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**Child labour in Tamil Nadu:**  
**A preliminary account of its nature, extent and distribution**

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**ABSTRACT OF PAPER:** This paper is concerned to present a broad-based picture of the phenomenon of child labour in the southern Indian state of Tamilnadu. It draws principally on data in the Census of India and various rounds of the Central Statistical Organization's National Sample Surveys in order to present a systematic account of the magnitude of child labour in Tamilnadu, its distribution across well-defined socio-economic groups classified by gender, sector-of-origin and caste, and its dispersal across space.

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# **CHILD LABOUR IN TAMILNADU: A PRELIMINARY ACCOUNT OF ITS NATURE, EXTENT AND DISTRIBUTION**

D.Jayaraj and S.Subramanian

## **1. INTRODUCTION**

In November 1989, the Government of India ratified the Convention on The Rights of the Child, drafted by the United Nations Commission on Human Rights. The Convention draws attention to four sets of rights, namely: the right to survival; the right to protection; the right to participation; and the right to development. The phenomenon of child labour is inimical to all of these rights; and both the central government and the various state governments of the Indian Union have incorporated the eradication of this social pathology into their respective social welfare agenda. The translation of intent into implementation presumably cannot proceed very far without a prior assessment of the magnitude of the problem; and it is to this rather elementary question that the present paper is addressed.

In this paper we shall be principally concerned to obtain an estimate of the incidence of child labour in Tamilnadu. Such estimates as are available are often partial for the important reason that the conventional definition of a worker adopted by the National Sample Survey Organisation and the Population Census leads to an incomplete enumeration of child workers. The definition of a worker, adopted by these two principal sources of information on child labour, recognizes as workers only those children who are employed either as paid workers or in production-related activities in which at least a portion of the produce is marketed. This would clearly leave out of the reckoning a considerable number of children employed as unpaid workers in production-related activities and in domestic duties.

The omission of unpaid workers in family enterprises is compatible with the common view, prevalent not only in India but across many developing countries, that child work within a family context is unproblematic. In this connexion, Alec Fyfe (1989,pp71-72) makes the following observation:

The representatives of Bangladesh, Ivory Coast, Colombia, Egypt, Algeria and Syria, among others, regarded child work within the family as a duty and an expression of family solidarity. We should be sceptical of such ingrained assumptions. Many children make a deliberate choice in favour of 'exploitation outside the home' and control of their own earnings, often in the face of parental opposition, rather than endure the 'eternal apprenticeship' of long hours without remuneration under the control of parents.

In this paper, an attempt is made to circumvent the definitional inadequacy alluded to earlier by estimating the numbers of children who constitute the overwhelming bulk of (statistically)

'invisible' workers. This is sought to be done by counting the numbers of children in the school-going age-group who are listed as neither workers nor attending school. While the soundness of such a procedure needs to be qualified, as is done later in this paper, an attempt of this nature is expected to yield a more accurate assessment of the magnitude of the problem under review.

Apart from obtaining an estimate of the overall incidence of child labour in Tamilnadu, we shall also be concerned to assess the extent of disparity which obtains in its distribution across different well-defined population groups. Specifically, we shall look for evidence relating to differentials in the prevalence of child labour when the population is classified by gender, by sector of origin and by caste: in this, as in other aspects of social deprivation, there is no prior reason to believe that the burdens of society would be borne equitably by its constituent groups. We shall also undertake a spatially disaggregated analysis, at the level of individual districts, in order to obtain a picture of inter-regional variations in the incidence of child labour.

A very broad-based macro exercise of the sort outlined above has some utility in a context wherein there has been little systematic effort at either estimating the extent of child labour in the state or of obtaining a picture of its distribution over space and across different socio-economic groups. A good deal of the literature on child labour in India<sup>1</sup> provides vivid and revealing accounts of the exploitation of child labourers in different industries/occupations. Studies such as these undoubtedly offer valuable insights into the plight of child workers in specific industries; but their particularistic focus has also led to the emergence of a common belief, both among researchers and policy-makers, that the phenomenon of child labour is a special feature of certain specific industries in certain specific towns. In the Indian state of Tamilnadu, for example, child labour often is thought to be confined only or predominantly to the match and fireworks industries in Sivakasi (a town in Ramanathapuram district), and in the bidi-making industry in Gudiyatham (a town in North Arcot district). It goes without saying, of course, that these industries do employ large numbers of children who work under conditions of extreme hazard to life and limb. This makes it natural to argue a high-priority case for eliminating the employment of child labourers in these industries. Having said this, it is also important to point out that these industries probably account for a relatively small proportion of the total extent of child labour in the state. Thus, confining attention to only a few industries in specific locations wherein the plight of working children has (with justice)

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<sup>1</sup> See, for example, Juyal, Kumari and Chandola (1981); Kothari (1983); Dingwaney, Dogra, Vidyasagar and Gupta (1988); Kanbargi (1988); Weiner (1991); Mishra and Pande (1992a,b); Government of Tamilnadu (Department of Social Welfare) (1994); and Kumar (1996).

been dramatized in popular accounts, will not serve the cause of eradication of the bulk of orderly, systematic child labour which is prevalent across the state. A proximate motivation for the present paper is, therefore, to complement the many detailed micro-level case studies that are available with a systematic assessment of the magnitude of the problem of child labour, its distribution across population subgroups, and its spatial dispersion.

This paper is organized as follows. Section 2 deals with preliminary considerations relating to measurement issues, data sources and conceptual ambiguities in definitions. Section 3 presents an account of broad magnitudes of the problem of child labour, together with such evidence on trends as is available for the state; the consequences of taking a less conservative stance toward the definition of child labour than official data sources have adopted are also emphasized. In section 4 we present some estimates of the differential impact with which the burden of child labour is borne by certain well-defined sections of the population when the latter is classified by gender, by sector of origin and by caste. The spatial dispersion of child labour is examined in section 5, wherein we also seek to correlate the incidence of child labour with the occurrence of other forms of human deprivation. Section 6 concludes.

## 2. MEASUREMENT, DATA AND DEFINITIONS

### 2.1 Measures of Prevalence and Distribution

In order to measure the incidence of child labour, we shall employ an index called the Work Participation Rate (or WPR) of children. The WPR is defined as the ratio of the number of workers in the age-group 5-14 to the total population in this age-group. The WPR is the counterpart of a very familiar index of poverty, namely, the headcount ratio which measures the proportion of poor persons in a population. Such an index is decomposable. That is to say, the overall WPR of children can be written as a population-weighted sum of the group-specific WPRs:

$$(1) \text{ WPR} = \sum_{i=1}^m s_i \text{WPR}_i$$

where  $s_i$  is the share of group  $i$  in the total population of children;  $\text{WPR}_i$  is the work participation rate of group  $i$ ; and  $m$  is the number of groups into which the population has been partitioned. The grouping of the population can be effected along the lines of caste, gender, sector of origin, religion, occupation, or any other category that may be deemed to be socio-economically relevant for the purpose at hand. The expression for WPR, as presented in equation (1), allows us to identify the contribution of each group to the total incidence of child labour in a society: specifically, the contribution  $c_i$  of the  $i$ th group to total WPR is given by

$$(2) c_i = s_i WPR_i / WPR.$$

The WPR is undoubtedly a very rudimentary index; but it does possess the attractive property of decomposability, apart from being straightforwardly simple to comprehend, and this makes it a natural candidate for measuring the extent of child labour in a society.

For any group  $i$ , data on the quantities  $c_i$  and  $s_i$  can be used to construct a simple, normalized index of 'relative disadvantage' in the following fashion. Notice first that it is reasonable to pronounce a group  $i$  to be neither advantaged nor disadvantaged when  $c_i = s_i$ , that is, when its relative contribution to the overall WPR coincides with the group's population share. A simple index of deviation from the norm of representation in the working population according to representation in the total population is then given by

$$(3) D_i = (c_i - s_i) / s_i.$$

To obtain an index which is normalized, we need to divide  $D_i$  in (3) by the maximum value -- call it  $D_i(\max)$  -- which  $D_i$  can attain. Given  $s_i$ ,  $D_i$  attains its maximum value when  $c_i$  attains its maximum value  $c_i(\max)$ . To evaluate  $c_i(\max)$ , we proceed as follows. Recall that, by definition,  $c_i = s_i(WPR_i / WPR)$ . Letting  $P_i$  stand for the (child) population of group  $i$ ,  $L_i^c$  for the population of child workers in group  $i$ ,  $P$  for total (child) population, and  $L^c$  for the total population of child workers, it is readily clear that

$$(4) c_i = [s_i(WPR_i / WPR) = (P_i / P)(L_i^c / P_i) / (L^c / P)] = L_i^c / L^c.$$

$c_i$  is maximized when  $L_i^c$  is maximized. It should be obvious that the maximum value  $L_i^c$  can attain is  $L^c$  if  $P_i \geq L^c$  (or equivalently,  $P_i / P = s_i \geq L^c / P = WPR$ ); and that this maximum value is  $P_i$  if  $P_i < L^c$  (or equivalently,  $s_i < WPR$ ). That is,

$$c_i(\max) = 1 \text{ if } s_i \geq WPR;$$

$$= s_i / WPR \text{ if } s_i < WPR.$$

Given (5), and noting that  $D_i(\max) = (c_i(\max) - s_i) / s_i$ , we have:

$$(6) D_i(\max) = (1 - s_i) / s_i \text{ if } s_i \geq WPR;$$

$$= (1 - WPR) / WPR \text{ if } s_i < WPR.$$

From (5) and (6), it follows that a normalized index of relative disadvantage can be written as:

$$(7) d_i' (= D_i / D_i(\max)) = (c_i - s_i) / (1 - s_i) \text{ if } s_i \geq WPR;$$

$$= [(c_i - s_i)WPR] / [s_i(1 - WPR)] \text{ if } s_i < WPR.$$

Recalling that  $c_i - s_i = s_i(WPR_i - WPR) / WPR$ , we can now obtain from (7) an expression for  $d_i'$  which only has terms relating to the group-specific population shares and work-participation rates, and the overall work-participation rate:

$$(8) d_i' = (s_i / (1 - s_i))((WPR_i - WPR) / WPR) \text{ if } s_i \geq WPR;$$

$$= (WPR_i - WPR) / (1 - WPR) \text{ if } s_i < WPR.$$

Notice from (8) that a group  $i$  is relatively disadvantaged whenever  $d_i^*$  is positive (i.e. whenever  $WPR_i > WPR$ ), and relatively advantaged whenever  $d_i^*$  is negative (i.e. whenever  $WPR_i < WPR$ ). It should be clear that a ranking of the groups in descending order of the index  $d_i^*$  will place the most disadvantaged (or least advantaged) group at the head of the list, and the least disadvantaged (or most advantaged) group at the bottom of the list.

