

Review Article

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Gender equity & human development

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The welfare of both women and men constitutes the human welfare. At the turn of the century amidst the glory of unprecedented growth in national income, India is experiencing the spread of rural distress. It is mainly due to the collapse of agricultural economy. Structural adjustments and competition from large-scale enterprises result in loss of rural livelihoods. Poor delivery of public services and safety nets, deepen the distress. The adverse impact is more on women than on men. This review examines the adverse impact of the events in terms of endowments, livelihood opportunities and nutritional outcomes on women in detail with the help of chosen indicators at two time-periods roughly representing mid nineties and early 2000. The gender equality index computed and the major indicators of welfare show that the gender gap is increasing in many aspects. All the aspects of livelihoods, such as literacy, unemployment and wages now have larger gender gaps than before. Survival indicators such as juvenile sex ratio, infant mortality, child labour have deteriorated for women, compared to men, though there has been a narrowing of gender gaps in life expectancy and literacy. The overall gender gap has widened due to larger gaps in some indicators, which are not compensated by the smaller narrowing in other indicators both in the rural and urban context.

Key words Gender equity - human welfare - indicators - unemployment - work participation

Human development index has been the first successful attempt to bring to the fore a number of other aspects of human life besides the national income (GDP or GNP, gross domestic product or gross national product) that indicates only the economic achievement of the country. The welfare of both women and men constitutes the human welfare. To understand the magnitude of deprivation of human rights and entitlements of women compared to men, it is important to look at the gender dimensions. There is a need to highlight the gender inequity in human development.

As has been observed by some researchers in the field, "Women and men share many aspects of living together, collaborate with each other in complex and ubiquitous ways, and yet end up - often enough - with

very different rewards and deprivations. From looking at the state of advantages and deprivations that women and men respectively have, there is an important need to look at the contrast between (i) the efforts and sacrifices made by each, and (ii) the rewards and benefits respectively enjoyed. This contrast is important for a better understanding of gender injustice in the contemporary world. The exacting nature of women's efforts and contributions, without commensurate rewards, is a particularly important subject,"¹. Often there is a need for looking at the measurable indicators that show the evidence of inequity so that proper policies and programmes can be devised. Realising the importance, the Human Development Report² started calculating gender related indices in recent years.

Gender equity has to be promoted in the national interest. To end the deprivation of women is not only an issue of human right but also an issue of promoting national development. It has been argued that women are agents of positive change in the socio-economic development³. Expansion of women's capabilities in terms of education, income, access to resources and participation in community and group activities has an impact not only on women's own freedom and well-being but also on the well-being of the society. Better care of children in terms of education and health, fall in infant mortality, fall in fertility rates are some of the impacts observed in various studies. Enhancing women's educational achievement, skill sets and the access to factors of production complementary to labour increase the human resource available for development.

Gender related Indices

The Human Development Report 2006² published by The United Nations Development Programme gives the gender related development index (GDI), and the gender empowerment measure (GEM) for various countries. The Human Development Report shows that developed countries such as Norway, Sweden, Finland Germany, Canada, Australia, United Kingdom and United States come in the top 10-15 ranks. India occupies the rank 96 in terms of GDI out of 159 countries. GDI and GEM essentially measure the achievements.

A recent study of the World Economic Forum titled "Global Gender Gap Report 2006"⁴ calculated the Gender Gap Index 2006 for 115 countries. India ranks 98 among these countries. India has an Index value of 0.60 as against the highest value of 0.81 for Sweden. The gender gap index unlike the gender empowerment measures (GEM) of the UNDP, measures the inequity and not the overall empowerment through participation and visibility in many fields.

The National Human development Report of India, 2001⁵, has calculated gender disparity index for India for 1981 and 1991. As per this study, the gender disparity declined and the index improved from 0.620 in 1981 to 0.676 in 1991. The major emphasis in this index has been on school attendance of children and improvements in life expectancy.

It is true that the composite indices such as these miss out on many aspects of human well-being and very broadly show the state of affairs. It is important not only to look at the position of a country in the global

context but also to record as to how the country is progressing over a period of time. However, in terms of broad indicators, such as literacy, life expectancy and work population ratios, the gender gap is seen to be declining. To capture the practical dimensions of gender gap one has to look into a number of other indicators than those used in the aggregative indices. Ideally to assess the well-being of women specific to a country one has to look at the country context and the ground realities and accordingly choose the indicators to evaluate the progress made.

There are not many studies of gender inequity in India, the reason probably being the lack of gender disaggregated data for the recent periods. Now the 55th round quinquennial National Sample Survey with a bigger sample than the annual surveys has thrown more light on the certain aspects of women's work⁶. The present study looks at the recent data and tries to examine how the changes in the economy have influenced the well-being of women in India.

The Indicators of human welfare

There is a search for gender-equity-sensitive indicators of achievements and freedoms. All the indices calculated by the Human Development Report 2006 and the Global Gender Gap Report 2006 clearly show that the gender inequity is higher in the developing countries compared to developed countries. Developed countries achieved a certain level of sensitivity and created equality of opportunity through conscious laws and social security measures for women.

The gender development index (GDI) of UNDP looks at the difference between the male and female achievements. These are life expectancy at birth, adult literacy rate, school enrolments of children in primary and secondary levels and estimated earnings adjusted for purchasing power parity. The gender empowerment measures (GEM) of UNDP includes indicators such as percentage shares of the parliamentary seats for women, percentage share of seats in the legislature and percentage of share of women in professional and technical jobs. The major indicators of human welfare used both for the gender related development index of UNDP and gender gap index of World Economic Forum are more or less the same except that the gender gap index includes labour force participation ratios, women at the ministerial level, and the sex ratio at birth. Inclusion of sex ratio at birth is a significant improvement over the other indices. The National Human Development Report of the Planning

Commission, Govt. of India uses infant mortality ratios and life expectancy at age one for male and female population, literacy rate for the population above the age of seven, intensity of formal education and worker population ratio for women. The index also gives higher weight to school attendance over adult literacy and higher weight to life expectation than infant mortality rates. The gender gap calculated by the author and given in the last section of this article in respect of the indicators chosen, show the gap as a proportion. The gender gap is expressed as the advantage of women as a proportion of men's advantage. The gap is expressed as a proportion varying between 1 and 0. One and above indicates absence of any negative gap or equality between men and women. Zero indicates highest possible negative gap indicating discrimination of women or zero equality. Higher the proportion, lower the gap. Lower the proportion, higher the gap. Improvement is obvious when the expressed proportion moves closer to one and beyond. Now let us examine how some of these indicators can capture the human deprivation or enrichment and how relevant they are in the Indian context.

