Chapter VI

STOCK OF HUMAN CAPITAL AND ITS DISTRIBUTION BY SEX-REGION-CASTE

Introduction

The traditional theory of Human capital asserts that the investment in education is a great equalizer. One of the strong arguments for subsidization of education of the disadvantaged group is that, investment in their education by imparting skill useful in jobs will raise their capabilities or productivity and as a result their market earning power will be as high as that of the privileged group.

In a competitive market where wages are productivity based, education is bound to be an equalizer. In the human capital model these things are positively associated. Earnings differences are due to productivity differences and later are due to difference in interpersonal traits.[1] This last category of differences can be corrected by investment in human capital. In turn that will correct productivity differences and earning differences. This is how investment in education acts as an equalizer. In most of the countries of the world the basis of the subsidization of education is the human capital model explained above in brief.

6 We have made an attempt in this chapter to answer the questions raised below :

(i) How has the stock of human capital by sex region and caste tended to behave during 1950-51 to 1979-80?

(ii) Does it support the assertion of the human capital theory that investment in education is an equalizer?

The disadvantaged groups are women, rural inhabitants and SC/ST population. We shall try to find out how, over a period of time, stock of human capital has grown in these vis-a-vis advantaged groups i.e., male, urban inhabitants and non-SC/ST population.

For this analysis this chapter is divided into three Sections. / Section one examines the distribution of stock of human capital by sex, region and caste. In section second we analyse the trend in per capita real stock of human capital and section three is devoted to the conclusions.

I

Stock of Human Capital by Sex

In Table No. 6.I is given the factor cost of education incurred by male and female students. Investment in education of girls is one-half of the investment in

Table:6.I

Total Factor Cost Per Pupil Per Annum by Level of Education and Sex

(in Rs.)

Year	Elementary		Seconday		Higher	
	Male Rs.	Female Rs.	Male Rs.	Female Rs.	Male Rs.	Female Rs.
1	2	3	4	5	6	7
1950-51	1936	1020	3324	2034	9004	5044
1960-61	2468	1260	4620	2739	12516	7252
1970-71	3860	2188	8586	5040	19596	10680
1979-80	9232	5124	20412	11865	46676	25468

Note : Methodology followed is that of Table No. 5.I

Source : Derived from Appendix Table B-1, B-2 & B-3.

education of boys at all the three levels of education. The reason for such a difference in investment in education by sex is largely on account of the difference in unrecorded private cost of education. This cost for girls also is approximately one half of the cost of male students. So, it is a fact that we have been investing less in schooling of girls. This has its impact on the stock of human capital embodied in male and females students. In tables 6.II and 6.III we give information on the total stock of human capital for male/female. Of the combined stock of human capital embodied in males and females, the share of females was 11.5 per cent in 1950-51 and 12.5 per cent in 1960-61. Their corresponding share was higher at 17.5 per cent and 19.2 per cent in 1970-71 and 1979-80 respectively. The stock of human capital estimated for males gives approximately 3.5 times increase during 1950-51 to 1979-80.

As against this, the stock estimated for females gives an increase of 6.4 times. This faster growth of human capital stock embodied in females is explained largely by the observed fact that the education distance in terms of enrolment by sex has narrowed significantly during this period. The share of human capital stock embodied in females would have been much higher had we spent as much on the education of girls as we spent on boys, especially the investment undertaken by households or

Table : 6.II

Nominal Stock of Human Capital by Sex

Population (Men) (Rs. crores)

Year	Elementary			Secondary			Higher			Total stock (Rs. crores)
	Men (Million)	Average Factor Cost Rs.	Stock Rs. crores (2x3)	Men (Million)	Average Factor Cost Rs	Stock Rs. crores (5x6)	Men (Million)	Average Factor Cost Rs.	Stock Rs. crores (8x9)	(4+7+10)
1	2	3	4	5	6	7	8	9	10	11
1950-51	14.02	1936	2714 (59.0)	1.86	3324	618 (13.5)	1.4	9004	126 (27.5)	4593- (100.0)
1960-61	22.69	2468	5600 (48.4)	6.96	4620	5963 (51.6)	-	12516	-	11563+ (100.0)
1970-71	60.05	3860	23179 (54.0)	14.53	8586	12475 (30.5)	2.65	19596	5193 (12.7)	40847 (100.0)
1979-80	77.85	9232	71871 (43.8)	28.9	20412	58991 (35.9)	7.13	46676	33280 (20.3)	164142 (100.0)

+ In 1961 Census population is given by Illterate, literate elementary, Middle and matric and above .