The simple measure of relative disadvantage given by (8) will find application in our subsequent analysis of group-specific contributions to child labour in Tamilnadu, in the context of certain standardly relevant socio-economic classifications of the population such as by gender, caste and sector of origin.

## 2.2 Sources of Data

In order to construct a picture of the extent of child labour and its spatial and group-related dispersal, information available in two important sources of data will be used. These data sources are constituted by (a) various rounds of the survey on 'Employment and Unemployment', conducted by the National Sample Survey Organisation, and pertaining to the years 1972-73, 1977-78, 1983, and 1987-88; and (b) the Population Census data for the year 1981. The Population Census data are out of date by a decade-and-a-half. Nevertheless, given that Census data for 1991 are not yet available, the 1981 Census is the only source of information which can be used to construct a picture of the incidence of child labour disaggregated to below the level of a state. In addition -- and admittedly in the spirit of seeking something of a virtue in necessity -- it is probably true that the results obtained on the spatial and group-specific distribution of child labour using the 1981 Census data constitute a reasonably accurate picture, along qualitative lines, of conditions as they presently obtain. This is for the reasons that (a) in the last one-and-a-half decades neither the rural economy, in general, nor the structure of the agrarian economy, in particular, has witnessed any profoundly radical change; and (b) there has not been much by way of technological transformation in the industries where child labour is employed. Even so, it is regrettable that at this late date, the long delay in the availability of the 1991 Census data should constrain the researcher to employ information of 1981 vintage.

## 2.3 Conceptual and Definitional Issues

The measurement of the incidence of child labour poses problems on two counts. The first is related to the concept of 'childhood'. The precise question that arises in this context is: who is a child? The United Nations Convention on The Rights of the Child defines a child as every human being below the age of eighteen years, unless, under the law applicable to the

child, majority is attained earlier (Article 1; cited in UNICEF (1994,p3)). However, the concept varies a great deal depending on the purpose for which it is employed (for example, the definition becomes variable as one moves from the discourse on political rights to the one on employment). For our purposes, we shall adopt the Census definition of a child, with a minor modification. The Census of India defines a child as a person below the age of 15. In this paper, we shall treat as children only persons who have completed five years of age but are below the age of 15.

The second aspect of the problem is related to the definition of a worker. The Census employs the categories of 'main' and 'marginal' workers while the National Sample Survey (NSS) employs the categories of 'principal status' and 'subsidiary status' workers. Workers who are gainfully employed for the major part of the year are counted as main and principal status workers, respectively, by the Census and the NSS. On the other hand, workers who are not employed for the major part of the year but are intermittently engaged in some gainful activity, are classified as marginal and subsidiary status workers, respectively, by the Census and the NSS. The conventional definition of total workers, as indicated earlier in the Introduction, includes only the 'main' ('principal status') and 'marginal' ('subsidiary status') workers, that is, only such workers as are 'gainfully' employed -- the crucial aspect of the definition residing in the criterion of work which is remunerated, or which results in output destined for the market. The conventional definition renders 'invisible' those workers who are employed as unpaid workers in production-related activities which find no market outlet, and in domestic duties: such workers simply have no place in the count of total workers.

Since it is difficult to obtain precise data on the incidence of 'invisible' workers, we take recourse to a specific assumption in order to arrive at the numbers of such workers. In terms of this assumption, all those children in the age-group 5-14 who are neither in school nor are listed as workers are treated as 'invisible' workers. This method might overestimate the numbers of 'invisible' workers in a strict sense, as there exists the possibility that some children, who are reckoned in our estimate as 'invisible' workers, are, in fact, idle<sup>2</sup>. We believe that this overestimation does no serious damage to the substantive spirit in which, in this paper, the phenomenon of child labour is identified as a manifestation of social disadvantage or social deprivation. We shall take it to be a symptom of generalized 'capability-failure' if a

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<sup>2</sup> There is another reason why the incidence of 'invisible' child labour, as we have defined it, is likely to be overestimated. This has to do with age mis-reporting by respondents, arising from which significant numbers of children who have not completed the age of 5 might be included in the age-group 5-14. This problem is more acute in the case of the Census -- there is some apprehension that Census enumerators are relatively less well trained -- and this could be a reason why (as we shall see later in Section 3.3) the estimate of 'invisible' workers obtained from the Census of 1981 is higher than that obtained from NSS data for 1983.



child of school-going age is involuntarily restricted from being in the school system -- either for reasons of 'idleness' (which is in all probability a euphemism for involuntary unproductiveness) or for reasons of being put to work without remuneration.

The two definitions employed in this paper will be referred to, respectively, as (a) the 'restrictive' definition and (b) the 'liberal' definition. The difference between the two definitions is that the latter includes a set of children whom we call 'invisible' workers.

### 3. THE MAGNITUDE OF THE PROBLEM

#### 3.1 The 'Restrictive' Definition

Information on the WPR under what we have called the 'restrictive' definition is provided in Table 1, separately for the rural and urban areas and, within each sector of origin, separately for boys and girls. This information, based on NSS data, is provided for four years: 1972-73, 1977-78, 1983, and 1987-88. Census data for 1981 are also presented. Although comparable data in the same year from the Census and the NSS are not available, it would appear that the Census reports figures which are lower than the NSS estimates. The NSS estimates indicate that -- in a point-to-point comparison -- the overall incidence of child labour has declined from a little over 13 per cent in 1972-73 to a little under 11 per cent in 1987-88. The decline is steep for rural boys (from 17.1 per cent to 10.6 per cent), and less so for rural girls (from 17.2 per cent to 14.9 per cent); however, in the urban areas, there has been an increase for both boys and girls -- less steep for boys (from 5.8 per cent to 6.8 per cent) than for girls (from 3.8 per cent to 6.7 per cent). The net effect at the overall level of the state has been a moderate decline for girls (from 13.3 per cent to 12 per cent), and a sharper decline for boys (from 13.4 per cent to 9.3 per cent). What is noteworthy is that even in the latest year (1987-88) for which data are available the work participation rate of children -- estimated conservatively -- is at the disconcertingly high level of nearly eleven children out of every one hundred.

[Table 1 to be inserted here]

#### 3.2 The Occupational Incidence of Child Labour Under the 'Restrictive' Definition

Which are the occupations significantly associated with the employment of child labour? To examine this, we analyse the 1981 Census data on the occupation-wise work participation rates of children in each of the occupations covered by the Census' nine-fold

industrial classification: (i) cultivators; (ii) agricultural labourers; (iii) livestock, forestry, fishing, hunting and plantations, orchards and allied activities; (iv) mining and quarrying; (v) manufacturing, processing and repairs: (a) household industry; (b) other than household industry; (vi) construction; (vii) trade and commerce; (viii) transport, storage and communication; and (ix) other services. (For our purposes, we shall resort to a ten-fold classification, by treating v(a) and v(b) separately). To obtain an idea of which occupations are prominently associated with child labour, we proceed as follows.

For each industry  $i$ , define  $L_i$  to be the number of workers and  $L_i^c$  to be the number of child workers, respectively, in occupation  $i$ ; and let  $L = \sum_i L_i$  and  $L^c = \sum_i L_i^c$  represent, respectively, the total numbers of all workers and child workers aggregated over all the occupations. Then, the 'child-labour intensity' of occupation  $i$  -- call it  $\ell_i$  -- is given by the proportion of child labourers in the industry's total workforce:  $\ell_i = L_i^c / L_i$ . The overall child-labour intensity  $\ell^*$ , aggregated over all occupations, is obtained as a weighted average of the occupation-specific child labour intensities:  $\ell^* = \sum_i v_i \ell_i$ , where  $v_i$  is the weight of occupation  $i$  in the total employment of child labour, viz.  $v_i = L_i^c / L^c$ . The contribution of occupation  $i$  to overall child-labour intensity  $\ell^*$  is then given by  $\beta_i = v_i \ell_i / \ell^*$ . In Table 2, we present the value of  $\beta_i$  for each of the ten occupations listed earlier, separately for the rural and the urban areas.

[Table 2 to be inserted here]

Consider the rural areas first. Table 2 indicates that just three of the ten occupations -- agricultural labour, cultivation, and manufacturing (household industry), in that order -- account for almost the entire (98.9 per cent) of the overall child-labour intensity. For the urban areas, again three occupations out of ten -- manufacturing (non-household industry), manufacturing (household industry) and agricultural labour, in that order -- contribute to almost the entirety (96.3 per cent) of aggregate child-labour intensity. The considerable predominance of agricultural labour in the rural areas suggests that the popular belief of child labour in the villages as being largely a matter of non-wage work within a family enterprise is fallacious. Similarly, the popular belief that in the towns and cities child labour is to be found all-but-exclusively in the non-farm sector turns out to be misguided: the contribution of agricultural labour to overall child-labour intensity, at a little over 13 per cent, is by no means trivial.

NSS data for 1983 (NSS Report No.341/9: Report on the Third Quinquennial Survey on Employment and Unemployment (January-December 1983)) suggest that in the rural areas, the proportion of the workforce constituted by casual labour is nearly 55 per cent in agriculture

and 26 per cent in non-agriculture, while the corresponding figures for the urban areas are 25 per cent and 26 per cent respectively. Further, casual labourers in agriculture (respectively, non-agriculture) in rural Tamilnadu accounted for nearly 64 per cent (respectively, 32 per cent) of the adult illiterate work force, while the corresponding figures in the urban areas were 55 per cent and 42 per cent respectively. Average daily wages/earnings of casual labourers compared adversely with those of regular employees: in the rural areas, the average wages for casual labourers in agriculture, hunting, forestry and fishing were Rs.5.56 and in non-agriculture, Rs.6.63, while for regular employees the corresponding figures were higher, at Rs.7.54 and Rs.11.82 respectively; in the urban areas, average daily earnings of casual labourers in agriculture and allied activities were Rs.6.56, and Rs.7.19 in non-agriculture, while the corresponding figures for the regular employees were Rs.9.56 and Rs.19.09 respectively. Briefly, it would appear that the occupations significantly associated with the employment of child labour are also those whose work force is characterized by high levels of casualisation and illiteracy, and low levels of skills and wages.