Labour force participation ratio (LFPR) and work participation ratio (WPR) as an indicator of women's welfare

The labour force participation ratios and worker population ratios are in general very low in India due to high dependency of children, elderly and other members of the family who do not work. Labour force participation measures the proportion of men and women who are willing to engage themselves in the economic activities which are included in the system of national income accounting (contribute to the national Income). Labour force consists of those who are employed and those who are unemployed but looking for work. Those who are not willing to work and those who are in the educational institutions are not included in the labour force. The work participation ratio or worker population ratio shows only those who are employed as a proportion of the total population. Both these measures reflect women's participation in economic activity compared to that of men, if we get gender specific data.

Gender equity assumes greater importance in macroeconomic policies and programmes, if the link between gender equity and the economic development is established. The theories of economic development have some specific implications to increased women's

participation in the labour force. The theory of Arthur Lewis⁷ about development with unlimited supply of labour, acknowledges women's un-tapped potential labour supply for growth. In his own words, "The transfer of women's work from the household to commercial employment is one of the most notable features of economic development. It is not by all means all gain, but the gain is substantial because what women otherwise do in the household can in fact be done much better and cheaply outside, due to the scale economies and specialization and also use of capital and drudgery reducing machinery. One of the surest ways of increasing national income therefore is to create new sources of employment for women outside the home." The more recent experience of East Asian miracle also shows that rising participation rates of women contributed to the economic growth, especially the export oriented economic growth⁸. Further, the decline in fertility rates and the decline in dependency ratios were a result of women's participation in the work force. The participation of women in wage employment outside the house led to many factors that positively impacted on the economic growth of the nations. The decline in fertility rates and dependency ratios were shown as sources of huge savings and investment by households that lead to economic growth in the East Asian countries⁹.

However, typically the implication of the transfer of women's labour into non market production is not considered in the economic theory. Further in the context of India, the women's labour is transferred to family production and family enterprises. It represents a situation where women's labour contributes substantially to the GDP arising out of agriculture and household industry. Unfortunately it is not being seen as coming from women. Most of women's work in family production is unpaid. In many instances women have no control what so ever in the running of the farm or enterprise or over the income generated. In the Indian context, it has also been estimated that more than half of women's work that contributes to GDP and recognised under the international system of national accounting (SNA) is unpaid work¹⁰(Table I).

Undoubtedly, women's contribution to family production, may release the child labour to attend school and the male labour from the family business to paid employment outside the house. However, here again there can be discrimination against girl child. Girls may be kept at home either to help in household work or for looking after the siblings. Thus there is

Table I. Weekly average time spent (in h) on crop production and other SNA activities

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----------------|------------|--------------------------|---------------------|------------------|--------------------|------------------|---------------------|
| State | Crop Prod. | Non crop agri activities | All agri activities | Other activities | All SNA activities | % of unpaid work | % of female workers |
| Gujarat | 11.99 | 9.63 | 21.62 | 2.28 | 23.90 | 44.67 | 41.71 |
| Haryana | 3.14 | 18.04 | 21.18 | 2.26 | 23.49 | 85.99 | 45.52 |
| Madhya Pradesh | 13.56 | 6.51 | 20.07 | 2.55 | 22.62 | 52.40 | 43.77 |
| Meghalaya | 13.57 | 12.32 | 25.89 | 3.23 | 29.12 | 76.39 | 45.80 |
| Orissa | 6.61 | 10.15 | 16.76 | 2.27 | 19.03 | 69.44 | 35.70 |
| Tamil Nadu | 12.35 | 5.57 | 17.92 | 5.54 | 23.46 | 32.45 | 45.52 |
| Average | 10.20 | 10.37 | 20.57 | 3.02 | 23.60 | 60.22 | 43.00 |

SNA, System of National Accounting

Sources: Columns 1-6 : Ref 10; Column 7 : Ref. 25

Table II. Labour force participation rate (LFPR), worker population ratio (WPR), proportion unemployed (PU) according to usual status (ps+ss) All India

| Residence | Male | | | Female | | | Person | | |
|-----------|------|-----|----|--------|-----|----|--------|-----|----|
| | LFPR | WPR | PU | LFPR | WPR | PU | LFPR | WPR | PU |
| Rural | 555 | 546 | 9 | 333 | 327 | 6 | 446 | 439 | 7 |
| Urban | 570 | 549 | 22 | 178 | 166 | 12 | 382 | 365 | 17 |

Source: Ref. 12 (ps+ss)=Principal status + Subsidiary status (per thousand distribution of persons)

substantial positive impact of women's work participation on the economic growth of the country. However, from the women's and gender equity point of view, the human enrichment of women may or may not occur, especially when the work is unpaid work in the self employed household. It may not translate into more freedom for women and in decision making. The argument about the transfer of women's labour into the labour market to help economic growth neglects the cost of transfer of women into the labour force. Sometimes in the developing countries, the girl child in the family pays the cost in terms of foregone schooling. Often women bear the burden of additional work.

Work participation by women outside the home in very low paid unskilled jobs may not lead to economic enrichment either. However, it puts income in the hands of women. Earnings of her own and higher contribution of women to the total household income are expected to enhance the women's say in the household affairs. However, how much say, a women has in the household can vary across the households in the same region with same total income. The share of income contributed to the total income of the household is expected to determine the position of women in the households¹¹. Given this scenario, mere work participation may not give women any advantage.