There are no separate figures available for higher education. So in order to get the stock we have taken the average cost of secondary and higher level of education. It is multiplied with total population matric and above.

Source : Col. No. 2, 5, 8 Table 2.I
Col. No. 3, Table 6.I

Table 6.III

Nominal Stock of Human Capital by Sex and Level of Education (Population)(Women)

Year	Elementary			Secondary			Higher			Total stock (Rs.) crores (4+7+10)
	Female (Million)	Average Cost Rs.	Stock Rs. crores (2x3)	Female (Million)	Average Cost Rs.	Stock Rs. crores (5x6)	Female (Million)	Average Cost Rs.	Stock Rs. crores (8x9)	
1	2	3	4	5	6	7	8	9	10	11
1950-51	4.12	1020	420 (70.0)	0.29	2034	59 (9.8)	0.24	5044	121 (20.2)	600
1960-61	8.15	1260	1027 (61.8)	1.27	2739	634 (38.2)	-	7252	-	1661+ (100.0)
1970-71	26.69	2188	5840 (70.0)	4.03	5040	2031 (23.7)	0.65	10680	694 (8.1)	8565 (100.0)
1979-80	40.47	5124	20737 (53.3)	10.26	11865	12173 (31.3)	2.36	25468	6010 (15.4)	38920 (100.0)

+ Same as explained in Table No. 6.I

Source : Same as in Table 6.II

families. This reflects the deep rooted social bias against the education of girls. In the language of human capital theory, we may term this bias as human capital discrimination by sex. In terms of the demand for investment in human capital and the supply of funds for that investment the positions of the two curves for females will be far on the left of those of the males, suggesting proportionately less investment in the human capital of females. Probably, it is the human capital discrimination by sex or pre-labour market discrimination seems to be responsible for the earning differentials by sex.

If we take the stock of human capital embodied in females in the working force the picture is still very dismal. (See Table 6.V) The human capital stock embodied in females in the labour force accounts for only 4 per cent of the total stock of human capital in the labour force in 1960-61 and it slightly improved to 5 per cent in 1979-80. As against roughly 19 times increase in the human capital stock of males in the labour force, the increase in case of female workers works out to around 25 times during 1960-61 to 1979-80. It would be interesting to draw a comparison between the human capital stock embodied in the population on the one hand and the labour force on the other by sex. The difference between the two stocks

Table : 6.IV

Nominal Stock of Human Capital by Sex/Level and Labour Force (Men)

(Rs.crores)

Year	Elementary			Secondary			Higher			Total stock
	Men (Million)	Average Cost Rs.	Stock Rs. crores (2x3)	Men (Million)	Average Cost Rs.	Stock Rs. crores (5x6)	Men (Million)	Average Cost Rs.	Stock Rs. crores (8x9)	(4+7+10)
1	2	3	4	5	6	7	8	9	10	11
1960-61	12.96	2468	3199 (58.4)	4.64	4620	2154 (39.1)	0.11	12516	138 (2.5)	5481 (100.0)
1970-71	35.45	3860	13684 (54.2)	9.19	8586	7891 (28.8)	2.37	19596	4644 (18.0)	26219 (100.0)
1979-80	46.4	9232	42836 (39.9)	19.08	20412	38946 (36.2)	5.49	46670	25625 (23.8)	107407

Note : In 1951 census the break up by the level of education of labour force is not given.