### 3.3 The 'Liberal' Definition

As we have noted earlier, the WPR under the 'liberal' definition is given by the proportion of children in the age-group 5-14 who are either in the 'gainfully employed' work-force or outside this work-force and not attending school. Table 3 provides information on the incidence of child labour, under this expanded definition, on the basis of data available in selected rounds of the NSS and in the 1981 Census. (NSS data for 1987-88 are not available, since for this year coverage for the 5-14 age-group is restricted to what is called the 'economically active' population). Comparison on a point-to-point basis indicates that (a) the rural WPR has declined sharply, from 58.5 per cent in 1972-73 to 38.8 per cent in 1983; (b) the urban WPR has declined less sharply, from 26.5 per cent in 1972-73 to 22.2 per cent in 1983; and (c) there has been a fairly large decline in the overall state-level WPR, from 48.8 per cent in 1972-73 to 33.4 per cent in 1983. While we have noted earlier that the 1981 Census data reports 'restricted' WPRs which are lower than the NSS estimates, the opposite is the case with the 'liberal' WPRs: the 1981 Census figures are, in general, considerably larger than the 1983 NSS figures<sup>3</sup>. Despite the general trend of decline we have just noted, what stands out in the figures presented in Table 3 is that, whether we consider the NSS 1983 data or the Census 1981 data, the magnitude of the 'liberal' WPR is disturbingly large: the NSS (respectively, the Census) suggests that a third (respectively, over two-fifths) of the

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<sup>3</sup> See fn.2.

children in the school-going age-group 5-14 were either 'economically active' workers or outside this work-force and the school-system alike.

[Table 3 to be inserted here]

It is instructive to consider the 'liberal' WPR figures disaggregated by age-groups. Table 4 provides information, based on the NSS 1983 estimates, on the proportion of children attending school in each of the age-groups 5-9 and 10-14, and separately by sector-of-origin and gender: these figures are easily derived from the 'liberal' WPRs since, by definition, the proportion of children attending school is just one minus the 'liberal' WPR. From Table 4 it is clear that, irrespective of sex and sector-of-origin, the proportion of school-going children is in general much higher in the 5-9 age-group than in the 10-14 age-group. This suggests that significant numbers of children drop out of school, as they progress up the age-ladder, to join the labouring population. This phenomenon appears to be particularly well-marked among rural girls: while nearly 70 per cent of girls in the age-group 5-9 are in school-attendance, only a third in the age-group 10-14 are still in school: the implication is that -- to an order of approximation -- about 53 out of every one hundred rural girls attending school in the age-group 5-9 drop out of school before they complete the age of 14. While this issue is not explicitly addressed at any length in this paper, it is important to underline the fact (as has been done most forcefully in the work of Myron Weiner, 1991) that the flip side of the child labour coin is a defective educational system which permits -- against the background of various Plan Document promises relating to universal mandatory school education -- such large seepages into the (paid or unpaid) labour force from the school system: the problem, therefore, is not just one of enrolment into schools but also one of retention within them.

[Table 4 to be inserted here]

### 3.4 'Invisible' Child Labour

Data on the incidence of 'invisible' child labour, obtained as the difference between the WPRs estimated under the 'liberal' and the 'restrictive' definitions of total workers, are furnished in Table 5. Given the trends in the WPRs under the two definitions, the trend in the incidence of 'invisible' child labour conforms to the expectation of a secular decline. NSS data suggest that the overall incidence of 'invisible' child labour, at the level of the state, has declined from a little over 35 per cent in 1972-73 to a little under 20 per cent in 1983; for the same two points of time, the decline in the rural areas has been from around 42 per cent to

around 22 per cent, and in the urban areas from around 22 per cent to 15 per cent. It is interesting to note that 'invisible' child labour in general accounts for a larger share of child labour under the 'liberal' interpretation in the urban areas than in the rural. This share, in urban Tamilnadu, has been in the region of 82 per cent in 1972-73, 70 per cent in 1977-78, and 68 per cent in 1983; while the corresponding figures in rural Tamilnadu are, respectively, 71 per cent, 70 per cent and 57 per cent. (This pattern is corroborated by the 1981 Census data: the share of 'invisible' labour is 86 per cent in the urban areas and 79 per cent in the rural). These figures are both suggestive and somewhat unexpected: they seem to contradict the generally held notion that it is much more a feature of the rural than of the urban setting that work by children is carried out within household units wherein the incidence of unpaid work dominates.

The chief feature of Table 5 is that it brings out the systematic hiatus that obtains between the 'liberal' and the 'restrictive' estimates of the incidence of child labour. The 1983 NSS data, for instance, indicate that the estimate of the WPR for Tamilnadu under the 'restrictive' definition understates the incidence of child labour under the 'liberal' definition by around 60 per cent. Table 5 alerts us to the possibility that the conventional (conservative) definition of a worker is conducive to a gross understatement of the magnitude of child labour in the state.

[Table 5 to be inserted here]

### 3.5 The Distribution of 'Invisible' Workers by their Main Activity

How are the children we have designated as 'invisible' workers occupied? NSS data for 1983 provide information on the distribution of 'invisible' workers by their main activity. These data are presented in Table 6. The categories of 'invisible' workers and the distribution of children by sex across these categories provide a harsh commentary on gender-discrimination. Take, in particular, the category of children who are perceived to be 'too young to work or attend school' (row 3 of Table 6). Of all 'invisible' boy workers in the age-group 5-9, about 94 per cent are perceived to be 'too young' to work or attend school, while the corresponding figure for girls in the same age-group is less than 89 per cent. These statistics are pronouncedly more striking for the age-group 10-14: in the urban areas, 56 per cent of children in the same age-group are 'too young' when they are boys, and only 32 per cent are 'too young' when they are girls; and the corresponding figures for boys and girls, respectively, in the rural areas, are 82 per cent and 38 per cent. The underlying social arithmetic of gender-bias suggests that of two children of the same chronological age, the girl is older than the boy!

[Table 6 to be inserted here]

Setting aside the question of differences arising from the sex of the child, the fact that such large proportions of children -- especially in the 10-14 age-group -- are reported to have been kept out of school for reasons of being 'too young' must be treated with considerable suspicion: it seems extremely unlikely that such children are simply permitted to idle away their time rather than that they are engaged in some form of work.

Consider next the category of 'invisible' child workers reporting 'disability'. In the age-group 5-9, the proportion of rural boys reporting disability exceeds that of rural girls reporting disability by a factor of 443 per cent; the corresponding figure for the age-group 10-14 is 208 per cent. In the age-group 10-14, the proportion of disabled urban boys exceeds that of disabled urban girls by a factor of 342 per cent, though, surprisingly, no disability is reported for urban boys in the age-group 5-9. Overall, these figures suggest that disability as a social, even if not as a clinical condition, is more readily perceived in boys than in girls<sup>4</sup>.

The socially determined gender-based allocation of duties among children is clearly in evidence in the distribution by sex of 'invisible' child workers across the activities of 'domestic duties' and 'free collection of goods' (rows 1 and 2 of Table 6). The relevant statistics indicate that in the rural areas, for the age-group 10-14, 58 per cent of girls and only 3.2 per cent of boys were engaged in these categories of activity, while the corresponding figures in the urban areas were 66 per cent and 4.4 per cent respectively. This gender-related pattern of work allocation among children influences the nature of the subsequent labour market participation of girl children: the allocation of household duties or domestic chores to girls produces 'invisible' girl workers in their early age, and later transforms them into 'invisible' women workers<sup>5</sup>.

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<sup>4</sup> See, in this connection, Barbara Harriss-White (1997) -- who, it should be clarified, is concerned (in the work cited) with disability and not child labour.

<sup>5</sup> While it is clear that girls are more severely tied to the drudgery of domestic tasks than are boys, it is also difficult to accept some of the figures reported in Table 6 at face-value --- in particular the finding that, for the age-group 10-14, 82 per cent and 56 per cent respectively of rural and urban boys who are neither in the 'gainfully employed' work force nor in school are essentially unoccupied, or 'idle'. The nature and causes of such idleness deserve further probing.

## 4. CHILD LABOUR AND GROUP DISPARITY

### 4.1 Motivation

In this section, we first resort to three simple binary classifications of the population: by gender ('boys' and 'girls'); by sector of origin ('rural' and 'urban'); and by caste ('Scheduled Castes and Tribes' and 'Others'); and we compute the index of relative disadvantage, discussed in Section 2.1, for the disadvantaged subgroup in each pair of groups into which the population has been partitioned according to the criteria just mentioned. We subsequently present a consolidated picture of group-related disparities in the distribution of child labour in the state. The definition of child labour we employ throughout is in terms of the 'liberal' interpretation discussed in section 2.3.

### 4.2 Gender

Table 7 provides information on a set of variables (relating to the population of female child workers) which are of relevance for computing the index of relative disadvantage for girls. This is done for each of the years for which data from the NSS are available (1972-73, 1977-78, and 1983) and for the year 1981 on the basis of Census data. The index of relative disadvantage for girls -- call it  $d'_g$  -- is computed separately for the rural areas, the urban areas and for the state as a whole (rural and urban combined). The index  $d'_g$  -- see Row 6 of Table 7 -- is derived logically from the data presented on the variables in the preceding five rows: Table 7 is largely self-explanatory, and we shall here confine ourselves to a quick summary of certain salient features of the table.

[Table 7 to be inserted here]

What is immediately discernible from (Row 6 of) Table 7 is that  $d'_g$  is positive -- meaning that girls constitute the relatively disadvantaged group while boys constitute the relatively advantaged group -- in every year for which data are available, and in each sector of origin and for the state as a whole. Furthermore, rural girls are seen to be systematically relatively more disadvantaged than their urban counterparts. For the state as a whole, the extent of relative disadvantage suffered by girls is by no means insignificant: the index  $d'_g$  ranges from 17 per cent (Census 1981) to nearly 22 per cent (NSS 1983). Although we have not presented the data here, it turns out that a disaggregated analysis of the 1981 Census data reveals a bias against girls in the distribution of child labour in every district of the state: for any district, the largest share of girls in the total population of children was 49.6 per cent,

while in any district, the smallest relative contribution of girls to the 'liberal' WPR was 53.4 per cent. These findings corroborate the indications of gender-based discrimination that have already been noted in Section 3.5.

#### 4.3 Sector of Origin

Table 8 presents a picture of the disparity which obtains between the rural and the urban areas in the distribution of child labour. This table is 'parallel' in construction to Table 7: information is provided on a set of variables (of relevance to the population of rural child workers) which facilitates the derivation of the value of  $d_r$ , -- the index of relative disadvantage for the rural population -- separately for boys, for girls, and for all children (boys and girls combined). Again, the estimates are provided for each of the NSS rounds for which data are available (1972-73, 1977-78 and 1983) and for the 1981 Census.

[Table 8 to be inserted here]

$d_r$  is not just positive -- meaning that rural children constitute the relatively disadvantaged group while urban children constitute the relatively advantaged group -- but hugely positive. Row 6 of Table 8 indicates that the value of  $d_r$  has ranged from a high 33.2 per cent (Census 1981) to a very high 44.4 per cent (NSS 1972-73). Further, in every year for which estimates have been provided, the index of relative disadvantage for rural children is higher for the population of girls than for the population of boys. A disaggregated district-level analysis of the 1981 Census mirrors these findings systematically: it turns out that in every major district (with the exception of Madras, which is a one-hundred per cent urban district), the relative contribution of the rural areas to the total WPR exceeds their relative share in total population.