Table III. LFPR, WPR according to usual status Principle and subsidiary status (per 1000 distribution of persons) - India

| Household social group | Male | | Female | | Person | |
|------------------------|------|-----|--------|-----|--------|-----|
| | LFPR | WPR | LFPR | WPR | LFPR | WPR |
| <i>Rural :</i> | | | | | | |
| Scheduled tribe | 568 | 562 | 466 | 464 | 518 | 514 |
| Scheduled caste | 554 | 545 | 338 | 333 | 448 | 441 |
| Other bakward classes | 545 | 537 | 337 | 330 | 443 | 436 |
| Others | 568 | 557 | 270 | 262 | 422 | 412 |
| All | 555 | 546 | 333 | 327 | 446 | 439 |
| <i>Urban:</i> | | | | | | |
| Scheduled tribe | 538 | 523 | 254 | 245 | 396 | 384 |
| Scheduled caste | 568 | 537 | 210 | 200 | 398 | 377 |
| Other Bakward classes | 573 | 554 | 199 | 185 | 394 | 378 |
| Others | 571 | 550 | 147 | 134 | 368 | 351 |
| All | 570 | 549 | 178 | 166 | 382 | 365 |

Source: Ref. 12

Work participation by women *per se* cannot be considered as a mark of welfare of women for several reasons. (i) Work participation probably is inversely related to the family income level. Women in the poor households work, whereas the women in the economically better off households do not work. This is clear from the urban rural work participation ratios and work participation ratios across the caste groups. More rural women in general and more women from scheduled castes and scheduled tribes (SC and ST) work than the other caste groups¹². (Tables II and III).

(ii) Women workers are mostly unpaid in the family enterprises and underpaid and exploited in wage employment. The work becomes stressful to women, when added to the usual domestic household work associated with cooking, cleaning and caring. Such work burden may have harmful externalities on the overall welfare of the women.

Nonetheless, despite all the limitations, work participation continues to be considered as an empowerment indicator as it makes women a rightful contributor to the national income and not just a receiver of welfare measures of government programmes, though its impact on the well-being of the women herself is not certain. Work participation ratios of women in India show that the women's work participation is about 43-60 per cent lower than that of men in rural India.

Both total WPR and LFPR do not distinguish between the child labour and adult labour. Hence we have separately considered the age specific work participation ratios. Work participation in the age group of 5-9 and 10-14 yr are considered separately for boys and girls. Child labour has been declining substantially but more girls in the age group of 10-14 yr are working than the boys of the same age group in the rural areas. In contrast, there are more boys than girls in the work force in urban areas in the same age group. There are more girls in the tender ages of 5-9 yr working in urban areas. Probably little girls who do not go to school go to work behind their mothers in the urban areas, probably as domestic help¹³ (Table IV).

Table IV. All India usual worker population ratio (principal & subsidiary) in the age groups of 5-9 yr and 10-14 yr (per thousand)

| | 1993-94 (NSS 50th round) | | | 2004-05 (NSS 61st Round) | | |
|---------------------------|-----------------------------|--------|------|-----------------------------|--------|------|
| | Male | Female | M/F | Male | Female | M/F |
| <i>Age group 5-9 yr</i> | | | | | | |
| Rural | 11 | 14 | | 3 | 3 | 1 |
| Urban | 5 | 5 | 1 | 2 | 3 | 0.67 |
| <i>Age group 10-14 yr</i> | | | | | | |
| Rural | 138 | 141 | 0.98 | 68 | 74 | 0.92 |
| Urban | 66 | 45 | 1.47 | 48 | 33 | 1.45 |

M/F= Male to female ratio
Sources: Ref. 13, 14

Unemployment, type of employment and wages

Unemployment: Unemployment as an indicator shows proportion of the men and women unemployed to the total number of women and men in the labour force. Those who are not available for work are excluded from this measure. The comparable data for India since 1972 show that unemployment keeps fluctuating from one year to another based on a boom or slump in the economic activity in the specific sectors. On the whole the usual status unemployment is lower, which means that very few would remain unemployed for most part of the year. Yet, when we look at a week or a day, the level of unemployment is very high. It only indicates that people keep looking for work and move in and out of the work force but they are not successful in getting work when they want.

Unemployment is an important indicator of lack of human welfare in developing countries such as India where very few would get regular income streams. Unemployment is also an indicator of poverty for the rural and urban casual workers, but is not commonly used in the human development studies. However, it assumes importance in the context of structural change that is taking place in the economy, where the unskilled and uneducated would be marginalised and only those with relevant skills are handsomely rewarded. As the economy faces competition due to opening up to the global competition, it becomes more efficient and economic growth takes place. To gain efficiency in production, workers are laid off. There is a squeeze in employment. The gainers are the modern sector workers and the skilled people and the losers are illiterate and unskilled persons in the traditional sectors. The pertinent question to be answered is who is more affected - men or women. As it turns out women are facing higher levels of unemployment especially in 2004-2005 compared to men at the turn of the century. The gender gap in unemployment has increased both in urban and rural areas. As per the National Sample surveys, the Unemployment Rate increased from 56 per thousand in 1993-94 for both men and women to 80 for men and 87 for women in 2004-2005 (Table V)¹⁴.

Type of employment: The type of employment pursued by men and women has also undergone a change over the past decade. The recent report of the National Sample survey of the 61st round provides some insights in to this aspect. As per the report among rural women self-employment increased faster than the self-employment among rural men. In 2004-2005, higher percentage of women are self-employed than men both

Table V. Unemployment rates per 1000 persons in the labour force

| NSS round (Survey period) | Male | | | Female | | |
|------------------------------|--------------|-----|-----|--------------|-----|-----|
| | us (adj.) | cws | cds | us (adj.) | cws | cds |
| <i>Rural :</i> | | | | | | |
| 61 st (2004-2005) | 16 | 38 | 80 | 18 | 42 | 87 |
| 55 th (1999-2000) | 17 | 39 | 72 | 10 | 37 | 70 |
| 50 th (1993-1994) | 14 | 31 | 56 | 9 | 29 | 56 |
| 43 rd (1987-1988) | 18 | 42 | 46 | 24 | 44 | 67 |
| 38 th (1983) | 14 | 37 | 75 | 7 | 43 | 90 |
| 32 nd (1977-1978) | 13 | 36 | 71 | 20 | 41 | 92 |
| 27 th (1972-1973) | 12 | 30 | 68 | 5 | 55 | 112 |
| <i>Urban :</i> | | | | | | |
| 61 st (2004-2005) | 38 | 52 | 75 | 69 | 90 | 116 |
| 55 th (1999-2000) | 45 | 56 | 73 | 57 | 73 | 94 |
| 50 th (1993-1994) | 41 | 52 | 67 | 61 | 79 | 104 |
| 43 rd (1987-1988) | 52 | 66 | 88 | 62 | 92 | 120 |
| 38 th (1983) | 51 | 67 | 92 | 49 | 75 | 110 |
| 32 nd (1977-1978) | 54 | 71 | 94 | 124 | 109 | 145 |
| 27 th (1972-1973) | 48 | 60 | 80 | 60 | 92 | 137 |

Source: Ref 15

in rural and urban areas. Self-employed have increased among women both in urban and rural areas. About 63.7 per cent of rural female workers and 44.8 per cent of the urban female workers are virtually unpaid workers in self-employment. Regular wage and salaried employment is much higher for men than women. There are only 3.7 per cent of female workers in regular employment in rural areas. About 35.6 per cent of the female workers in urban areas are regular employees. Over the past decade, percentage of regular employment slightly increased both for men and women in rural areas. In urban areas, regular employment shrunk for men and increased for women. Here women gained over men. Probably the reason being the lower salaries to women compared to men who are equally qualified in regular employment.