Source : Col. No. 2, 5, 8 Table 2.IX
Col. No. 3, 6, 9 Table 6.I

Table : 6.V

Nominal Stock of Human Capital by Sex and Level of Education

Labour Force (Women)

(Rs. crores)

Year	Elementary			Secondary			Higher			Total Stock Rs. crores (4+7+10)
	Women (Million)	Average Cost Rs.	Stock Rs. crores (2x3)	Women (Million)	Average Cost Rs.	Stock Rs. crores (5x6)	Women (Million)	Average Cost Rs.	Stock Rs. crores (8x9)	
1	2	3	4	5	6	7	8	9	10	11
1960-61	0.79	1260	100 (43.9)	0.23	2739	63 (27.6)	0.09	7252	65 (29.8)	228 (100.00
1970-71	1.63	2384	389 (38.5)	0.62	5040	312 (30.9)	0.29	10680	310 (30.)	1011 (100.0)
1979-80	4.2	5124	2152 (38.2)	1.43	11865	1697 (30.1)	0.70	25468	1783 (31.7)	5632 (100.0)

Source : Same as in Table No. IV

6.5 (one for population and the other for the labour force) can be viewed as the difference in the relative participation rates by sex. In case of males the human capital stock in the labour force accounts for 2/3rds of that in the male population. Unlike this, in case of females it is slightly below 1/6th. This means that only around 16 per cent of the educated women are actively engaged in the productive activity as against 65 per cent of males. So ours is a male dominating economy. In this case the importance of female education should be judged more by their contribution not to the market production but to the non-market (i.e. household) production.

Stock of Human Capital by Region

Table No.6.VI reveals the cost incurred by students at various levels of education in rural and urban areas. At the elementary level of education in rural areas per pupil factor cost is around 2/5th of that in urban areas (Rs.4216 and Rs. 11,472 respectively). However, at the two higher levels of education the picture is quite different. Per pupil factor cost of rural areas is around 90 per cent that of urban areas, i.e., Rs. 18,348 and Rs. 19,785 for secondary level of education and Rs. 39,800 and Rs. 44,776 for higher level of education in the year 1979-80. The basic reason for this can be found in the indirect cost i.e., earnings foregone. At the elementary level of

Table : 6.VI

Total Factor Cost of Education Per Pupil per Annum
By Region and Level of Education

(in Rs.)

Year	Elementary		Secondary		Higher	
	Rural	Urban	Rural	Urban	Rural	Urban
1	2	3	4	5	6	7
1950-51	1008	2352	2844	3249	6884	8988
1960-61	1192	3024	3996	4494	9880	12820
1970-71	1992	4424	7692	8268	16424	18700
1979-80	4216	11472	18348	19785	39800	44776

Source : Derived from appendix Table Nos. C-1, C-2, & C-3.

6 education, the rural/urban difference in earnings foregone is three times in favour of urban areas. Whereas, at the two higher levels of education we have taken uniform earnings foregone by region and since earnings have grown at a faster rate than the other costs of education, the difference in cost of education per pupil in rural and urban area is not that significant. If we take away the element of earnings forgone from the total factor cost at each level of education in rural and urban areas even then, at higher levels of education the cost difference becomes significant between rural and urban areas. In urban areas the cost is 40 per cent higher than what it is in rural area.

The regional distribution of human capital stock presents more or less an expected picture. The rural/urban distribution of stock which was two times in favour of urban areas in 1960-61 was reduced to roughly 1.5 times in favour of urban areas in 1979-80. In case of labour force the difference was just 1.3 times. Thus over a period of time the distribution of the stock of human capital by region has become less skewed. This can be seen even by comparing the share of rural/urban areas in the combined human capital stock. (Refer Tables 6.II and 6.VIII).