In the context of the above findings, it is pertinent to recall the characterization -- due to Assefa Bequele and Jo Boyden (1988) -- of certain widely-held beliefs concerning the nature of child labour in agriculture and in industry. They say (1988, p.2):

It is generally believed that the most dramatic forms of exploitation of working children are associated with waged labour. The development of industry and allied activities has been accompanied by a radical transformation in the nature of work, the working environment, working relations and conditions under which work is carried out. Waged labour is thought to be qualitatively different from activities realized within the domestic enterprise. While work in an agrarian setting has traditionally been carried out within the context of household production, in industry and related sectors it is generally realised within an employer-employee structure.



Beliefs of this nature often tend to a certain extreme sort of conclusion -- namely, that child labour in a rural setting is essentially unproblematic. Such a conclusion manifests itself in public policy less by way of assertions in its favour than by way of large-scale neglect of the phenomenon of rural child labour.

In the context of Tamilnadu, for example, Sivakasi -- a town in Ramanathapuram district and the centre of the match-works industry -- figures often in public discourse on child labour (which is as it should be), while the systematic prevalence of child labour in other areas, particularly the rural areas of the state, tends to receive little attention (which is as it ought not to be). Neglect of child labour in the rural areas -- particularly in view of its large magnitude, which has just been reviewed -- is thus not only detrimental to the cause of its eradication in the state, but will only serve to exacerbate the existing rural-urban disparity in the extent of deprivation suffered by children.

#### 4.4 Caste

The 1981 Census provides disaggregated caste-wise data on the incidence of child labour at the level of the district. For our purposes, we have clubbed the Scheduled Castes (SC) and Scheduled Tribes (ST) into a single group which we call the Scheduled Castes and Scheduled Tribes (SCST) group, while the rest of the population is comprehended under the term 'Others'. Table 9 provides, for the state as whole as well as for each of twelve districts for which Census data are available, information on a set of variables which enter into the computation of the index -- call it  $d'_{SCST}$  -- of relative disadvantage experienced by the SCST group. It is perhaps unsurprising, but strikingly evident all the same, to note that in the matter of child labour as in virtually every other dimension of deprivation, the SCST group suffers disproportionately: for every district, and for the state as a whole,  $d'_{SCST}$  is positive, that is, the SCST group is the relatively disadvantaged group in the dichotomous classification {SCST, Others} (see Column 6 of Table 9).

[Table 9 to be inserted here]

While the SCST group is systematically the disadvantaged group, the extent of disadvantage (as measured by  $d'_{SCST}$ ) varies over a fairly wide range across the districts of the state. Only one district, Kanyakumari, has a  $d'_{SCST}$  value of less than 0.10; six districts -- North Arcot, Dharmapuri, Madras, Chengalpattu, Salem and Thanjavur -- have  $d'_{SCST}$  values lying in between 0.10 and 0.20; and five districts -- Ramanathapuram, South Arcot, Madurai, Periyar and Coimbatore have  $d'_{SCST}$  values in excess of 0.20. Among the five districts

displaying a high level of relative disadvantage for the SCST group, three -- Madurai, Periyar and Coimbatore -- are among the economically more advanced districts of the state, judged in terms of both agricultural and industrial development. But clearly, a measure of economic prosperity is fully compatible with a considerable degree of bias against historically disadvantaged groups such as the SCs and STs when it comes to distributing society's many burdens including, in particular, the burden of the phenomenon of child labour.

#### 4.5 A Consolidated Picture of Group Disparity

To obtain a more comprehensive picture of the inequitable distribution of child labour across various subgroups of the population, we proceed as follows. Given a binary classification of the population by gender ('boys' and 'girls'), by sector of origin ('rural' and 'urban'), and by caste ('Scheduled Castes and Tribes' and 'Others'), we can generate a set of eight mutually exclusive and completely exhaustive subgroups, described by:

(Rural, SCST, Boys) or (R,S,B);  
 (Urban, SCST, Boys) or (U,S,B);  
 (Rural, Others, Boys) or (R,O,B);  
 (Urban, Others, Boys) or (U,O,B);  
 (Rural, SCST, Girls) or (R,S,G);  
 (Urban, SCST, Girls) or (U,S,G);  
 (Rural, Others, Girls) or (R,O,G); and  
 (Urban, Others, Girls) or (U,O,G).

Based on 1981 Census data, Table 10 provides information on the population shares and WPRs of each of these eight subgroups; and the groups are arranged in descending order of the group-specific WPRs. The overall WPR for the state as a whole is around 0.43; at the two polar extremes, the WPRs for the (R,S,G) and (U,O,B) groups are, respectively, 0.70 and 0.24. An average figure of 43 per cent effectively hides the enormous difference between the worst-off group constituted by rural Scheduled Caste and Tribe girls, with a WPR of 70 per cent, and the best-off group constituted by urban non-SCST boys, with a WPR of 24 per cent: the WPR of the former group is nearly 3 times as large as that for the latter group!

[Table 10 to be inserted here]

From Table 10, it is possible to generate four pairs of 'gender variants', namely four pairs of groups such that the two groups in each pair differ only with respect to the gender of the child worker; in similar fashion, one can generate four pairs of 'sector-of-origin-variants'

and four pairs of 'caste-variants'. In each of the four pairs of gender-variants, namely,  $\{(R,S,G), (R,S,B)\}$ ,  $\{(U,S,G), (U,S,B)\}$ ,  $\{(R,O,G), (R,O,B)\}$  and  $\{(U,O,G), (U,O,B)\}$ , it can be easily ascertained from Table 10 that the WPR for the group containing girls exceeds the WPR for the group containing boys. Similarly, in each of the four pairs of sector-of-origin-variants, namely  $\{(R,S,G), (U,S,G)\}$ ,  $\{(R,O,G), (U,O,G)\}$ ,  $\{(R,S,B), (U,S,B)\}$  and  $\{(R,O,B), (U,O,B)\}$ , it can be verified from Table 10 that the group which includes rural children has a higher WPR than the group which includes urban children. Finally, the figures in Table 10 reveal that in each of the four pairs of caste-variants, namely,  $\{(R,S,G), (R,O,G)\}$ ,  $\{(R,S,B), (R,O,B)\}$ ,  $\{(U,S,G), (U,O,G)\}$ , and  $\{(U,S,B), (U,O,B)\}$ , the group containing SCST children has a higher WPR than the group containing non-SCST children. Briefly, holding other group characteristics constant, it is clear that girls are more disadvantaged than boys; rural children are more disadvantaged than their urban counterparts; and SCST children are more disadvantaged than non-SCST children. When, however, we do not control for confounding group characteristics, it is no longer true that, for example, groups containing girls always display a higher WPR than groups containing boys; for instance, the WPR for the group (R,O,B) , at 0.3771, is higher than the WPR for the group (U,O,G), at 0.3134: the 'sector-of-origin effect' swamps the 'gender effect'.

Finally, a simple measure of the extent of inequality in the distribution of WPRs across the subgroups of a population is the measure  $G'$ , which is an analogue of the familiar Gini coefficient of inequality so widely invoked in the literature on the measurement of income inequality. Specifically, if the population is partitioned into  $m$  ( $\geq 2$ ) mutually exclusive and completely exhaustive subgroups, and if the subgroups are indexed in non-increasing order of their WPRs (so that  $WPR_1 \geq WPR_2 \geq \dots \geq WPR_i \geq WPR_{i+1} \geq \dots \geq WPR_m$ ), then the index  $G'$  is given by:

$$(9) G' = [1/(m+1)(WPR)] \sum_{i=1}^m [(m+1-i)s_i + S_i] WPR_{i-1},$$

where WPR is the (population-weighted) average work participation rate for the population as a whole;  $s_i$  is the population share of the group with the  $i$ th largest work participation rate; and  $S_i$  is the cumulative proportion of the population belonging to groups whose work participation rates do not exceed the work participation rate of the group with the  $i$ th largest rate. Majumdar and Subramanian (1997)<sup>6</sup> have shown that if we are interested in presenting a picture of the magnitude of child labour in a society such that this quantity is an increasing function of both the average work participation rate and the extent of inequality in its distribution across

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<sup>6</sup> The authors, in the work cited, deal with any general real-valued index of deprivation, and not specifically with a headcount index of child labour.

subgroups, then a means to this end is to employ a measure of 'adjusted' work participation rate  $WPR'$ , given by:

$$(10) WPR' = WPR[1 + ((m-1)/(m+1))G'].$$

Notice that the expression for  $WPR'$  is just the average work participation rate  $WPR$  enhanced by a factor incorporating the extent of inequality ( $G'$ ) in the distribution of child labour across the subgroups into which the population has been partitioned. From the data provided in Table 10, it can be verified -- employing (9) and (10) -- that  $G'$  is of the high order of 0.3449, and that  $WPR'$  is of the order of 0.5423 (while the value of  $WPR$ , to recall, is 0.4276). In terms of the underlying 'welfare' implications, what this means is the following: an average work participation rate of 0.43 (which is the relevant figure for Tamilnadu as per Census 1981), distributed inequitably in the way it is over the eight subgroups featured in Table 10, is equivalent to the considerably higher work participation rate of 0.54 distributed equally across the subgroups. The message is simple but clear: not only is the incidence of child labour (under the 'liberal' definition) in Tamilnadu very high, but it is also very unevenly distributed across the population when the latter is classified by gender, sector of origin and caste, so that the burden of child labour falls with particularly devastating severity on certain identifiable subgroups of the society.

## 5. THE SPATIAL DISPERSION OF CHILD LABOUR

### 5.1 Orders of Magnitude

In this section, we take a look at the inter-district<sup>7</sup> variations in the incidence of child labour in Tamilnadu. The data base is the Census of 1981 -- the only source which carries information disaggregated to the level of the district. In Tables 11 and 12 we have provided information on the population share and the work participation rate -- under the 'restrictive' and the 'liberal' definitions respectively -- for each of 15 districts in the state and for the state as a whole.

[Tables 11 and 12 to be inserted here]

Let us measure the inter-district variability of work participation rates in terms of the squared coefficient of variation (given by:  $C^2 = [\sum_{i=1}^{15} s_i WPR_i^2] / [\sum_{i=1}^{15} s_i WPR_i]^2 - 1$ , where  $s_i$  is the population share and  $WPR_i$  is the work participation rate of district  $i$ ). Then, from data provided

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<sup>7</sup> The Nilgiris district -- which is a very small hill district with certain special characteristics that render it something of an outlier -- has been omitted from consideration in the analysis.

in Tables 11 and 12, it can be verified that the extent of variability in the distribution of work participation rates across the districts is greater under the 'restrictive' definition than under the 'liberal' definition:  $C^2$  is 0.1503 under the first definition, and 0.034 under the second. The average WPR for the state as a whole is, of course, much lower (at 0.0844) under the 'restrictive' definition than under the 'liberal' definition (at 0.4276).