The second largest type of employment is casual work both in rural and urban areas. The percentage of rural as well as urban casual labour employment has come down both for men and women, signifying probably the shrinking opportunities for unskilled manual work. About 32.6 per cent of female workers in rural India and about 16.7 per cent of the female workers in urban India are casual labour. However, the shrinkage for men's employment is smaller than that of females. Casual employment share has declined by about 1 per cent for men and by 6 per cent for women over a decade from 1993-94 to 2003-04 in rural areas. In the urban casual worker category also the casual female workers'

share in the total workers declined by about 10 per cent while the decline is less than 2 per cent for men¹⁶. The rural distress may have made men to take up the casual labour opportunities displacing women. Thus, the category of employment available to women in rural areas is self-employment and casual labour employment (Table VI)¹⁷.

Wages: The next important issue for women is wage discrimination in casual labour employment as well as regular employment. National sample surveys also provide some insights in to the situation. As per the survey results, gender gap in earnings exists. The gender gap is highest among the illiterates. The gap declines as the education level improves up to higher secondary and diploma and a certificate course. For graduates and above, the gender gap again widens. The reason could be occasional withdrawal of women from the labour force for child bearing and child rearing and re-entering the labour force with a break. But what is interesting to note is that the gender gap in earning for regular wage and salaried workers is the lowest for the diploma and certificate holders both in rural and urban areas. Women get 86-93 per cent of the men's salaries (Tables VII &

Table VI. All India - per thousand distribution of the employed Usually employed - principal status+ subsidiary status

| | Self employed | | (F-M) gap | Regular employees | | (F-M) gap | Casual labour | | (F-M) gap |
|--------------|---------------|--------|-----------|-------------------|--------|-----------|---------------|--------|-----------|
| | Male | Female | | Male | Female | | Male | Female | |
| <i>Rural</i> | | | | | | | | | |
| 1993-1994 | 577 | 586 | 9 | 85 | 27 | -58 | 338 | 387 | 49 |
| 2004-2005 | 581 | 637 | 56 | 90 | 37 | -53 | 329 | 326 | -3 |
| <i>Urban</i> | | | | | | | | | |
| 1993-1994 | 417 | 448 | 31 | 422 | 292 | -130 | 161 | 260 | 99 |
| 2004-2005 | 448 | 477 | 29 | 406 | 356 | -50 | 146 | 167 | 21 |

Source: Ref. 17

Table VII. Average wage/salary earnings Rupees/day for regular wage and salaried employees of age 15-59 yr for different general education levels - All India

| General education level | Rural | | Urban | |
|------------------------------|--------|--------|--------|--------|
| | Male | Female | Male | Female |
| Not literate | 72.47 | 35.74 | 98.79 | 48.7 |
| Literate and up to primary | 98.59 | 47.75 | 111.44 | 64.79 |
| Secondary & higher secondary | 158.04 | 100.19 | 182.58 | 150.41 |
| Diploma/certificate | 214.38 | 200.4 | 274.87 | 237.02 |
| Graduate and above | 270.02 | 172.7 | 366.76 | 269.17 |
| All | 144.93 | 85.53 | 203.28 | 153.19 |

Source: Ref. 18

VIII)¹⁸. It shows that, for people with skills and right qualifications that the market demands, the gender difference are the lowest. In other words giving women equal opportunity with men in education, training and skills is more important to reduce the earnings gap.

The wage earnings are lower for females than males in casual employment both on public works as well as non public works, and wage gap between women and men has increased over the years. The gender gap widened for casual workers in rural areas both in public works and non-public works despite the legislations of minimum wage. Thus the women have lost out on casual labour work as well as wages (Table IX)¹⁹.

Table VIII. Average per day earnings ratio of F/M in regular employment (gender gap in earnings)

| General education level | Rural | | Urban | |
|------------------------------|-----------|--|-----------|--|
| | F/M ratio | | F/M ratio | |
| Not literate | 0.49 | | 0.49 | |
| Literate and up to primary | 0.48 | | 0.58 | |
| Secondary & higher secondary | 0.63 | | 0.82 | |
| Diploma/certificate | 0.93 | | 0.86 | |
| Graduate and above | 0.64 | | 0.73 | |
| All | 0.59 | | 0.75 | |

Source: Based on Table VII

Table IX. Average daily wages (in Rupees) for workers of age 15-59 yr

| Year | Rural casual workers engaged in Public Works | | Rural casual workers engaged in Works other than Public Works | |
|------------------------------------|--|-----------------|---|-----------------|
| | Male | Female | Male | Female |
| | 61 st Round (2004-2005) | 65.33 | 49.19 (0.75) | 55.03 |
| 55 th Round (1999-2000) | 48.14 | 38.06 (0.79) | 44.84 | 39.64 (0.88) |

Source: Ref. 19, 20

Figures in parentheses indicate female wages as a proportion of male wages

Literacy rate^{21,22}

Literacy rate differential alone is not a holistic indicator of the gender gap especially if what is measured is not functional literacy. Even when the wage gap is lower for educated than illiterate, discrimination in employment and growing unemployment of women compared to men at higher levels of literacy widen the gender gap in average earnings. Coupled with faster wage growth of men at all levels of literacy on one hand and the increased work burden of employed women on the other gender gap in welfare widens. Hence it is important to include other indicators of welfare regarding literacy across all educational groups. National sample surveys also provide us with data on literacy. Literacy gap declined over a period from 1993-1994 to 2004-2005, between males and females in all ages (Appendix 1).