Over time, the share of rural areas in total stock in population and labour force has increased from around

Table : 6.VII

Nominal Stock of Human Capital by Region

(Population in Rural Area)

Year	Elementary			Secondary			Higher			Total Stock Rs. crores (4+7+10)
	Population (Million)	Average Factor Cost Rs.	Stock Rs. crores (2x3)	Population (Million)	Average Factor Cost Rs.	Stock Rs. crores (5x6)	Population (Million)	Average Factor Cost Rs.	Stock Rs. crores (8x9)	
1	2	3	4	5	6	7	8	9	10	11
1950-51	-	1008	-	-	2844	-	-	6884	-	-
1960-61	18.08	1192	2155.14 (55.2)	2.52	3996	1748.38 (44.8)	-	9880	-	3904 (100.0)
1970-71	58.86	1992	11724	7.57	7692	5822.84	0.74	16424	1215.37 (6.5)	18763 (100.0)
1979-80	77.24	4216	32564.38 (43.6)	17.46	18348	32035.61 (42.9)	2.52	39800	10029.6 (13.4)	74630 (100.0)

Note : 1951 Census does not provide separate break-up of level of education for rural/urban population.

Source : Col 2,5,8 Table 2.IV
Col. 3,6,9 Table 6.VI

Table : 6.VIII

Nominal Stock of Human Capital by Region
(Population in Urban area)

Year	Elementary			Secondary			Higher			Total Stock Rs. crores (4+7+10)
	Population (Million)	Average Factor Cost Rs.	Stock Rs. crores (2x3)	Population (Million)	Average Factor Cost Rs.	Stock Rs. crores (5x6)	Population (Million)	Average Factor Cost Rs.	Stock Rs. crores (8x9)	
1	2	3	4	5	6	7	8	9	10	11
1950-51	-	2352	-	-	3249	-	-	8988	-	-
1960-61	13.0	3024	3931.2 (44.34)	5.7	4494 (55.66)	4934.49	-	12820	-	8866 (100.0)
1970-71	27.68	4424	12245.63 (46.1)	11.53	8268	9533.0 (35.9)	2.56	18700	4787.2 (18.0)	26566 (100.0)
1979-80	41.08	11472	47126.98 (38.9)	21.7	19785	42933.45 (35.4)	6.97	44776	31208.87 (25.7)	121269 (100.0)

Source : Same as in 6.VII

1/3rd to 2/5th. Thus, the compression of the distribution of human capital stock in favour of rural area is self-evident. This tendency of increasing share of rural areas in the total stock over time and the consequent narrowing of differences in the distribution of this stock by region remains even if we make an allowance for the difference in the earning foregone by region on account of variations in the House Rent Allowance (H.R.A.) and City Compensatory Allowance (C.C.A.) and other perks.

The labour force participation rates worked out on the basis of human capital stock embodied by the people in urban/rural areas show that throughout the study period the labour force participation rates of rural people has been more than 50 per cent whereas, that of urban people it has been below 50 per cent. We also observe correspondance between labour force participation rates available from censuses - there is a nominal variation of roughly 2 per cent between the two rates.[2]

It can be inferred from the comparison of participation rates by region that atleast the earning differential between rural and urban educated people over time should have slightly narrowed. If this has actually happened, then can be taken a positive contribution of human capital formation to economic growth.

Per Capita Human Capital Stock by Region

Before any firm conclusion can be drawn regarding the effect of human capital formation on economic growth it would not be out of place to analyse briefly the trend in per capita human capital stock by region.

Per capita urban human capital stock was around 11 times the per capita human capital stock stock in rural area in 1960-61. After a decade this difference came down to roughly 6 times. However during the decade of 1970's this tendency of narrowing difference in per capita stock by region has considerably slowed down and in 1979-80 this difference was 5.3 times. It is heartening to note that the difference in 1979-80 was 1/2 that of in the beginning of 1960's. Alongwith this tendency of narrowing difference in per capita human capital stock by region, the per capita net domestic product of rural/urban areas should also show a similar tendency. In fact the trend in per capita net domestic product at 1970-71 prices in rural and urban areas (agriculture-non-agriculture) between 1951-53 and 1975-83 shows that the difference in per capita Net Domestic Product of around 1½ (one and half) shot upto nearly three times.*

* Per Capita NDP at Current and Constant prices (1970-71 = 100)

Sector	1951-53	1975-83
Agriculture (Rural)	405.66	415.61
Non-Agriculture (urban)	593.13 (1.46)	1216.78 (2.93)

Source : An Ex-post Analysis of Resource Allocation to Education in India. Journal of Educational Planning and Administration - Vol 1 No.3 & 4 July-October, 1987. NIEPA. Table 3.

