C. B. Padmanabhan

Demographic Factors and their Implications for Indian Educational Development

ON the basis of the available 1971 census data, we shall take into account certain aspects of the demographic factors like the age structure of the population and their implications for Indian educational development. Generally, in educational planning it is usual to take into account in the first instance, the age structure of the population. Because the number of children in the educable age are the clients to whom education has to be provided, we can improve the accuracy of planning by taking into account certain other aspects relating to the age structure of the population. In India, States differ in regard to the age structure of their population. Very often Central and State Governments are faced with the problem of allocating funds for educational development either in the form of outright grants or loans. One of the criteria which can be profitably taken into account for this purpose is the age structure of the population and in particular, the size of the population in the age groups 5 to 24 and over 59. These two categories of population can be looked upon as constituting a load on working population in a country or a state which belongs to the age group 25 to 58 or whatever is the age of retirement. It is usual to call this the dependency load.

The Indian dependency load in correspondence to that in most other developing countries of Asia is in contrast with that of the developed countries. In J950, the population in Asia in the age group 5 to 24 as a percentage to total population was 44 percent, in 1970 it was estimated to be 45.3 percent and a

UNESCO document estimated that it would be 45.7 percent in 1980. For developed countries it ranges between 24 to 31 percent.

1971 census distributes the population in the age groups 0 to 14, 15 to 24 etc. We do not have break-up of the population in the age group 0 to 5. We can regard the size of the age group 0 to 24 as indicative of the burden for educational development which every state has to bear because of the necessity for giving pre-primary education for children in the age group 3 to 5. For India as a whole, the percentage of population in the age group 0 to 24 was 58.5. Table 1 gives the dependency load for each state in India. It may be noticed that it ranged between 54 and 63.7 percent.

The high level of dependency ratio has a two-fold effect on educational development. The first and the most obvious can be called the direct one. The higher the dependency percentage, the more will be the number coming forward for receiving education. Of course, there are other determining factors like the economic position of the household etc., which also influence the demand for education but potentially the number that can come forward for receiving education is obviously the number from the concerned age group.

It has also an indirect effect. It will call for more resources for purposes of consumption. The more the resources are needed for consumption which are needed for purposes of bringing up the children, providing nourishment to to them etc., the less will be available for savings. *In* the literature on economic development, it used to be thought that savings are determined by levels of per capita income. But the experience with economic development planning in the last 20 years has shown that the savings are not necessarily correlated positively with per capita income. In fact, a recent study for about 74 countries in the world has found that there is a negative correlation between the levels of per capita income and the levels of savings. It has been shown on the basis of econometric analysis that there is a missing variable which intervened between the high level of per capita income and the low level of savings namely the high level of dependency ratio resulting from high birth rate.

In fact, countries like Japan or Norway have been able to save a much higher level in spite of their relatively lower levels of per capita income when compared with other developed countries because of low birth rates. According to Sample Registration Scheme birth rate was 37 per 1000 in 1970. For the rural areas, it was 38.8 per 1000 and for urban, 29.7. In contrast the birth rate for

TABLE 1—PERCENTAGE OF 0-24 POPULATION TO TOTAL POPULATION

States	Percentage
Andhra Pradesh	56.8
Assam	62.9
Bihar	58.1
Gujarat	60.8
Haryana	63.7
Himachal Pradesh	58.3
Jammu and Kashmir	59.3
Kerala	60.5
Madhya Pradesh	58.8
Maharashtra	57.9
Manipur	60.8
Meghalaya	60.8
Mysore	59.6
Nagaland	56.8
Orissa	57.5
Punjab	60.2
Rajasthan	60.3
Tamil Nadu	55.0
Tripura	55.9
Uttar Pradesh	57.3
West Bengal	59.7
Andaman and Nicobar Islands	57.0
Arunachal Pradesh	54.0
Chandigarh	58.2
Dadra and Nagar Haveli	60.7
Delhi	59.7
Goa, Daman and Diu	56.7
Laccadive, Minicoy and Amindivi Islands	59.0
Pondicherry	56.3

advanced countries ranges between 17 and 23. Between 1961 and 1971 the birth rate has changed in such a way that the base of the Indian age pyramid has, like that of any under developed country, become wider. Table 2 shows the age structure of the population separately for males and females for 1961 and 1971.

TABLE 2—PERCENTAGE DISTRIBUTION OF POPULATION BY BROAD AGE GROUPS

Age Group	1971		1961			
			Unsmoothed		Smoothed	
	Males	Females	Males	Females	Males	Females
0–14	41.9	42.9	40.9	40.2	40.6	41.7
15–29	23.5	24.3	24.5	25.6	26.2	26.3
30–59	28.5	27.5	29.1	27.4	28.5	27.0
60+	5.9	6.0	5.5	5.8	4.7	5.0

It suggests that if the educational load arising out of an adverse age structure of the population is to be reduced, more attention should be given to birth control through family planning measures. It points also to the necessity for combining educational development with family planning, this would be to their mutual interest.