It could be mostly due to the school enrolments and school attendance of girls, the gap between adult females and males is still very high, though the gap has been reducing. This clearly points to the gender discrimination in sending girls to school and retaining them in school till they become literate. The literacy gap is even higher among the various levels of educational achievements of adult population and almost double the number of males exists for the number of females who attained education levels above primary level. All the more demand driven education with modern skills probably would put girls on par with boys as seen in the reducing earning gap. It is necessary to concentrate on functional education rather than mere literacy of females.

The National sample survey data on school attendance over the past decade show an impressive reduction in gender gap both in rural and urban areas, more so in urban areas. The gap has declined from 0.79 to 0.92 in rural area and from 0.95 to 0.99 in urban

Appendix 1. Per 1000 distribution of persons of age 15 yr and above by level of education - All India

| Level of education | Rural | | | | | | Urban | | | | | |
|--------------------------------|------------------------------------|--------|------------------------------------|--------|------------------------------------|--------|------------------------------------|--------|------------------------------------|--------|------------------------------------|--------|
| | NSS 50 th Round 1993-94 | | NSS 52 nd Round 1995-96 | | NSS 61 st Round 2004-05 | | NSS 50 th Round 1993-94 | | NSS 52 nd Round 1995-96 | | NSS 61 st Round 2004-05 | |
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| Illiterates | 411 | 708 | 394 | 683 | 320 | 585 | 162 | 363 | 143 | 327 | 121 | 279 |
| Literates | 589 | 292 | 606 | 317 | 680 | 415 | 838 | 637 | 857 | 673 | 879 | 721 |
| Literate & up to primary level | 276 | 166 | 279 | 170 | 277 | 199 | 233 | 216 | 221 | 210 | 202 | 197 |
| Middle level | 154 | 73 | 168 | 87 | 191 | 113 | 184 | 143 | 206 | 171 | 194 | 168 |
| Secondary & above level | 157 | 53 | 159 | 60 | 210 | 102 | 419 | 277 | 430 | 292 | 482 | 356 |

Source: Ref. 21 & 22

areas from 1993-1994 to 2004-2005. However, data on functional literacy and the school dropout ratios are not available for the two periods of time: School attendance is also considered as an important indicator of human development.

Adult literacy as an indicator of gender gap is very important, as it has a number of advantages for the women themselves as well as the well-being of the entire population. Unlike the work participation ratios, which may not give direct benefit to women, literacy rates improve the quality of life of women. Literacy and education increases their awareness as to the opportunities and rights and freedoms. Even if literacy does not translate into higher earnings for women, it has definite advantages. Reduction in infant and child mortality and better health care and nutrition to the children are some of the well documented positive impacts. Higher education of female population is said to be responsible for better health facilities in Kerala that can be attributed to the awareness and availing of the existing facilities²³. This is one area in which steady progress has been made. However if literacy is not accompanied by the improvement in the basic government infrastructure of health, education, jobs, food and nutrition and other social benefits to the needy, and accompanied by deteriorating quality of public provisioning, it leads to frustration and misguides youth. Literacy is the very first step to human well-being but not an end in itself.

Life expectancy, infant mortality rates and sex ratio

Life expectancy and infant mortality rates are the most popular indicators of health status of the population and human development. Ultimately the aim is just not living but leading a healthy and least stressful life. Let us look at some other indicators of health to show that gender gap exists in general.

While statistics could not capture the gender gap in food intake, the gender gap in nutritional outcome such as body mass index (BMI) clearly shows that discrimination exists. The intra-household inequality in food intake both in quantity and quality is reflected in BMI and anaemia. The National Nutrition Monitoring Bureau (NNMB) data have shown that the percentage of women with low BMI (below 18.5) was higher at 38.9 per cent compared to men with low BMI at 36.6 per cent²⁴. The National Family Health Survey (NFHS-3) data, in 2005-2006, showed that in all the States, the percentage of women with low BMI were higher than men with low BMI. The NFHS data also

Table X. Rate of hospitalization/100000 during last 365 days in 2004 - All India (Persons)

| | Females | Males |
|-----------------------|---------|-------|
| Rural | 2479 | 2715 |
| Urban | 3456 | 3505 |
| Total (Rural + Urban) | 2722 | 2919 |

Source: Ref . 26

show that far higher percentage of women are anaemic than men in the age group of 15-59 yr in all the 22 States for which data are available²⁵.

The National Sample Survey (NSS) data on morbidity and hospitalization have shown that on the whole more men get hospital care than women. The gap is higher in rural areas than urban areas. The age composition of the hospitalized persons and the reasons for hospitalization data showed that in the case of women the only predominant reason for hospitalization was related to gynaecological and obstetric problems including child birth. For other types of ailments to which women are equally vulnerable, hospitalization rates were very low. Gender discrimination seems to be particularly high for the age group above 60 yr²⁶.

Given this overall background of discrimination in health care, the ultimate outcome such as Life expectancy is expected to be low. Overall, the life expectancy by it self is rather low for both for men and women in India. However, life expectancy of women is increasing compared to men. For several decades in India, the life expectancy of women was lower than that of men, though women live longer than men do in the developed countries. Women are expected to live 4 to 6 yr longer than men do in societies with little or no gender bias in health care and nutrition²⁷. In recognition of this fact the Global gender gap report of the world Economic forum, uses higher life expectancy as natural normal for women. In India, as per the data provided by the registrar General of India, since eighties, the life expectancy of women started exceeding that of men. The life expectancy in rural areas was only two years higher for women than that of men on the average. In urban India, it is about 3 yr. This has happened for two reasons. First, there is some element of better nutrition and public and private health care to all. Secondly, the average life expectancy increased as the population composition tilted towards older age groups with low birth rates and low death rates. No doubt, the gain in life expectancy particularly the reversal of trend in the average life span of women exceeding that of men is a