8a. So narrowing of real per capita human capital stock by region has not resulted in the reduction in the variation in the real per capita NDP . The reason for this opposing tendencies might be the greater difference in per capita human capital stock of 5 times between regions. The per capita human capital stock embodied in rural population is 1/5th of urban population. This probably indicates that the investment in education in rural areas has not yet reached the take-off stage or critical minimum level. This argument sounds more plausible in view of the fact that we rarely notice any variation in the labour force participation rate of educated rural and urban persons.

Since the regional difference in per capita human capital stock much exceeds that of per capita net domestic product there is a clear case for re-allocation of resources devoted to the formation of human capital in favour of rural areas. This may further accelerate the tendency of narrowing the difference both in per capita human capital stock and per capita net domestic product. It is this re-allocation of resources that will help achieve objective of regional equality.

9 If per pupil public expenditure can be taken as an indicator of the quality of education then the increased variation in per pupil public expenditure on education between rural and urban areas (the difference was 1.5 times in 1950-51, 2.1 times in 1960-61 and 1970-71 and 2.6 times in 1979-80), indicates the increased variation in the quality of education of rural and urban people. Thus, the human capital stock embodied by the rural labour force is qualitatively inferior to that embodied by urban labour force. This makes human capital stock by region hetrogeneous in nature. It is this hetrogenity of human capital stock that deserves more attention in the coming years, if the objective of regional equality is to be achieved in the real sense.

Stock of Human Capital by Caste group

In order to analyse the stock of human capital embodied in SC/ST and non-SC/ST population we must know the behaviour of cost of education in both the groups. (Table No. 6.IX) Public expenditure on education by caste will have no effect on the formation of human capital. The reason is that there would not be much variation in per pupil public expenditure. On the contrary, if at all there is any variation it will be in favour of SC/ST as this group enjoys specific subsidy against general subsidy enjoyed by all students.

Table : 6.IX

Total Factor Cost Per Pupil Per Annum by Caste Group

(Rs.)

Year	Elementary		Secondary		Higher	
	SC/ST	Non-SC/ST	SC/ST	Non-SC/ST	SC/ST	Non-SC/ST
1	2	3	4	5	6	7
1950-51	1440	1782	2754	3162	7424	8580
1960-61	1876	2257	3912	4395	10804	11924
1970-71	2748	3389	7395	8208	17328	18636
1979-80	6808	8138	18072	19515	41828	41648

Source : Derived from Appendix Table D-1, D-2, & D-3.

.10 The extent of subsidization of education of SC/ST students is so high that after meeting their expenditure on education some surplus is left.* If this is the case the variation in the stock of human capital by caste may be solely due to the variation in the non-tuition private cost of education. The difference in non-tuition private cost is more than two times at each level of education in favour of non-SC/ST students. After taking out non-tuition private cost from the total cost of schooling we hardly find any difference in per pupil cost by caste. This holds for persons with elementary education and matriculation and above. The same can be observed in another way by comparing total stock of human capital embodied in SC/ST population and non-SC/ST population. (Table 6.X) The difference in the stock is around 15 times at the elementary level before taking out the share of non-tuition cost, this reduces to 13 times once we take out the proportion of non-tuition cost. Similarly, at higher levels of education also we observe around 23 and 21 times difference before and after excluding the share of non-tuition private cost. This reflects the relative economic backwardness of SC/ST population. This compels them to spend less on such non-tuition items of educational expenditure which determines the quality of stock of human capital. Thus, quality of

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* In the year 1990-91 in the Faculty of Commerce of the M.S. University, Baroda the post-matric scholarships available to SC/ST students ranged from Rs.652 to Rs.1627/-. After meeting the tutition fees and other fees the surplus left with the student was in the range of Rs.585 to Rs.1500 per annum.