In each of Tables 11 and 12, we have drawn a dotted line separating the districts into those in an upper panel and those in a lower panel: the districts in the upper (respectively, lower) panel have WPRs (under the relevant definitions) in excess (respectively, in deficit) of the state-level WPR. Of the fifteen districts under review, it turns out that ten are 'unambiguously' either high or low in child-labour-intensity, in the sense that each district in this group of ten belongs either to the upper panel under both definitions or to the lower panel under both definitions. Specifically, five districts -- Dharmapuri, Periyar, Salem, Madurai and North Arcot -- are 'unambiguously' high labour-intensive districts, while another set of five districts -- Tiruchirapally, Chengalpattu, Thanjavur, Kanyakumari and Madras -- are 'unambiguously' low labour-intensive districts. Interestingly, Ramanathapuram (which has attracted considerable attention in the child labour context because of the Sivakasi match-works industry) is not an unambiguously high labour-intensive district: while it figures in the upper panel of Table 11 (that is, under the 'restrictive' definition), it figures in the lower panel of Table 12 (that is, under the 'liberal' definition). More strikingly, districts such as Dharmapuri, Periyar, Salem and Madurai are scarcely prominent in discussions on the phenomenon of child labour in Tamilnadu. This underscores the reservations we have expressed earlier about an excessive concentration in public debate and discussion on some regions<sup>8</sup> to the exclusion of other regions which merit at least equal attention.

As we have observed earlier, the 'restrictive' definition of child labour is probably much too restrictive, and it may be more productive to focus attention on the 'liberal' definition. Under this less conservative approach to measuring child labour, we note from Table 12 that while some districts are obviously more intensive in child labour than others, there is scarcely a district where its incidence fails to be significant. Madras, with a 'liberal' WPR of nearly 24 per cent, scores lowest among all the districts, but in absolute terms it still reflects a worryingly high incidence of children in work. It is hard to think of a reason why the phenomenon of child labour in Tamilnadu should be viewed with anything less than the greatest concern and gravity.

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<sup>8</sup> See, for example, the Report on Survey of Child Labour in the Match Belt (Government of Tamilnadu, Department of Social Welfare: December 1994).

## 5.2 Child Labour and Other Forms of Deprivation

It is plausible to hypothesize that the phenomenon of child labour is an increasing function of generalized deprivation in respect of a set of fairly basic requirements that might be expected to contribute to the capability for achieving satisfactory human functioning -- a 'functioning' being what Amartya Sen (1985) has called 'a state of being or doing'. In particular, it is worth examining if there is any systematic relationship between the incidence of child labour and 'capability failure' in the dimensions of literacy, health, adequate shelter, mobility, and access to potable water. To test for the existence of such a relationship, we first construct what we call a generalized aggregate headcount measure of deprivation. To construct such an index, we make use of district-level data on various dimensions of basic capabilities which are available for the rural areas of the state in the Census of 1981. Specifically, we proceed as follows.

First define, for the rural areas of every district  $i$ , the following quantities:

- $N_i$  : the size of the rural population.
- $N_i^a$  : the size of the rural adult population (viz., persons of age exceeding 14).
- $N_i^1$  : the number of rural adult illiterates.
- $N_i^2$  : the number of people living in villages which have no middle or high or higher secondary school. (Note: The 1981 Census provides data on the number of villages (call it  $V_i^2$ ) without the school facilities just mentioned; if  $V_i$  is the total number of villages in district  $i$ , and  $n_i$  is the average population per village in district  $i$ , then we have taken  $N_i^2$  to be given by the quantity  $(V_i^2/V_i)n_i$ ).
- $N_i^3$  : the number of people living in villages which have neither a bus stop nor a railway station.
- $N_i^4$  : the number of people living in villages in which not even an elementary health facility, such as a Public Health Centre (PHC), is located.
- $N_i^5$  : the number of people belonging to households that reside in single-room dwellings. (Note. Data from the 1981 Census are available on the number of households (call it  $F_i$ ) in district  $i$  which reside in single-room dwellings; if  $q_i$  is the average household size in district  $i$ , then we have estimated  $N_i^5$  to be given by the quantity  $q_i F_i$ ).
- $N_i^6$  : the number of people belonging to households which do not have access to any source of drinking water within the premises. (Note. Again, 1981 Census data are available on the number of households (call it  $W_i$ ) without access to any source of drinking water within the premises; we have taken  $N_i^6$  to be given by the quantity  $q_i W_i$  where, as before,  $q_i$  is the average size of a household in district  $i$ ).

Consider the quantity  $N^0_i = \sum_{j=1}^6 N^j_i$ . It is clear that for each district  $i$ ,  $N^0_i$  represents the number of individual instances of failure (1) to achieve adult literacy; (2) to have access to any learning facility beyond elementary schooling within the village; (3) to have access to a means of transport, such as a bus or a train, passing through the village; (4) to have access to even the most basic of health facilities, such as a PHC, within the village; (5) to be able to have adequate shelter, in the form of a family dwelling unit with at least two rooms; and (6) to have command over a source of potable water within the household's premises. For any district  $i$ , complete deprivation in respect of all of these six basic dimensions of well-being would occur, clearly, if  $N^0_i$  were equal to  $N^*_i = (5N_i + N^a_i)$ . A normalized index of deprivation for each district  $i$  is then given by:

$$(11) H_i = N^0_i / N^*_i.$$

$H_i$  is what we call a generalized aggregate headcount index of deprivation<sup>9</sup> for district  $i$ . It is obvious that  $H_i$  is some incomplete measure of basic capability failure, conceptualized within the constraints of data availability and with recourse to such simplifying assumptions as have seemed to be called for: while it would be difficult to defend  $H_i$  against a charge of crudeness, we hope that it will serve, to a reasonable order of approximation, as a broad indicator of the status of generalized deprivation experienced by a district.

In Table 13 we have presented, for the rural areas of each of 14 districts<sup>10</sup> and for the state as whole, information abstracted from the 1981 Census on the 'liberal' work participation rate (WPR) and on the generalized headcount index of deprivation ( $H$ ). The districts have been arranged in descending order of each variable: the WPR and  $H$ . Before seeking the existence of a relationship between the  $\{WPR_i\}$  series and the  $\{H_i\}$  series, we make an elementary observation of some import: namely, that the magnitude of the index of generalized deprivation is, in general, disturbingly high. For rural Tamilnadu as a whole, the value of  $H$  is a high 53 per cent; only one district (Kanyakumari) has a  $H$ -value of less than 30 per cent; for three districts,  $H$  lies between 40 per cent and 50 per cent; the modal range of the  $H$ -value is between 50 per cent and 60 per cent, with as many as eight districts falling within this interval; and for two districts,  $H$  is in excess of 60 per cent. For scholars and policy-makers engaged in assessing well-being in the state, these data should be a matter of some independent interest -- and very considerable concern.

[Table 13 to be inserted here]

<sup>9</sup> The index  $H$  is similar in spirit to what the UNDP's Human Development Report 1997 calls a Human Poverty Measure.

<sup>10</sup> Madras has been excluded from consideration since it is a one-hundred per cent urban district.

One (imperfect) way of deducing a relationship between the incidence of child labour and other generalized forms of deprivation would be along the following lines. Notice that in Table 13 we have drawn a dotted line which partitions the set of districts into those in an upper panel and those in a lower panel. The districts in the upper panel of column 1 are those with a (rural) WPR in excess of the state average, while the districts in the lower panel are those with a WPR which is less than the state average. Similarly, the districts in the upper (respectively, lower) panel of column 4 are those with H-values in excess (respectively, in deficit) of the state average. Along the dimension of child labour, let us designate the set of 'upper panel districts' by  $T^U_1$ , and the set of 'lower panel districts' by  $T^L_1$ ; similarly, along the dimension of generalized deprivation, let us label the set of 'upper panel districts' (respectively, 'lower panel districts')  $T^U_2$  (respectively,  $T^L_2$ ). Now, if for any set A, #A is taken to denote the number of elements in A, then a crude index of the degree of association between the incidence of child labour WPR and the index of generalized deprivation H would be given by the index  $\pi$ , where

$$(12) \pi = [\#(T^U_1 \cap T^U_2) / \#(T^U_1 \cup T^U_2)] + [\#(T^L_1 \cap T^L_2) / \#(T^L_1 \cup T^L_2)].$$

It is clear that  $\pi$  lies between zero and unity. When  $(T^U_1 \cap T^U_2) = (T^L_1 \cap T^L_2) = \phi$ ,  $\pi=0$ ; and when  $T^U_1 = T^U_2$  and  $T^L_1 = T^L_2$ ,  $\pi=1$ . From the information provided in Table 13, it is easy to verify that  $\pi=0.5625$ <sup>11</sup>: this points to a moderately strong positive association between the incidence of child labour and that of generalized deprivation.

By way of another (still somewhat imperfect) test of association between the incidence of child labour and that of generalized deprivation, we could compute Spearman's Rank Correlation Coefficient  $\rho$  for the two sets of observations on the  $\{WPR_i\}$  and the  $\{H_i\}$  series.

From the figures reported in Table 13, it can be ascertained that the value of  $\rho$  is 0.5912 (which is statistically significant at the 5 per cent level): this again points to a moderately strong positive association between the two variables in question.

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<sup>11</sup> From Table 13, it can be seen that  $(T^U_1 \cap T^U_2) = \{\text{Dharmapuri, South Arcot, Salem, North Arcot, Pudukottai}\}$ , so  $\#(T^U_1 \cap T^U_2) = 5$ ;  $(T^U_1 \cup T^U_2) = \{\text{Dharmapuri, South Arcot, Periyar, Salem, North Arcot, Pudukottai, Madurai, Coimbatore, Dharmapuri, Pudukottai, South Arcot, Chengalpattu, North Arcot, Thanjavur, Salem, Ramanathapuram}\}$ , so  $\#(T^U_1 \cup T^U_2) = 16$ ;  $(T^L_1 \cap T^L_2) = \{\text{Tiruchirapalli, Tirunelveli, Kanyakumari}\}$ , so  $\#(T^L_1 \cap T^L_2) = 3$ ; and  $(T^L_1 \cup T^L_2) = \{\text{Chengalpattu, Tiruchirapalli, Ramanathapuram, Thanjavur, Tirunelveli, Kanyakumari, Tiruchirapalli, Madurai, Periyar, Coimbatore, Tirunelveli, Kanyakumari}\}$ , so  $\#(T^L_1 \cup T^L_2) = 12$ . Using this information in conjunction with (12) will enable the reader to confirm that  $\pi = 0.5625$ .