Table XI. Expectation of life at age 1 in yr by sex and residence-All India (1970-1975 to 1999-2003)

| Period | Mid year | Rural | | | Urban | | |
|-----------|----------|-------|------|--------|-------|------|--------|
| | | Total | Male | Female | Total | Male | Female |
| 1970-1975 | 1973 | 54.9 | 55.8 | 54.1 | 63.3 | 63.1 | 63.5 |
| 1776-1980 | 1978 | 57.4 | 57.6 | 57.3 | 64.0 | 63.4 | 64.7 |
| 1981-1985 | 1983 | 59.6 | 59.8 | 59.4 | 66.0 | 64.9 | 67.3 |
| 1986-1990 | 1988 | 61.3 | 61.4 | 61.4 | 66.3 | 65.1 | 67.6 |
| 1987-1991 | 1989 | 61.8 | 61.7 | 61.9 | 66.3 | 65.3 | 67.9 |
| 1988-1992 | 1990 | 62.1 | 61.9 | 62.0 | 66.7 | 65.5 | 68.0 |
| 1989-1993 | 1991 | 62.5 | 62.3 | 62.5 | 67.4 | 66.2 | 68.8 |
| 1990-1994 | 1992 | 63.0 | 62.7 | 63.1 | 68.0 | 66.8 | 69.3 |
| 1991-1995 | 1993 | 63.4 | 63.0 | 63.8 | 68.6 | 67.2 | 69.9 |
| 1992-1996 | 1994 | 63.9 | 63.4 | 64.4 | 68.9 | 67.5 | 70.3 |
| 1993-1997 | 1995 | 64.4 | 63.7 | 64.8 | 69.2 | 67.7 | 70.5 |
| 1994-1998 | 1996 | 64.6 | 63.8 | 65.0 | 69.2 | 67.7 | 70.6 |
| 1995-1999 | 1997 | 64.7 | 63.9 | 65.4 | 69.4 | 67.8 | 70.8 |
| 1996-2000 | 1998 | 64.8 | 63.9 | 65.5 | 69.5 | 67.9 | 70.9 |
| 1997-2001 | 1999 | 65.0 | 64.0 | 65.7 | 69.7 | 68.1 | 71.2 |
| 1998-2002 | 2000 | 65.2 | 64.2 | 65.8 | 70.0 | 68.3 | 71.2 |
| 1999-2003 | 2001 | 65.4 | 64.3 | 66.1 | 70.2 | 68.6 | 71.5 |

Source: Ref. 28

remarkable achievement. All the same, in some states such as Bihar, the female life expectancy is lower than that of men²⁸ (Table XI).

However, in the author's calculations, the life expectancy has been left without adjustment to the natural normal for women. Further, in this article, we have used the life expectancy at age one, and not at age zero, as we have considered the infant mortality rates as an important indicator.

More importantly, the composition of Indian population is slowly tilting towards the higher age groups of men and women. Once women survive beyond the critical age of maternity they live longer. It is the changing age composition of the population, with fewer births than before and longer life span that the sex ratio of the total population improved. Improving total sex ratio is deceptive and does not show any preference for females. There was no special measure taken to ensure health of women and children. The strong boy preference makes the juvenile (0-6) sex ratio adverse to girls. Thus, the next important issue is the neglect of girl child, both infants and older children in terms of nutrition and health care and preference for boys. In India, it is reaching alarming proportions in the prosperous states as per the census 2001. The juvenile sex ratio has deteriorated both in urban and rural areas. The discrimination against

females becomes obvious if we look at the 0-6 sex ratio. No doubt left to nature the sex at birth would be tilted towards boys²⁷. All the same, the actual sex ratio of children between 0-6 is far from the expected level in India as per the census 2001. It may be considered as a health indicator, as the slim chances of the girl survival make the child sex ratio lower than what is expected. The major reason for the low child sex ratio is abortion of the female foetus and discrimination against girl child that leads to higher mortality rates. Infant mortality rates are also high for girls compared to boys as per the Sample registration surveys of the Registrar general of census. Infant mortality rates are also an important indicator of gender discrimination and hence included in the Index. The infant mortality rates are still very high for rural India. Number of deaths of female infants in the age group of 0-1 are at 66.0 deaths per thousand live births in rural areas and 43.0 deaths per thousand in urban areas in 2005. The male infant deaths are lower at 62 per thousand in rural areas and 37 per thousand in urban areas in 2005²⁹.

Indicators chosen to represent the gender gap

It is true that the very basic indicators at the average level such as life expectancy and literacy of younger generation show an improvement both for males and females. However a number of other hidden inequities influence the quality of life. One can expect a gender gap to decline in respect of school attendance and life expectancy and work force participation, and yet the lives of women could be worse off than before in many other ways. Thus other indicators have been included which probe deeper and bring out the human endowments that make a difference to the lives of people such as adult illiteracy, problems of unemployment, type of employment available, wages paid, child labour and child survival and child preference that discriminates the girl child. The choice of indicators was restricted by the availability of gender disaggregated information at two time points in nineties and twenties. The aim is to observe the changes over the period to conclude whether the overall gender gap is increasing or declining. The indicators used in this study to compute the gender gap Index include (i) Workforce participation ratio and labour force participation ratios, (ii) Incidence of unemployment, (iii) type of employment held, (iv) Wage rates for casual employment, (v) Levels of literacy of adults and children, (vi) Life expectancy at age one, (vii) Infant mortality rates, and (viii) Juvenile sex ratio. These indicators are combined for sub-indices. Seven sub-indices are calculated to capture the gender gap

(i) Literacy index, with literacy rates at various educational levels and school attendance ratios, (ii) Adult illiteracy index that gives the incidence of illiteracy among adult men and women above the age of fifteen, (iii) Work participation index of all the three types of worker population ratios, (iv) Unemployment index with the three types of unemployment of usual status, weekly status and daily status, (v) Employment quality index with persons holding regular employment and wages for casual workers, (vi) Child labour index that combines the child labour in the two age groups of 5-10 and 10-14 yr, and (vii) Health index consisting of child survival and life expectancy. Child survival has two components of juvenile sex ratio and infant mortality. The final gender gap index presented in this article has been calculated for two points of time, in the nineties and twenties.

Gender equality index: Methods of computation

The gender related development is nothing but the harmonic mean of the three main indicators of life expectancy at birth, educational attainment (adult literacy rate and school enrolments of children in primary and secondary levels) and estimated earnings adjusted for purchasing power parity. Separate indices are calculated for women and men and ultimately a harmonic mean of the male and female index is taken to compute the gender related development Index. The gender Empowerment index consists of a weighted average of the equally distributed equivalent percentage of the three chosen indicators². The Global Gender Gap Report 2006 by the World Economic Forum's gender gap Index unlike the gender related development index of the UNDP, is a weighted index. The weights are determined by the standard deviation of various indicators used. The data are first converted into female to male ratios. Then the equality bench mark was set at one for all the indicators except for life expectancy which is set at 1.06 and sex ratio at birth is set at 0.944. Finally a weighted average is calculated giving weights in the proportion of the standard deviations of the series. Indicators with smaller variation are given larger weights and indicators with larger variations are given smaller weights⁴.