Table : 6.X

Total Stock of Human Capital by Caste and Level of Education

(Rs.crores)

Year	Elementary			Matric and Above			Total Stock crores
	Population (Million)	Average Cost	Stock Rs. crores (2x3)	Population (Million)	Average Cost	Stock Rs. crores (5x6)	(4+7)
1	2	3	4	5	6	7	8
SC/ST							
1960-61	2.26	1876	424	0.205	7358	151	575
+ 1970-71	6.36	2748	1748	0.547	12361	676	2424
+ 1979-80	8.68	6808	5909	1.22	29950	3654	9563
Non-SC/ST							
1960-61	28.59	2257	6453	8.02	8160	6544	12997
+ 1970-71	80.34	3389	27227	21.35	13422	28656	55883
+ 1979-80	109.62	8138	89209	47.65	30582	145723	234932

Source : Col. 2, 5 Table No.IX Total Population SC/ST census of India 1961 Registrar General of Census, Government of India.

Col. 3.6 Table No. 6.IX

\+ For 1971 and 1981 years the relevent break-up by caste and education is not available. So, we have taken 1961 census figures as base and derived the figure for those years.

11 stock of human capital embodied in the SC/ST population appears to be inferior to that possessed by the non-SC/ST group.

Of the total human capital stock by caste, the share of elementary level of education has substantially fallen whereas that of two higher level of education has increased. In case of SC/ST group the share of elementary level in the total stock came down to approximately 2/3rd in 1979-80 from approximately 3/4th in 1960-61. Correspondingly the share of matriculation and above went up from 1/4th to more than 2/3rd. In case of non-SC/ST population the share of elementary level in the total stock which was around 50 per cent in 1960-61 came down to 35 per cent in 1979-80. The share of higher two levels of education correspondingly show an increase from 50 per cent in 1960-61 to 62 per cent in 1979-80. The observed trend in the distribution of stock by level of education confirms our bias in the education policy towards higher levels of education. This bias is not totally unfounded in the light of the development strategy adopted in our economic planning. However, the decline in the share of elementary level in the stotal stock for both SC/ST and non-SC/ST population is not a healthy sign at a time when both illiteracy and poverty are wide spread. In the Human Development Report of the World Bank 1990,[4] it is stressed that (with accent on the removal of illiteracy and higher allocation of resources for elementary level of education) that will play a crucial role during 1990's.

6.12 At the two higher levels of education also the share of SC/ST population in the total human capital stock is just 1/2 the share of non-SC/ST population. In 1960-61, as against the former's share of 26 per cent the latter accounted for 50 per cent. In 1979-80, the corresponding proportions were 38 per cent and 62 per cent respectively. In a sense this reveals that though both groups have benefitted by the heavily subsidized higher education the non-SC/ST population has relatively benefitted more.

Much of the growth in stock of human capital by caste is on account of rapid price rise during the plan period. The growth of nominal stock of human capital of around 17 to 20 times when adjusted for the price rise gives an average of around 4 to 5 times. The growth of stock possessed by the non-SC/ST population both at current and constant prices has increased at a faster rate than that observed for SC/ST group.

II

Trend in Per Capita Real Stock of Human Capital

In Table No.6.XI we present an aggregate picture of the trend in per capita real stock of human capital by sex, region and caste.

Table : 6.XI

Per Capita Real Stock of Human Capital
By Sex-Region and Caste (1961-62 : 100)

Year	Male	Female	Rural	Urban	SC/ST	Non SC/ST
1	2	3	4	5	6	7
1960-61	511	78	108	1122	63	377
1970-71	794	179	236	1338	113	718
1979-80	1211	307	373	1952	156	1171

Source : Derived from the main Tables.