Neither of the indices  $\pi$  and  $\rho$  makes any essential use of information on the intensity of inter-district differences in the WPR or H. In this connection, it is best to employ the simple (product-moment) coefficient of correlation  $r$  in order to examine the nature and strength of the association between the two variables under review. It turns out that the value of  $r$  obtained from correlating the  $\{WPR_i\}$  series and the  $\{H_i\}$  series is highly positive, at 0.8138; this is statistically significant at the 1 per cent level, and lends prima facie credence to the hypothesis that, far from being randomly distributed, the phenomenon of child labour flourishes in environments characterized by a high order of generalized deprivation and capability failure.

## 6. SUMMARY AND CONCLUSIONS

This paper has been essentially in the nature of a somewhat routine -- if painstaking -- sifting of certain important sources of secondary data, performed with the objective of presenting some broad descriptive features of the phenomenon of child labour in Tamilnadu. It is not our claim that the outcome of this macro-exercise has been anything like startling or revelatory; even so, we are persuaded that there is some utility attached to presenting a systematic data-based account of the subject under review, and to supporting our findings with the confirmatory force of quantification. Certain salient features of these findings are summarized below, in the form of a series of observations.

- \* Official sources of data adopt a narrow, conservative view of child labour: in terms of this 'restrictive' definition, a child labourer is taken to be a child who is engaged in 'gainful' employment, viz. a worker who is remunerated in wages or who contributes to the production of an output that is at least partially marketed. This leaves out of the count children who are not gainfully employed, but are not in school attendance either -- children, that is, who may be engaged in unpaid domestic work or in production-related activities the output of which is not marketed. A 'liberal' definition of child labour would reckon such children also in the count of child workers, and the difference between the counts under the 'liberal' and the 'restrictive' definitions is constituted by a set of children whom we call 'invisible' workers. While the 'liberal' count -- for both conceptual reasons and ones that have to do with the data-generating process -- may overstate somewhat the true count, we believe it is safer to err on the side of caution than of complaisance. Accordingly, this paper makes an attempt to estimate the numbers of child workers in Tamilnadu under both the 'restrictive' and the 'liberal'

definitions; and insofar as the interests, claims and rights of the child are concerned, it is the latter definition which should be of prime relevance.

- \* Even under the conservative, 'restrictive' definition, the magnitude of child labour in Tamilnadu is disturbingly large: NSS data for 1987-88 suggest that nearly eleven children out of every one hundred are in the work force. The count becomes even more disturbingly large when we resort to the 'liberal' definition: going by Census 1981 (respectively, NSS 1983) figures, the number of child workers per one hundred is over forty (respectively, thirty-three).
- \* The figures reported above suggest that the very large presence of orderly, systematic child labour and child illiteracy, together with their thorough dispersal across space, has rendered the phenomenon of child labour an unremarkable, everyday occurrence: its (shocking) neglect, contrasted with the (commendable, even if oftentimes tokenistic) attention that has been paid to particular forms of child labour in particular industries (matchworks, bidi-manufacturing) , mirrors the perceptual divide that presides also over the large-scale incidence of chronic under-nutrition on the one hand, and its intensification, on the other, into starvation under conditions of famine (on which see Amartya Sen, 1981).
- \* An analysis of the occupation-wise contribution to overall child-labour intensity (under the 'restrictive' definition) suggests that the occupations significantly associated with the employment of child labour are also the occupations characterized by a relatively high order of casualization of the work force, a high level of illiteracy among workers, and depressed levels of wages and skill-formation. These occupations in the rural (respectively, urban) areas are: agricultural labour, cultivation, and livestock and allied activities (respectively, non-household manufacturing, household manufacturing, and agricultural labour). Our analysis also suggests that the participation of child workers in agriculture within a rural setting is not necessarily predominantly a matter of work within the family (with its connotation of a relatively benign working environment under parental/familial supervision): rather, much of it is in the form of waged labour.
- \* The distribution of those whom we call 'invisible' child workers according to their main activity is suggestive of a strong gender-bias (against girls) in the matter of (a) perceptions relating to age and disability as being the reasons for failing to be in

school; and (b) the allocation of onerous household duties and domestic chores between the sexes: the marginalisation of a woman's work, in more senses than one, clearly begins at an early age, and is aided both by low levels of enrolment into and high levels of dropping out of the school system.

\* In an analysis of the distribution of child labour across well-defined socio-economic groups, we find that a disproportionate burden of the overheads of child labour is borne by girls relative to boys; by children of rural origin relative to children of urban origin; and by Scheduled Caste/Scheduled Tribe (SCST) children relative to non-SCST children. It is bad enough that (under the 'liberal' definition, based on 1981 Census data) the work-participation rate of urban, non-SCST boys is of the high order of 24 per cent; but this pales into insignificance when set against the work-participation rate of rural, SCST girls which is in the region of 70 per cent! In this, as in other dimensions of deprivation in India, a concern over what is bad is swiftly deflected by a discovery of something even worse.

\* Our findings on the incidence of child labour in Tamilnadu serve to dispel certain stereotypical beliefs that seem to inform the popular imagination on the subject: that, for example, child labour is primarily an urban, not a rural phenomenon; that agriculture plays an insignificant role in child labour in the urban areas; that if there is child labour in the rural areas, it is largely confined to work within a family setting; and that urban child labour is largely a matter of waged labour.

\* When we undertake a district-wise disaggregation of the data on the incidence of child labour, we find that the latter is well-dispersed spatially: while there are, of course, inter-district variations in the incidence of child labour, there is scarcely a district where the phenomenon is insignificant in magnitude. Under the 'liberal' definition of child labour, only two districts are found to have a work participation rate (WPR) of between 20 and 30 per cent; three have a WPR of between 30 and 40 per cent; eight a WPR of between 40 and 50 per cent; and two a WPR in excess of 50 per cent. Under these circumstances, one discerns at best a weak case for the neglect -- in public debate and policy discourse on child labour -- of many regions in favour of an all-but-exclusive focus on districts such as Ramanathapuram (match-works) and North Arcot (bidi-manufacturing): the extent of this neglect becomes even more pronounced when we note that the districts which score high on child-labour intensity, under both the

'restrictive' and the 'liberal' definitions, do not include Ramanathapuram (these districts are: Dharmapuri, Salem, Periyar, Madurai and North Arcot).

- \* For the rural areas of all the districts in the state, we have computed an aggregate generalized headcount index H of deprivation which measures the proportion of individual instances of failure to have access to certain very basic capabilities to function in the dimensions of literacy, health, drinking water, mobility and shelter. It is a matter of considerable concern that the value of this index is of significant magnitude in every district, and that it stands at the high rate of about 53 per cent for the state as a whole. The 1981 Census data on district-wise (rural) WPRS and district-wise (rural) generalized headcount indices of deprivation suggest that the two variables are strongly positively correlated. Child labour clearly flourishes in an environment of general impoverishment.

Briefly, child labour in Tamilnadu is a large -- and largely neglected -- problem. It affects many sections of the population badly, and some sections very badly -- notably rural, SCST, and female populations. Occupations in which the work force is characterized by high orders of casualisation and illiteracy, and low levels of wages and skills, readily attract child labour. The concerns of society and the state are frequently limited to certain specific occupations in certain specific locations, to the neglect of other occupations and locations which merit at least equal attention. The phenomenon of child labour is a product of the failure of both positive and negative freedoms. It has thriven in an environment in which peoples' entitlements to certain very basic aspects of well-being have been as poorly secured as has their right not to be trapped in exploitative work-contracts by employers who, with impunity, have avoided or evaded the provisions of the law.

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**Table 1: The Incidence of Child Labour in Tamilnadu<sup>1</sup>: The 'Restrictive' Definition<sup>2</sup>**

Year <sup>3</sup>	Work Participation Rates of Children (Age 5-14)								
	Rural			Urban			Combined		
	Boys (2a)	Girls (2b)	All Children (2c)	Boys (3a)	Girls (3b)	All Children (3c)	Boys (4a)	Girls (4b)	All Children (4c)
1972-73	0.1710	0.1721	0.1716	0.0577	0.0375	0.0481	0.1342	0.1331	0.1337
1977-78	0.1569	0.1405	0.1486	0.0812	0.0766	0.0789	0.1332	0.1212	0.1272
1983	0.1544	0.1770	0.1656	0.0815	0.0580	0.0702	0.1291	0.1371	0.1330
1987-88	0.1061	0.1486	0.1269	0.0682	0.0668	0.0675	0.0933	0.1206	0.1067
Census 1981	0.1078	0.1041	0.1060	0.0490	0.0303	0.0398	0.0885	0.0799	0.0843

**Note :** (1) The incidence of child labour is measured in terms of the work participation rate, which is the proportion of children in the age-group 5-14 who are workers.

(2) Under the 'Restrictive' Definition, a child is reckoned to be a worker only if s/he is 'gainfully' employed.

(3) Data from 1972-73 to 1987-88 are from various rounds of the National Sample Survey, and for 1981 from the Census of India.

**Source:** (a) Selected Tables on the Survey on Employment and Unemployment : National Sample Survey (NSS) Report No.222/18 (Tamilnadu).

(b) Report on the Second Quinquennial Survey on Employment and Unemployment: NSS Report No.298/8 (July 1977-June 1978).

(c) Report on the Third Quinquennial Survey on Employment and Unemployment: NSS Report No.341/9 (January - December 1983).

(d) Key Results of Employment and Unemployment Survey : NSS 43rd Round, All-India (Part I) (July 1987 - 1988).

(e) Census of India, 1981: Social and Cultural Tables, Series-20: Tamilnadu.