The National Human development report of India has calculated gender disparity Index. The final index is weighted average of the indicators life expectancy and school attendance getting higher weight than infant mortality rates and adult literacy. Due to the higher weight given to the indicators that show improvement, the overall gender disparity index show improvement.

Method of calculating the Gender gap Index

The chosen indicators on men and women are used to calculate gender gap ratios, by mostly expressing the achievement of women as a proportion of men. However in the case of some indicators such as unemployment and infant mortality that represent a higher percentage as a worse of condition, male to female ratio is calculated so that uniformly the gender gap ratios come on a scale of zero to one and any number closer to zero is lower than any number closer to one. All the indicators are thus made unidirectional.

Then the next step was to combine these indicators into six sub indicators. The urban and rural indicators were different. Wage gap could not be calculated for the urban areas due to the paucity of data. Uniform data are not available for two points of time for many other important indicators. Hence we only chose indicator, which represents the situation of nineties, pertaining to time periods between 1991- 1999. Effort has been made to get the data for mid nineties such as 1993-94 and the mid twenties such as 2004-05 for comparable data sets. Wherever it was not possible to get either, 1991 or 1999 data has been used.

Appendices 2 and 3 gives the indicators and sub indices calculated separately for urban and rural areas of the country. A simple average of the gender gap indicators is used to get the sub indices. There are 6 sub indices for urban India and seven sub- indices for rural India. Wage gap index on non public works is available at two points of time for rural areas but not available at two points of time for urban areas. The sub indices calculated and the indicators used are given in the Appendices 2 and 3. The final gender equality index is nothing but a simple average of all the gender gap indices. The final Gender Equality Index for India calculated for mid nineties and mid twenties shows a widening of the gender gap over a period both in rural and urban areas (Table XII). The rural index declined from 0.78 to 0.77 and urban gender gap index deteriorated from 0.81 to 0.76. Out of the six indices literacy and child labour are the only indices that have improved over a time. All the others have deteriorated leading to the decline in the gender equity index.

Increasing gender inequity and implications to policy

This widening gender gap in India has many policy implications. All the indicators that have been deteriorating over a period of time for several reasons need to be improved. The indicators that have

| Appendix 2. Indicators and sub-indices of gender gap index-All India - Rural | | | | | | | | |
|--|----------------------------|-------|-------|-----------|----------------------------|-------|-------|-----------|
| Indicator | NSS 50 th Round | | | Sub-index | NSS 61 st Round | | | Sub-index |
| | 1993-94 | | | | 2004-05 | | | |
| | M | F | F/M | | M | F | F/M | |
| Current school attendance/1000(5-14 yr) | 703 | 554 | 0.79 | | 835 | 767 | 0.92 | |
| Literates level of education (15 yr & above) | 589 | 292 | 0.50 | | 680 | 415 | 0.61 | |
| Illiterates level of education (15 yr & above) M/F | 411 | 708 | 0.58 | | 320 | 585 | 0.55 | |
| Literacy Sub-index - 1 | | | | 0.64 | | | | 0.76 |
| Literacy Sub-index - 2 | | | | 0.62 | | | | 0.69 |
| Unemployment rates usual (ps)M/F | 20 | 13 | 1.54 | | 21 | 31 | 0.68 | |
| Unemployment rates usual (adj.)M/F | 14 | 9 | 1.56 | | 16 | 18 | 0.89 | |
| Unemployment rates (CWS)M/F | 31 | 29 | 1.07 | | 38 | 42 | 0.90 | |
| Unemployment rates (CDS)M/F | 56 | 56 | 1.00 | | 80 | 87 | 0.92 | |
| Unemployment Sub-index | | | | 1.21 | | | | 0.90 |
| Work population ratio (usual) (ps+ss) | 553 | 328 | 0.59 | | 546 | 327 | 0.60 | |
| Work population ratio (CWS) | 531 | 267 | 0.50 | | 524 | 275 | 0.52 | |
| Work population ratio (CDS) | 504 | 219 | 0.43 | | 488 | 216 | 0.44 | |
| WPR Sub-index | | | | 0.51 | | | | 0.52 |
| LFPR usual (ps) | 549 | 237 | 0.43 | | 546 | 249 | 0.46 | |
| LFPR usual (ps+ss) | 561 | 330 | 0.59 | | 555 | 333 | 0.60 | |
| LFPR (CWS) | 547 | 276 | 0.50 | | 545 | 287 | 0.53 | |
| LFPR (CDS) | 534 | 232 | 0.43 | | 531 | 237 | 0.45 | |
| LFPR Sub-index | | | | 0.51 | | | | 0.52 |
| Child labour (5-9 yr) (p+ss) (M/F) | 11 | 14 | 0.79 | | 3 | 3 | 1.00 | |
| Child labour (10-14 yr) (p+ss) (M/F) | 138 | 141 | 0.98 | | 68 | 74 | 0.92 | |
| Child labour sub-index | | | | 0.88 | | | | 0.96 |
| Regular employment/1000 | 85 | 27 | 0.32 | | 90 | 37 | 0.41 | |
| Average daily wages (casual workers in public works) (2000) | 48.14 | 38.06 | 0.79 | | 65.33 | 49.19 | 0.75 | |
| Average daily wages (casual workers engaged in works other than public works) (2000) | 44.84 | 29.01 | 0.65 | | 55.03 | 34.94 | 0.63 | |
| Regular emp. & wages sub-index | | | | 0.48 | | | | 0.52 |
| Sex ratio (0-6 population) (1991 & 2001) | | | 0.948 | | | | 0.934 | |
| Infant mortality rate (2000 & 2005) (M/F) | 72.40 | 75.60 | 0.96 | | 62 | 66 | 0.94 | |
| (1992-96 & 1999-03) | | | | | | | | |
| Life expectancy at age one (1992-1996 & 1999-2003) | 63.40 | 64.40 | 1.02 | | 64.3 | 66.1 | 1.03 | |
| Health Sub-index | | | | 0.97 | | | | 0.97 |