13 The behaviour of human capital stock (real terms) reveals that the variation in per capita stock by sex has narrowed in favour of females. In case of females the per capita real stock has increased by roughly 3 times during 1960-61 to 1979-80, as against an increase of around 1.4 times in case of males. As a result the sex-wise difference in per capita stock has narrowed from 6.5 times in 1960-61 to 3.9 times in 1979-80. It is interesting to note here that factor population growth has not played any role in this observed narrowing of variations in sex-wise human capital stock. The male/female population has grown by an identical rate of around 2.2 per cent during this period or the sex ratio has also not changed. It means relatively more resources have gone to education of girls. This is a favourable trend in the sense that it will help promote the non-market production. However, the 4 times difference in per capita human capital stock in favour of males indicates that the quality of stock possessed by females is much more inferior to that of males. This difference should further be narrowed at the earliest possible in view of the role of women in social and economic development of a nation.

In case of rural/urban areas also, the variation in per capita real stock of human capital has reduced from 10.4 times in 1960-61 to 5.2 times in 1979-80. As against the growth of per capita real stock of around 2.5 times

14 for rural areas, the growth of the stock for urban people works out to just 74 per cent. The observed trend can be mainly explained in terms of relative population growth of rural and urban areas. The urban population has grown much faster both during the decade of 1960's and 1970's, than the rural population. Regarding the growth of two types of stock (rural_urban), the stock embodied by rural people appears to be inferior since per capita real stock is 1/5th of urban persons. However, as observed in the case of male/female, per capita stock here also improved considerably i.e. from 1/10th in 1960-61 to 1/5th in 1979-80, yet the inference regarding quality of stock should be read with qualification. To the extent the rural youth has taken advantage of educational facility in urban areas due to migration, the quality of the stock possessed by rural youth should be as high as that of urban youth. Even then the five times variation is quite significant and be further reduced to attain the objective of equality in the economy.

In case of SC/ST and non-SC/ST population also there exist inequality in stock of human capital possessed by the two groups. In our case the per capita real stock embodied in non-SC/ST population was 6 times that possessed by SC/ST population between 1960-61 to 1970-71 at 7.5 times. The index of the growth of real capital stock shows that

15 for SC/ST population during the study period it has increased by about 1.5 times, whereas for the non-SC/ST population it has increased by more than 2 times. How do we account for this faster growth of per capita real stock of human capital and growing difference in the stock by caste? The major factor is the share of SC/ST population in the total population and the rate at which SC/ST population has increased. The share of SC/ST population in the total population increased from 20.7 per cent in 1960-61 to 21.5 per cent in 1971 and in 1981 it was 22.6 per cent.[5] This is due to the faster growth of SC/ST population than that of non-SC/ST population.

This analysis leads us to infer that to accelerate the rate of human capital formation for the depressed sections as well as to narrow the gap between SC/ST and non-SC/ST per capita stock of human capital, given the rate of population growth, more resources are to be allocated in favour of SC/ST population, which will go a long way in not only narrowing the difference but raising the quality of stock of human capital as well.

Given the resources allocated to education by sex, region and caste it is the relative rate of population growth by sex, region and caste that explains the discrimination of per capita real stock of human capital.

5.16 By sex it is the resources devoted to girl's education that explains the faster growth of per capita real stock of human capital embodied in females. By region, the narrowing of per capita stock of human capital seems to be solely on account of much slower rate of growth of rural population.

By caste it is the faster growth of SC/ST population that accounts for the wider disparity in real per capita stock of human capital. Even then the variation in real per capita stock in the range of 4 to 8 times is definitely on a higher side and calls for a large share of resources to be spent on education of weaker sections. If the observed reduction in the differentials in the real per capita human capital stock is mainly due to the trend in population growth, then to accelerate this favourable tendency a higher proportion of national income spent on education may help a great deal.

III

Conclusions

(1) The trend in the formation of human capital (i.e. educational capital) by sex during plan period in India shows that the formation of human capital was much faster (6.4 times) in case of females than in case of males (3.5 times). As a result, the share of females in the total stock of human capital has improved

5.17 from around 12 per cent in 1950-51 to 19 per cent in 1979-80. This observation supports our earlier observation regarding the narrowing educational distance between males and females in terms of educational attainment.

