour in those states which have a high fertility rate. Fertility can be both a cause and effect of child labour. More number of children in the family implies higher economic burden and the family may not have any other alternative but to send the child to work. When children help in fulfilling the subsistence needs of the family, the poor tend to have more children. They view procreation of children as multiplication of their economic assets. As already mentioned, fertility rate has negative relationship with literacy. This means that higher fertility indicates low literacy, which implies that instead of educating their children, large families send their children for work to ease the family’s economic burden. On an average 10 per cent rise in total fertility rate leads to 8 per cent increase in child labour. Total fertility rate and work participation rate explain 62 per cent of total variation in the incidence of child labour.

(D). \[ X^2 = 7.6^\dagger - 0.08Y^\ddagger \]
\[ \begin{array}{c}
(7.6) \\
(-3.7)
\end{array} \]

\[ R^2 = 0.49 \quad \text{D.F.} = 14 \]

(The figures in the parentheses are t values)
where \( X_2 = \) Male Child Labour
\( Y_8 = \) Literacy Rate

(F). \( X_3 = 15.5 - 0.16Y_8 \)
\( (8.0) \quad (-3.8) \)

\[ R^2 = 0.47 \quad \text{D.F.} = 14 \]

(The figures in the parentheses are t values)

where \( X_3 = \) Female Child Labour
\( Y_8 = \) Literacy Rate

Regressing male and female child labour upon literacy, one finds that there exists a negative relationship. This means that higher the rate of literacy, lower the incidence of child labour, both male as well as female. The relationship is significant at one per cent in both the cases. It needs to be mentioned here that the role of education appears to be more effective in curbing female child labour than male child labour. It is clear from the above two coefficients of regressions that 10 per cent rise in literacy results in a decline of female child labour by 1.6 per cent and only 0.8 per cent in case of male child labour, which is approximately half of the former.

(G). \( X_2 = -8.2 + 0.20Y_4 + 0.010Y_2 + 0.01Y_{15} \)
\( (-2.6) \quad (3.3) \quad (2.4) \quad (0.5) \)

\[ R^2 = 0.48 \quad \text{D.F.} = 12 \]
(H). \[ X3 = -16.1'' + 0.31Y4'' + 0.03Y2'' + 0.06Y15 \]
\[ (-2.7) \quad (2.7) \quad (3.9) \quad (-1.4) \]

\[ R^2 = 0.51 \quad \text{D.F.} = 12 \]

(The figures in the parentheses are t values)

where \[ X2 = \text{Male Child Labour} \]
\[ X3 = \text{Female Child Labour} \]
\[ Y4 = \text{Work Participation Rate} \]
\[ Y5 = \text{Child-Woman Ratio} \]
\[ Y15 = \text{Poverty Ratio} \]

Regressing male and female child labour upon work participation rate (WPR), child-woman ratio (CWR) and Poverty ratio is presented in equation (G) & (H).

The relationship of poverty ratio with male and female child labour is positive but insignificant. Poverty is considered to be one of the major factors for the prevalence and perpetuation of child labour. In case of female child labour, WPR has positive coefficient that is significant at 5 per cent level, while CWR is positive and significant at one per cent level. One per cent rise in work participation rate leads to 0.3 per cent rise in female child labour. Similarly, 10 per cent rise in CWR, results in an increase in female child labour by 0.3 per cent. In case of male child labour, both of these coefficient have lesser value. One per cent increase in work participation rate increases male child labour by
only 0.2 per cent and 10 per cent rise in CWR lead to 0.1 per cent increase in male child labour. The problem of female child labour appears to be more severe than the male child labour, and measures aimed at curbing the problem should lay more emphasis on female child labour.

Briefly, the problem of child labour can be checked by raising the level of education, by propagating small family norms and by raising the income level of the poor.