Table XII. All India gender gap index - Rural and Urban

| Indicators | Rural | | Urban | |
|-----------------------------|-----------|-----------|-----------|-----------|
| | 1993-1994 | 2004-2005 | 1993-1994 | 2004-2005 |
| | Sub-index | Sub-index | Sub-index | Sub-index |
| Literacy sub-index-1 | 0.64 | 0.76 | 0.85 | 0.90 |
| Unemployment sub-index | 1.21 | 0.90 | 0.66 | 0.59 |
| Worker Population sub-index | 0.51 | 0.52 | 0.27 | 0.28 |
| Child Labour sub-index | 0.88 | 0.96 | 1.23 | 1.06 |
| Regular emp.wages sub-index | 0.60 | 0.52 | — | — |
| Health sub-index | 0.98 | 0.97 | 1.02 | 0.95 |
| Gender gap-index | 0.78 | 0.77 | 0.81 | 0.76 |

Source: Calculations are based on the data given in Appendixes 2 and 3

deteriorated over a period of the past ten years are the rising unemployment among women in the rural areas, wages infant mortality rates and gender gap in juvenile sex ratio. The reason for the overall fall in the gender equality index is that as against the indicators that have shown deterioration, the improvements have been very modest in life expectancy and work participation ratios. As far as the rural areas are concerned, the problem is unequal burden of rural distress falling on women. Urgent policy measures are needed to ensure that the wage equality and creation of livelihood opportunities for women in future are on par with men. It means that women should have access not only to food and better nutrition and health care but also to the resources complementary to labour to make self employment more remunerative to women. Another most important

Appendix 3. Indicators and sub-indices of gender gap index-All India - Urban

| Indicator | NSS 50 th Round | | | Sub-index | NSS 61 st Round | | | Sub-index |
|--|----------------------------|------|-------|-----------|----------------------------|------|-------|-----------|
| | 1993-94 | | | | 2004-05 | | | |
| | M | F | F/M | | M | F | F/M | |
| Current school attendance/1000(5-14 yr) | 845 | 800 | 0.95 | | 890 | 879 | 0.99 | |
| Literates/1000 (15 yr & above) | 838 | 637 | 0.76 | | 879 | 721 | 0.82 | |
| Illiterates/1000 (15 yr & above) M/F | 162 | 363 | 0.45 | | 121 | 279 | 0.43 | |
| Literacy Sub-index - 1 | | | | 0.85 | | | | 0.90 |
| Literacy Sub-index - 2 | | | | 0.72 | | | | 0.75 |
| Unemployment rates usual (ps) M/F | 54 | 83 | 0.65 | | 44 | 91 | 0.48 | |
| Unemployment rates usual (adj.) M/F | 41 | 61 | 0.67 | | 38 | 69 | 0.55 | |
| Unemployment rates (CWS) M/F | 52 | 79 | 0.66 | | 52 | 90 | 0.58 | |
| Unemployment rates (CDS)M/F | 67 | 104 | 0.64 | | 75 | 116 | 0.65 | |
| Unemployment Sub-index | | | | 0.66 | | | | 0.59 |
| Work population ratio (usual) (ps+ss) | 521 | 155 | 0.30 | | 549 | 166 | 0.30 | |
| Work population ratio (CWS) | 511 | 139 | 0.27 | | 537 | 152 | 0.28 | |
| Work population ratio (CDS) | 496 | 120 | 0.24 | | 519 | 133 | 0.26 | |
| WPR Sub-index | | | | 0.27 | | | | 0.28 |
| LFPR usual (ps) | 538 | 132 | 0.25 | | 566 | 148 | 0.26 | |
| LFPR usual (ps+ss) | 543 | 165 | 0.30 | | 570 | 178 | 0.31 | |
| LFPR (CWS) | 538 | 152 | 0.28 | | 566 | 168 | 0.30 | |
| LFPR (CDS) | 532 | 132 | 0.25 | | 561 | 150 | 0.27 | |
| LFPR Sub-index | | | | 0.28 | | | | 0.29 |
| Child labour (5-9 yr) (p+ss) (M/F) | 5 | 5 | 1.00 | | 2 | 3 | 0.67 | |
| Child labour (10-14 yr) (p+ss) (M/F) | 66 | 45 | 1.47 | | 48 | 33 | 1.45 | |
| Child labour sub-index | | | | 1.23 | | | | 1.06 |
| Regular employment/1000 | 422 | 292 | 0.69 | | 406 | 356 | 0.88 | |
| Sex ratio (0-6 population) (1991 & 2001) | | | 0.935 | | | | 0.903 | |
| Infant mortality rate (2000 & 2005) (M/F) | 44.7 | 42.3 | 1.06 | | 37.0 | 43.0 | 0.86 | |
| Life expectancy at age one (1992-1996 & 1999-2003) | 67.5 | 70.3 | 1.04 | | 68.6 | 71.5 | 1.04 | |
| Health Sub-index | | | | 1.01 | | | | 0.94 |

indicator is the deteriorating sex ratio which has the prosperity impact on it. The more educated and the more well off a family is the lower would be the preference for girls³⁰. This preference for boys even by the mothers is often termed as unfortunate and lack of concern for their own sex or irrational behaviour²⁷. Unless women have their own assets and earnings right into the old age and ensured of a secure life without exploitation, the bias towards a male child may continue. The bias gets considerably weakened as financial independence of women increases.

The urban indicators show more or less a similar trend. Adult literacy and child enrolments, and regular employment have shown declining gender gaps. Work participation ratio has shown a very slight improvement and life expectancy differential remained unchanged. All the other indicators of gender gap in unemployment, child labour, infant mortality, juvenile sex ratios have given an evidence of widening. Hence the overall gender equality index declined from 0.81 to 0.76. There is an

evidence of lack of employment opportunities to less qualified and women who could not get regular employment. Education and health are the key issues in urban areas. Preference for boys is much forcefully expressed in urban societies than rural societies.

It is thus quite unfortunate that the gender gap is widening in the past decade and gender discrimination against women has been increasing. Gender dimension is one of the most neglected dimensions of economic growth in the country at the turn of the century. Both structural adjustment in the economy due to reforms and withdrawal of the government from providing basic services were responsible for the widening gender gap in welfare.

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