Table 2 : The Occupational Profile of Child-Labour Intensity in Tamilnadu (1981)

Occupation i (1)	Sector of Origin							
	Rural				Urban			
	Number of Workers in Occupation i: $L_i$  (2a)	Number of Child Workers in Occupation i: $L_i^c$  (2b)	Child-Labour Intensity in Occupation i: $\zeta_i = L_i^c/L_i$  (2c)	Contribution of Occupation i to Overall Child- Labour Intensity: $\beta_i = (L_i^c/L^c)(\zeta_i/\zeta')$  (2d)	Number of Workers in Occupation i: $L_i$  (3a)	Number of Child Workers in Occupation i: $L_i^c$  (3b)	Child Labour Intensity in Occupation i: $\zeta_i = L_i^c/L_i$  (3c)	Contribution of Occupation i to Overall Child- Labour Intensity: $\beta_i = (L_i^c/L^c)(\zeta_i/\zeta')$  (3d)
1. Cultivators	5617694	193295	0.0344	0.1237	196924	2732	0.0139	0.0059
2. Agricultural Labour	6351535	461461	0.0727	0.6236	416463	20038	0.0481	0.1509
3. Livestock, Forestry, Fishing, Hunting and Plantations, Orchards + Allied Activities	353335	44374	0.1266	0.1053	166717	4447	0.0267	0.0186
4. Mining and Quarrying	34591	1893	0.0547	0.0019	19735	464	0.0235	0.0017
5. Manufacturing, Processing, Servicing and Repairs: Household Industry	580643	45131	0.0777	0.0653	392539	24861	0.0633	0.2465
6. Manufacturing, Processing, Servicing and Repairs: Non-Household Industry	712485	52078	0.0731	0.0708	1318629	64222	0.0487	0.4897
7. Construction	140718	4546	0.0323	0.0027	207110	4001	0.0193	0.0121
8. Trade & Commerce	537872	11572	0.0215	0.0046	1102731	20464	0.0186	0.0595
9. Transport, Storage and Communication	144313	620	0.0043	0.0001	412722	1724	0.0042	0.0011
10. Other Services	613028	7926	0.0129	0.0019	879006	8853	0.0101	0.0140
Aggregate	$L = \sum L_i =$ 15086214	$L^c = \sum L_i^c =$ 823256	$\zeta' =$ $\sum (L_i^c/L^c)(L_i^c/L_i) =$ 0.0653	1.0000	$L = \sum L_i =$ 5112576	$L^c = \sum L_i^c =$ 151806	$\zeta' =$ $\sum (L_i^c/L^c)(L_i^c/L_i) =$ 0.0421	1.0000

Notes: (1) The definition of child labour is the 'restrictive' one, under which a child is reckoned to be a worker only if s/he is 'gainfully' employed.

Source: Census of India, 1981: General Economic Tables (Tables B-18 to B-22), Series 20: Tamilnadu.

Table 3: The Incidence of Child Labour in Tamilnadu<sup>1</sup>: The 'Liberal' Definition<sup>2</sup>

Year <sup>3</sup> (1)	Work Participation Rates of Children (5-14)								
	Rural			Urban			Combined		
	Boys (2a)	Girls (2b)	All Children (2c)	Boys (3a)	Girls (3b)	All Children (3c)	Boys (4a)	Girls (4b)	All Children (4c)
1972-73	0.4745	0.6947	0.5847	0.2214	0.3130	0.2647	0.3923	0.5841	0.4885
1977-78	0.3934	0.6058	0.5011	0.2193	0.3200	0.2690	0.3388	0.5196	0.4297
1983	0.2990	0.4780	0.3879	0.1860	0.2608	0.2222	0.2598	0.4052	0.3314
1987-88 <sup>4</sup>	NA	NA	NA	NA	NA	NA	NA	NA	NA
Census 1981	0.4037	0.5885	0.4946	0.2513	0.3299	0.2899	0.3538	0.5038	0.4275

- Note :**
- (1) The incidence of child labour is measured in terms of the work participation rate, which is the proportion of children in the age-group 5-14 who are workers.
  - (2) Under the 'Liberal' Definition, a child is reckoned to be a worker if s/he is either 'gainfully' employed or neither 'gainfully' employed nor in school.
  - (3) Data from 1972-73 to 1983 are from various rounds of the National Sample Survey (NSS), and for 1981 from the Census of India.
  - (4) NSS data for 1987-88 are not available since coverage in this year is restricted to the 'economically active' population.

**Source:** Same as in Table 1, save that NSS data for 1987-88 are not available.



**Table 4: School Attendance Among Children of Different Age-groups: 1983**

Age-group (1)	Per cent of Children Attending School <sup>1&gt;</sup>			
	Rural Boys (2a)	Rural Girls (2b)	Urban Boys (2c)	Urban Girls (2d)
5 - 9	79.84	69.87	86.91	84.16
10 - 14	59.28	33.13	76.39	62.89

Note: (1) The proportion of children attending school is just one minus the work participation rate under the 'liberal' definition.

Source: Report on the Third Quinquennial Survey on Employment and Unemployment: NSS Report No.341/9 (January - December 1983).

**Table 5: The Incidence of 'Invisible' Child Labour in Tamilnadu**

Year <sup>1&gt;</sup>  (1)	The Proportion of Children who are 'Invisible' Workers <sup>2&gt;</sup>								
	Rural			Urban			Combined		
	Boys (2a)	Girls (2b)	All children (2c)	Boys (3a)	Girls (3b)	All Children (3c)	Boys (4a)	Girls (4b)	All Children (4c)
1972-73	0.3035	0.5226	0.4162	0.1637	0.2755	0.2166	0.2581	0.4510	0.3548
1977-78	0.2365	0.4653	0.3525	0.1381	0.2434	0.1879	0.2056	0.3984	0.3025
1983	0.1446	0.3010	0.2223	0.1045	0.2028	0.1510	0.1307	0.2681	0.1983
1987-88 <sup>3&gt;</sup>	NA	NA	NA	NA	NA	NA	NA	NA	NA
Census 1981	0.2959	0.4844	0.3886	0.2023	0.2996	0.2483	0.2652	0.4239	0.3432

- Note:**
- (1) Data from 1972-73 to 1983 are from various rounds of the National Sample Survey (NSS), and for 1981 from the Census of India.
  - (2) The proportion of 'invisible' workers is the difference between the work participation rates under the 'liberal' and 'restrictive' definitions, provided in Tables 3 and 1 respectively.
  - (3) NSS data for 1987-88 are not available since coverage in this year is restricted to the 'economically active' population.

**Source:** Same as in Table 3.

Table 6: The Distribution of 'Invisible' <sup>1</sup> Child Workers by their Main Activity: 1983

Activity  (1)	Per cent of 'Invisible' Child Workers							
	Rural Boys		Rural Girls		Urban Boys		Urban Girls	
	5-9 (2a)	10-14 (2b)	5-9 (2c)	10-14 (2d)	5-9 (2e)	10-14 (2f)	5-9 (2g)	10-14 (2h)
Attended Domestic Duties Only	1.34	1.29	3.88	34.35	1.37	4.04	8.15	55.32
Attended Domestic Duties and Engaged in Free Collection of Goods, and Sewing, Tailoring, Weaving, etc. for household use	0.76	1.86	5.83	23.23	0.00	0.34	0.97	9.39
Too Young to Work or Attend School	94.25	81.50	88.70	38.22	93.87	55.94	88.09	31.56
Disabled	2.44	2.58	0.55	1.04	0.00	2.01	1.81	0.59
Others	1.22	5.90	1.03	1.84	4.76	12.22	0.97	1.69
Sought Work	0.00	6.87	0.00	1.22	0.00	25.45	0.00	1.44
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Note: (1) An 'invisible' child worker is taken to be a child who is neither 'gainfully' employed nor in school attendance.

Source: Report on the Third Quinquennial Survey on Employment and Unemployment: National Sample Survey Report No. 341/9 (January - December 1983).

Table 7: Gender-Related Disparities in the Distribution of Child Labour (The 'Liberal' Definition')

Data Relating to Female Child Workers <sup>2)</sup>  (1)	Population Category														
	Rural					Urban					Combined (Rural & Urban)				
	1972-73 (2a)	1977-78 (2b)	1983 (2c)	1987-88 (2d)	1981 (2e)	1972-73 (2f)	1977-78 (2g)	1983 (2h)	1987-88 (2i)	1981 (2j)	1972-73 (2k)	1977-78 (2l)	1983 (2m)	1987-88 (2n)	1981 (2o)
1. Population Share of Girls: $s_g$	0.5142	0.5072	0.4968	0.4886	0.4917	0.4729	0.4930	0.4836	0.4935	0.4915	0.5015	0.5028	0.4923	0.4902	0.4916
2. Work Participation Rate of Girls: $WPR_g$	0.6947	0.6058	0.4780	NA	0.5885	0.3130	0.3200	0.2608	NA	0.3299	0.5841	0.5196	0.4052	NA	0.5038
3. Overall Work Participation Rate: WPR	0.5847	0.5011	0.3079	NA	0.4946	0.2647	0.2690	0.2222	NA	0.2899	0.4885	0.4297	0.3314	NA	0.4275
4. Relative Contribution of Girls to total WPR: $c_g = s_g \cdot WPR_g / WPR$	0.6109	0.6132	0.6122	NA	0.5851	0.5592	0.5865	0.5676	NA	0.5593	0.5996	0.6080	0.6019	NA	0.5773
5. Maximum Possible Value of $c_g$ : $c_g(\max) = 1$ if $s_g \geq WPR$ ; $= s_g / WPR$ if $s_g < WPR$	0.8794	1	1	NA	0.9941	1	1	1	NA	1	1	1	1	NA	1
6. Index of Relative Disadvantage for Girls: $d'_g = (c_g - s_g) / (c_g(\max) - s_g)$	0.2648	0.2151	0.2293	NA	0.1859	0.1637	0.1844	0.1627	NA	0.1333	0.1968	0.2116	0.2159	NA	0.1725

Note: (1) Under the 'Liberal' Definition, a child worker is a child who is either (a) 'gainfully' employed or (b) neither 'gainfully' employed nor in school attendance.

(2) Data relating to female child workers are abstracted from Table 3; these data have been arranged in rows 1 through 5 in such a way as to facilitate a logical derivation of the index of relative disadvantage for girls,  $d'_g$  (row 6).

Source: Same as in Table 3.

Table 8: Sector of Origin-Related Disparities in the Distribution of Child Labour (the 'Liberal' Definition')

Data Relating to Rural Child Workers <sup>2</sup>  (1)	Population Category														
	Boys					Girls					All Children (Boys & Girls)				
	1972-73 (2a)	1977-78 (2b)	1983 (2c)	1987-88 (2d)	1981 (2e)	1972-73 (2f)	1977-78 (2g)	1983 (2h)	1987-88 (2i)	1981 (2j)	1972-73 (2k)	1977-78 (2l)	1983 (2m)	1987-88 (2n)	1981 (2o)
1. Population Share of Rural Children: $s_r$	0.6752	0.6864	0.6531	0.6614	0.6723	0.7103	0.6985	0.6650	0.6775	0.6725	0.6928	0.6925	0.6590	0.6593	0.6724
2. Work Participation Rate of Rural Children: $WPR_r$	0.4745	0.3934	0.2990	NA	0.4037	0.6947	0.6058	0.4780	NA	0.5885	0.5847	0.5011	0.3879	NA	0.4946
3. Overall Work Participation Rate: $WPR$	0.3923	0.3388	0.2598	NA	0.3538	0.5841	0.5196	0.4052	NA	0.5038	0.4885	0.4297	0.3314	NA	0.4275
4. Relative Contribution of Rural Children to total WPR $c_r = s_r \cdot WPR_r / WPR$	0.8167	0.7970	0.7516	NA	0.7671	0.8448	0.8144	0.7845	NA	0.7856	0.8292	0.8289	0.7714	NA	0.7779
5. Maximum Possible Value of $c_r$ : $c_r(\max) = 1$ if $s_r \geq WPR_r$ ; $= s_r / WPR_r$ if $s_r < WPR_r$	1	1	1	NA	1	1	1	1	NA	1	1	1	1	NA	1
6. Index of Relative Disadvantage for Rural Children: $d_r = (c_r - s_r) / (c_r(\max) - s_r)$	0.4357	0.3527	0.2839	NA	0.2893	0.4643	0.3844	0.3567	NA	0.3453	0.4440	0.4436	0.3296	NA	0.3320

Note: (1) Under the "Liberal" Definition, a child worker is a child who is either (a) "gainfully" employed or (b) neither "gainfully" employed nor in school attendance.