The States in India differ in regard to the levels of their per capita income. It is usually assumed that the higher the level of per capita income, the greater is the capacity of a state to finance education. But it has also to l?e pointed out that the higher is likely to be the demand for education when the level of per capita income goes up. Therefore, per capita incomes of a State have got both the effect of increasing the capacity for providing education and at the same time increasing the potential for demand for education. Of course, the demand for education as a result of increased income is likely to vary from one income group to the other. A study of the extent to which demand for education will increase as a result of increase in the level of income or the income elasticity of demand for education is essential in order to improve the accuracy of planning for education.

• A third factor which has to be taken into account in planning for future development of education is urbanisation. According to the 1971 census the

urban population was 109 million, about fifth of the total population. In 1961-1971 it grew by 38.2 percent as against the corresponding growth of 26.4 percent in 1951-1961. Thus, in the decade of the 60's the pace of urbanization has accelerated. Further, over the decade the number of towns had increased from 2461 to 2641. There have been distinct movements of population from smaller to bigger size of towns especially into the million plus cities. The population living in towns with a population of less than 10,000 measured 10 percent of the total urban population in 1961 but only 9 percent in 1971. On the other hand, class I cities, with more than 1,00,000 population each, improved these share from 48 percent to 56 percent over the decade.

A closer look at the effect of urbanisation on educational development particularly in regard to the supply of education facilities is necessary. Urbanisation is closely related to industrialization. Demand for education will go up both because of the change in the technology that is needed for industrial way of living and also because of the rise in income which industrialization creates for the people. The ease with which educational facilities can be provided in such urban areas also will increase because larger habitations will imply that educational institutions can operate on optimum size.

The important pre-requisite for this to happen, however, is a proper planning for the location of schools in urban areas. Often there is a danger of uneconomic, wasteful overlapping concentration of institutional facilities. This can be avoided by a study of the existing distribution of schools and colleges and proper planning in regard to the location of additional schools and colleges. Always it is necessary to consider the trade-off between increasing the size of existing institutions and opening new institutions. Areas which are not so densely populated are in a different situation. Institutions in such areas are not likely to grow very much in size, unless transportation facilities are provided for children who have to come from very long distances and, therefore, the per capita cost for such institutions will be high. Hence, it is necessary to take into account the density of population also in deciding upon the educational load which a particular State in India has to bear. In fact, information is available on the density of population by districts also. We have given the density of population for each State in India in Table 3.

A fourth factor which has to be taken into account in considering the educational load of a state is the sex ratio. As Table 3 shows the range of inter-

TABLE 3—DENSITY OF POPULATION PER sq km 1971 AND SEX RATIO (FEMALES PER 1000 MALES)

States	*Density of Population*	*Sex ratio*
1. Andhra Pradesh	157	977
2. Assam	150	897
3. Bihar	324	954
4. Gujarat	136	934
5. Haryana	227	867
6. Himachal Pradesh	62	958
7. *Jammu and Kashmir*	—	878
8. Kerala	549	1016
9. Madhya Pradesh	94	941
10. Maharashtra	164	930
11. Manipur	48	980
12. Meghalaya	45	942
13. Mysore	153	957
14. Nagaland	31	871
15. Orissa	141	988
16. Punjab	269	865
17. Rajasthan	75	911
18. Tamil Nadu	317	978
19. Tripura	149	943
20. Uttar Pradesh	300	879
21. West Bengal	504	891

state variation in the sex ratio (the number of females per 1000 males) **extends** from 865 to 1016. Punjab has the smallest number of 865 females per 1000 males while Kerala has the largest number of 1016 females per 1000 males.

Fifth, the economic characteristic of the population has to be **taken into** account while considering the burden for educational development. **Under** this, we can consider the participation rates in economic activities as well percentage of "workers" engaged in different economic activities. The participation rate (the percentage of persons engaged in the production of economic **wealth** and thereby enhancing the capacity to finance education) differs from **one to** another state, from one to another age group, from country to country, from males to females as well as from rural to urban areas. We have given **in Table 4**