The quality of the stock of human capital embodied in females is comparatively low in the sense that investment in education of females is 1/2 of that in the females. The reason for such a difference in investment in education by sex is largely on account of the difference in the unrecorded private cost of education. Households spend on girls' education just ½ of what they spend on boys' education. Thus, we are investing less in the schooling of girls. This reflects the deep rooted social bias against the education of girls.

(2) The share of females in the total stock of human capital embodied in the labour force is in the range of 4 per cent to 5 per cent only. The comparison between the human capital stock embodied in population and labour force by sex shows that the human capital stock acquired by males in the labour force accounts for 2/3rd of that in the male population. In case of females on the other hand it is slightly below 1/6th. This means that only around 16 per cent of the educated women are actively engaged in the productive

activity as against 65 per cent of males. In this context importance of female education should be judged more by their contribution not to the market production but to the non-market i.e. (household) production.

(3) Over time the share of rural population and rural labour force in the total human capital stock has increased(from 2/3rd to 2/5th). As a result, rural/urban distribution of stock which was two times in favour of urban areas in 1960-61 came down to 1.5 times in 1979-80. Though, the distribution of the stockof human capital between regions seems to have improved, the quality of the stock embodied in rural population seems to be low relative to that of the urban population, as on average urban people spent - (invested) more in their education.

Unlike in the case of females, the income differences between rural/urban people might be due to the differences in the qualities of the stock and not due to the variation in the labour force participation rate. The participation rate of rural people is more than that of urban people.

(4) In case of per capita human capital stock also the difference between rural/urban population narrowed. Per capita human capital stock possessed by the urban people in 1960-61 was around 11 times the per capita

human capital stock possessed by rural people. In 1979-80 the difference came down to 5.3 times.

(5) Of the three components of costs viz., public private and earnings foregone it is the private non-tuition cost that affects the quality of the stock of human capital embodied in the SC/ST and non-SC/ST population. Public expenditure on education by caste rarely varies. In the computation of earnings foregone, we have taken the position that SC/ST and non-SC/ST persons forego the same amount of earnings. The difference in the non-tuition cost is more than two times at each level of education in favour of non-SC/ST student. The human capital stock embodied in non-SC/ST population is 15 to 20 times that of SC/ST population. Such a large difference can be accounted for by the faster growth of SC/ST population relative to non-SC/ST population. To the extent the quality of the stock is influenced by private non-tuition cost, the quality of the stock possessed by the SC/ST population is relatively inferior.

(6) Variation in real per capita human capital stock by sex, region and caste may be on account of (i) variation in the amount invested in education (cost) and (ii) the difference in the population growth. By sex it is observed that the variation in the amount of investment in education has played a major role as

both male/female population has increased at the same rate. By region on the other hand it is the faster growth of urban population that is responsible for the observed narrowing of the difference in real per capita human capital stock. To the extent, investment in education of rural people is less than that of urban people, the quality of the stock acquired by the rural people is inferior. So both, in case of females and rural persons, there is a need to allocate more resources. In case of caste on the other hand, the large variation in per capita human capital stock is mainly on account of the faster growth of SC/ST population.

In the human development strategy to be adopted, these two factors should be borne in mind to attain the objective of sex, region and caste equality.

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References

1. Belton M. Fleisher and Thomas J. Kniesner - Labour Economics, Theory, Evidence and Policy. Prentice-Hall Inco., New Jersey 1970.

2. Work Participation Rates. 1901 - 1981. Registrar General of Census, Government of India, New Delhi.

3. Monthly Abstract of Statistics. Central Statistical Organization. Government of India. 1987.

4. Human Development Report 1990. Published for United Nations Development Programme. Oxford University Press. 1990.

5. Census of India. 1971 and 1981 Registrar General of Census. Government of India, New Delhi.

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