(2) Data relating to rural child workers are abstracted from Table 3; these data have been arranged in rows 1 through 5 in such a way as to facilitate a logical derivation of the index of relative disadvantage for rural children  $d_r$  (row 6).

Source: Same as in Table 3.

Table 9: Caste-Related Disparities in the Distribution of Child Labour (The 'Liberal' Definition ' : 1981)

District <sup>a</sup> /State (1)	Data Relating to Scheduled Caste/Scheduled Tribe (SCST) Children <sup>b</sup>					
	Population Share of Scheduled Caste/Scheduled Tribe Children: $S_{SCST}$ (2a)	Work Participation Rate of SCST Children: $WPR_{SCST}$ (2b)	Overall Work Participation Rate: WPR (2c)	Relative Contribution of SCST Children to total WPR: $C_{SCST} = \frac{(S_{SCST} \cdot WPR_{SCST})}{WPR}$ (2d)	Maximum Possible Value of $C_{SCST}$ : $C_{SCST}(max) = 1$ if $S_{SCST} \geq WPR$ ; $= S_{SCST}/WPR$ if $S_{SCST} < WPR$ (2e)	Index of Relative Disadvantage of SCST Children: $d'_{SCST} = \frac{(C_{SCST} - S_{SCST})}{(C_{SCST}(max) - S_{SCST})}$ (2f)
Tamilnadu	0.1686	0.5626	0.4276	0.2218	0.3943	0.2357
Madras	0.1546	0.3675	0.2389	0.2378	0.6471	0.1689
Chengalpattu	0.2844	0.5214	0.4182	0.3546	0.6801	0.1774
North Arcot	0.2246	0.5369	0.4820	0.2502	0.4660	0.1060
South Arcot	0.2705	0.6431	0.5220	0.3332	0.5182	0.2531
Dharmapuri	0.1614	0.6615	0.6094	0.1752	0.2649	0.1333
Salem	0.2174	0.5766	0.4833	0.2594	0.4498	0.1807
Periyar	0.1936	0.7070	0.4994	0.2740	0.3877	0.4142
Coimbatore	0.1944	0.6488	0.3956	0.3188	0.4914	0.4189
Madurai	0.1593	0.6055	0.4339	0.2224	0.3671	0.3037
Thanjavur	0.2174	0.4967	0.3825	0.2811	0.5684	0.1815
Ramanathapuram	0.1747	0.5440	0.4223	0.2250	0.4137	0.2105
Kanyakumari	0.0460	0.2895	0.2455	0.0542	0.1874	0.0580

- Note: (1) Under the 'Liberal' Definition, a child worker is a child who is either (a) 'gainfully' employed or (b) neither 'gainfully' employed nor in school attendance.
- (2) Three districts - Tiruchirapalli, Pudukottai and Tirunelveli - have been omitted from consideration for want of data on the SCST population in the Census.
- (3) Data on SCST children have been arranged in columns (2a) through (2e) in such a way as to facilitate a logical derivation of the index of relative disadvantage for SCST Children,  $d'_{SCST}$  (Column (2f)).

Source: Census of India, 1981, Part IVA (vii): Social and Cultural Tables, (Table C-4 SC/ST).

**Table 10: Population shares and Work Participation Rates (WPRs) of Eight Subgroups of the Tamilnadu Population (the 'Liberal' Definition): 1981**

Group (Indexed in Descending Order of WPR) (1)	Description of Group <sup>2&gt;</sup> (2)	Population Share of Group (3)	'Liberal' WPR of group (4)
1	(R,S,G)	0.0649	0.7037
2	(R,O,G)	0.2661	0.5605
3	(R,S,B)	0.0680	0.5106
4	(U,S,G)	0.0175	0.4647
5	(R,O,B)	0.2738	0.3771
6	(U,S,B)	0.0185	0.3530
7	(U,O,G)	0.1435	0.3134
8	(U,O,B)	0.1481	0.2393

**Note:** (1) Under the 'Liberal' Definition, a child worker is a child who is either (a) 'gainfully' employed or (b) neither 'gainfully' employed nor in school attendance.

(2) 'S' stands for 'Scheduled Caste/Scheduled Tribe'; 'O' stands for 'Others'; 'R' stands for 'Rural'; 'U' stands for 'Urban'; 'G' stands for 'Girls'; and 'B' stands for 'Boys'; the 8 subgroup listed in column 2 are obtained from the cartesian product {S,O}x{R,U}x{G,B}.

**Source:** Census of India, 1981: Social and Cultural Tables.

Table 11: District-wise Incidence of Child Labour under the 'Restrictive' Definition <sup>1</sup>: 1981

District (Ranked in Descending Order of the 'Restrictive' WPR <sup>2</sup> ) (1)	Population Share of District (2)	Work Participation Rate of Children District-wise (3)
1. Periyar	0.0377	0.1414
2. Dharmapuri	0.0457	0.1401
3. Salem	0.0681	0.1302
4. Ramanathapuram	0.0698	0.1035
5. Coimbatore	0.0583	0.1023
6. Madurai	0.0959	0.0973
7. North Arcot	0.0946	0.0946
8. Tirunelveli	0.0759	0.0891
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9. Tiruchirappalli	0.0718	0.0814
10. Pudukottai	0.0252	0.0782
11. South Arcot	0.0903	0.0775
12. Chengalpattu	0.0760	0.0607
13. Thanjavur	0.0833	0.0472
14. Kanyakumari	0.0292	0.0248
15. Madras	0.0645	0.0162
Tamilnadu	1.0000	0.0844

- Note:** (1) Under the 'Restrictive' Definition, a child is reckoned to be a worker only if s/he is 'gainfully' employed.
- (2) The horizontal dotted line running across the table partitions the districts into those (in an upper panel) with WPRs in excess of the state's average WPR, and those (in a lower panel) with WPRs in deficit of the state's average WPR.

**Source:** Census of India, 1981: Social and Cultural Tables.



Table 12 : District-wise Incidence of Child Labour Under the 'Liberal' Definition" :1981

District (Ranked in Descending order of the 'Liberal' WPR) <sup>2</sup> (1)	Population Share of District (2)	Work Participation Rate of Children District-wise (3)
1. Dharmapuri	0.0457	0.6094
2. South Arcot	0.0903	0.5220
3. Periyar	0.0377	0.4994
4. Pudukottai	0.0252	0.4845
5. Salem	0.0681	0.4833
6. North Arcot	0.0946	0.4820
7. Madurai	0.0959	0.4339
8. Ramanathapuram	0.0698	0.4223
9. Chengalpattu	0.0760	0.4183
10. Tiruchirapalli	0.0718	0.4153
11. Coimbatore	0.0583	0.3956
12. Thanjavur	0.0833	0.3825
13. Tirunelveli	0.0759	0.3749
14. Kanyakumari	0.0292	0.2455
15. Madras	0.0645	0.2389
Tamilnadu	1.0000	0.4276

- Note:** (1) Under the 'Liberal' Definition, a child worker is a child who is either (a) 'gainfully' employed or (b) neither 'gainfully' employed nor in school attendance.
- (2) The horizontal dotted line running across the table partitions the districts into those (in an upper panel) with WPRs in excess of the state's average WPR, and those (in a lower panel) with WPRs in deficit of the state's average WPR.

**Source:** Census of India, 1981: Social and Cultural Tables.

**Table 13 : District Wise<sup>1)</sup> Data for Rural Tamilnadu on the Work Participation Rate (WPR) (the 'Liberal' Definition<sup>2)</sup>) and the Generalized Headcount Index of Deprivation (H)<sup>3)</sup> (1981).**

District <sup>4)</sup> (Ranked in Descending Order of the Rural WPR)	District-wise Work Participation Rates (WPR)	District <sup>5)</sup> (Ranked in Descending Order of the Generalized Headcount Index of Deprivation)	District-wise Generalized Headcount Ratios of Deprivation (H)
(1)	(2)	(3)	(4)
1. Dharmapuri	0.6325	1. Dharmapuri	0.6187
2. South Arcot	0.5663	2. Pudukottai	0.6031
3. Periyar	0.5482	3. South Arcot	0.5886
4. Salem	0.5298	4. Chengalpattu	0.5795
5. North Arcot	0.5252	5. North Arcot	0.5712
6. Pudukottai	0.5162	6. Thanjavur	0.5668
7. Madurai	0.5140	7. Salem	0.5498
8. Coimbatore	0.4991	8. Ramanathapuram	0.5314
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9. Chengalpattu	0.4959	9. Tiruchirapalli	0.5149
10. Tiruchirapalli	0.4764	10. Madurai	0.5107
11. Ramanathapuram	0.4676	11. Periyar	0.4962
12. Thanjavur	0.4153	12. Coimbatore	0.4496
13. Tirunelveli	0.4060	13. Tirunelveli	0.4062
14. Kanyakumari	0.2552	14. Kanyakumari	0.2739
Rural Tamilnadu	0.4960	Rural Tamilnadu	0.5297

- Note :**
- (1) Madras is omitted from consideration since it is a wholly urban district.
  - (2) Under the 'Liberal' Definition, a child worker is a child who is either (a) 'gainfully' employed or (b) neither 'gainfully' employed nor in school attendance.
  - (3) The 'generalized headcount index of deprivation' is a summary measure reflecting the rate of failure in achieving certain basic capabilities relating to the dimensions of literacy, health, housing, mobility and access to drinking water. The index is defined formally in Section 6.2
  - (4) The horizontal dotted line running across columns 1 and 2 partitions the districts into those (in an upper panel) with rural WPRs in excess of the state's average WPR, and those (in a lower panel) with rural WPRs in deficit of the state's average WPR.
  - (5) The horizontal dotted line running across columns 3 and 4 partitions the districts into those (in an upper panel) with rural H-values in excess of the state's average H-value, and those (in a lower panel) with rural H-values in deficit of the state's average H-value.

- Source:**
- (1) Data relating to WPR and Literacy are from: Census of India, 1981: Social and Cultural Tables.
  - (2) Data on Mobility and Health have been abstracted from: Census of India, 1981: District Census Handbook: Village & Town Directory (Series-20; Tamilnadu; Part XIII-A) for various districts.
  - (3) Information on Housing and Availability of Drinking Water is from: Census of India, 1981: Census Atlas (Series-20, Tamilnadu XII).