TABLE 4—PARTICIPATION RATES BY AGE, SEX FOR RURAL AND URBAN AREAS

Age Group	*Rural India*		*Urban India*		*All India*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
All ages	53.4	13.1	48.8	6.6	52.5	11.8
0–14	7.5	2.9	2.7	0.8	6.6	2.5
15–19	62.1	18.3	33.1	5.4	55.2	15.4
20–24	86.3	20.2	67.4	9.4	81.2	17.8
25–29	95.3	21.7	90.5	11.6	94.1	19.7
30–39	97.5	23.4	95.4	13.0	97.1	21.4
40–49	97.5	24.1	95.1	14.4	97.1	22.3
50–59	95.4	20.7	87.8	12.6	94.0	19.3
60	77.4	11.3	55.3	6.4	73.7	10.4

the participation rates separately for males and females for rural as well as for urban India. For India as a whole, the male participation rate in all ages was 52.5 percent and for females 11.8 percent. In the rural areas, the male participation rate was 53.4 percent while the female was 13.1 percent. It may be that even at the ages at which children have to go to school, there are high noticed participation ratios in rural areas, this shows that there are foregone earnings which parents of rural children have to take into account when they decide to send their children to schools and colleges.

The Census of India has classified the population into workers, non-workers with secondary activity, other non-workers which will include students, household workers, beggars, etc. and non-workers in the real sense of the term, i.e. those who cannot contribute to the production of economic wealth. The higher the percentage of the last category of non-workers (that is, those who really do not participate in any economic activity), the higher is the burden of financing educational development. We have given in Table 5 the workers, non-workers

TABLE 5—WORKERS, NON-WORKERS WITH SECONDARY ACTIVITY, AND OTHER NON-WORKERS (STUDENTS, HOUSEHOLD WORKERS ETC.)

States	*Workers*	*Non-workers*
1. Andhra Pradesh	43.36	56.64
2. Assam	29.92	70.08
3. Bihar	31.71	68.29
4. Gujarat	32.57	67.43
5. Haryana	27.13	72.87
6. Himachal Pradesh	37.50	62.50
7. Jammu and Kashmir	30.64	68.36
8. Kerala	31.12	68.88
9. Madhya Pradesh	38.52	61.48
10. Maharashtra	38.90	61.10
11. Mysore	35.81	64.19
12. Nagaland	52.23	47.77
13. Orissa	33.45	66.55
14. Punjab	29.18	70.82
15. Rajasthan	32.67	67.33
16. Tamil Nadu	38.11	61.89
17. Uttar Pradesh	32.58	67.42
18. West Bengal	29.39	70.61
19. andigarh	34.06	65.94
20. Delhi	31.20	68.80
21. Manipur	36.60	63.40
22. Pondicherry	31.51	68.49
23. Tripura	28.43	71.57
All India	34.59	65.41

with secondary activity and other non-workers together for every State in India and also the non-workers in the real sense of the term. It may be noticed that for all India, people who cannot do any work constitute 65.41 percent, while for individual States the proportion ranges from 47.77 percent to 72.87 percent.

Lastly, we have to take into account the percentage of workers engaged in different sectors of economic activities. Individual States differ in regard to the pattern of their economic activity. Rural and urban areas also differ in this regard. We have given in Table 6 the percentage of workers engaged in

TABLE 6—PERCENTAGE OF WORKERS ENGAGED IN DIFFERENT ACTIVITIES, 1971 CENSUS

	Rural		*Urban*		*All India*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
1. Cultivators	56	33	5.2	4.2	46.2	29.6
2. Agricultural labourers	25.3	54.3	4.7	17.5	21.3	50.5
3. Livestock etc.	2.5	2.5	1.5	2	2.3	2.5
4. Mining	.4	.3	1	1	.5	.4
5. Manufacturing household	3.1	3.5	4.4	10	3.4	4.2
6. Manufacturing other than household	2.5	1.5	24	12.9	6.6	2.8
7. Construction	.8	.4	3.5	2.9	1.3	.6
8. Trade and Commerce	2.8	1	21.5	8.2	6.4	1.8
9. Transport storage	.9	.1	10.8	3.2	2.9	.5
10. Other services	5.7	3.4	23.4	38.1	9.1	7.1

different activities separately for males and females as well as for rural and urban areas. It may be noticed that manufacturing sector, an economically advanced sector, claims in urban areas, 24 percent of the male workers and nearly 13 percent of the female workers. Next to manufacturing in the scale of pro-

ductivity are the sectors of trade and commerce, and other services which claim respectively 21.5 percent and 23.4 percent of the male workers in urban areas. It is also notable that in urban areas 38.1 percent of the female workers are engaged in other services. Of course, agriculture constitutes the largest single source of work, in the rural sector and in the country as a whole. One can say that the higher the percentage of workers engaged in agriculture in a certain state or sector, generally, the lower will be the capacity to finance education. In order to improve the accuracy of planning for educational development in India, it is necessary to take into account all the demographic factors cited above.