Chapter 8
Summary and Policy Implications

8. Introduction

The world has now entered the age of the knowledge economy, where human capital plays a critical role in driving economic growth. Reviewing the literature on inter and intra country analysis pertaining to the growth theory, it is mostly found that human capital led growth model is more effective than physical capital led model. In the stages of growth and development, investment in physical capital is important at early stages of industrialization, but the role of human capital increases with industrial development and in due course grows in relative importance. This is not only true for the world's most advanced economies, but also in those emerging economies that are currently practicing reflective transformations and periods of rapid growth and development. India is a unique example of such an economy. Moreover, India is the second largest populous country in the world sharing more than 17% of world's total population. Considering this quantitative importance of population, it is imperative to examine the qualitative enhancement of the population in India in respect of educational achievement. It is by qualitative transformation that the country can globally become a decisive factor.

In the post-globalisation period several policies and measures have been undertaken both at international and national platform. At international level the World Declaration on Education for All (EFA) was adopted at the World Conference on Education For All held in Jomtien, Thailand in 1990 and at Dakar, Senegal in 2000, both sponsored by several UN agencies. The "Education For All" movement gained particular prominence in the same year when world leaders, on behalf of nearly every country, unanimously adopted the Millennium Development Goals in 2000. Almost all the goals were targeted to be achieved within 2015 and hence mid-term review of progress is being carried out at country level by different organization and agencies.

At the dawn of Indian planning regime (1950), Constitutional commitment was made to ensure the education of the children belonging to the age group of 5-14 years within 10 years. Having failed to achieve the goal of education for the children even after 50 years of Independence, the Indian government again has expressed a strong commitment towards education for all during the post globalization era. The Constitution of India was amended at the beginning of the Tenth Plan period (2002-2007) to make education a Fundamental Right of the child between the ages of 6-14 years (The 86th Constitutional Amendment Act 2002).

In very broad terms the following dimensions with regard to the child education have been identified as crucial under the 11th Plan:

Universal enrolment of 6–14 age group children and focus on disadvantaged and educationally backward areas and social groups that are lagging behind

Dropout at primary level to be eliminated and the dropout rate at the elementary level to be reduced from over 50% to 20% by 2011–12.

With such an international and national background, the present research has been undertaken with a view to make an assessment of progress of India's educational development with special reference to literacy development and achievement of elementary education. In particular, the study is carried out primarily to identify and measure the nature and extent of educational backwardness in India at a disaggregated level. In doing so, it also examines the necessity of formulating area-based micro planning instead of universal common policy measures in order to get rid of the lingering shame of being one of the poorest performers among the developing nations in promoting elementary education in the country. For this, a historical background of educational development in India has thoroughly been examined to bring to light the trend of development between the periods 1950-51 and 2000-2001. In order to comprehend the educational variation within the region of the country, a state level analysis of educational development is briefly discussed. From the review and analysis of the state level literacy trend and educational

development, West Bengal has been found as one of the educationally backward states in India. Again, in order to identify the educationally deprived area of West Bengal, an inter-district analysis has been carried out along with its extension to sub-district level (block level). This analysis again categorically locates the regional development pattern within the state and identified the regions at the most disadvantaged position. Among the 18 districts of the state, Uttar Dinajpur has been identified as the most backward district in respect of literacy development and achievement in elementary schooling. Accordingly, a detailed analysis of the educational pattern (both enabling attributes and achievement attributes) is carried out at sub-district and Mouza level. Here an attempt has also been worked out to identify the factors held responsible for such an abysmal educational performance of the district. Finally, a supportive micro level study is carried out in four villages of the district with a view to identify the major factors for educational backwardness of the study area. Two specific statistical techniques have been applied for the analysis of data at micro level study and have been detailed out for understanding how far the specific methodology is useful for the selected study. A comparison of micro level findings with those of the macro level study is also judged for better understanding of the problem of educational backwardness in the state in particular and in the country in general.

The major findings of the research at various disaggregated level are summarized below.

8.1 Summary Findings

Chapter 1, provides an introduction to the study, describing the relevance and significance of the research, research questions that have been addressed, overview of methods, and a brief review of available literature.

Chapter-2, while elaborating on the history of elementary education in pre and post independent era, a trend analysis of public finances to the education sector with special reference to the elementary education in India during the post planning regime (1950-51 onwards) has been laid out. Further, literacy development in India during the period 1950-51 to 2000-01 and development trend of elementary schooling in India within reference period of time as 1950-51 onwards, have raised the following critical issues among others.

It is observed from the history of development of education that universalisation of primary education was advocated even under British rule and a constitutional commitment was also made in free India. But the very basic need of the children regarding their education has still remained illusive and as a distant goal. It also appears that time and again it was decided to achieve the goal from the end of government. But whatever time limit has been targeted has proved itself to be unrealistic. Even the target year of 2010 of Sarba Siksha Abhijan by which it is being tried to universalise eight years of schooling does not appear to be a realistic one. One thus has to look forward to the international target year of 2015 for the goal fulfilment.

Financial assistance to education was a subject of neglect of both the British and post independent national government and still the view has not changed much meriting a detailed outlining. Per capita spending on education in India is significantly low even when it is compared with the less developed countries like Bangladesh, Korea, Thailand and Sri Lanka. Actually India is spending what is only half of what is required for UEE.

During the entire post-independence period, government expenditure on education has been remaining well below the Kothari Commission recommendation of 6% of GDP, thereby witnessing the government's apathy to reach the goal of UEE.

In India, primary responsibility of school education lies with the state governments but being a subject in the concurrent list, the Central Government cannot bypass its responsibility in this respect. It has been observed that the Centre has been sharing a sizeable amount of finances for the development of the elementary sector of education only after 1990-91. Yet the actual total expenditure by the Centre compared to the states together is very marginal.

The first post-Independent census indicated only 18.3 percent of India's total population as literate, while the same becomes 64.8 percent in 2001. Still half of the females and one fourth of males in

India are illiterate (as per Census 2001), whereas several other developing countries in the world are approaching universal literacy.

Significantly during the last two decades (1981-91 & 1991-01), increase in female literacy has got an edge over the male and the same is also seen for rural literacy compared to the urban segments. This suggests that the country has been approaching a more equitable literacy development in respect of gender and regional pattern in the process. Still there is a gender gap in literacy achievement by 21.6% at the national level and it is more prominent in rural areas 24.6% than in the urban (13.4%) frame of the country.

The overall achievement in literacy development has been satisfactory in the rural India. Till the decade 1971-81, it is the urban literacy rate that has grown faster than the rural literacy rate. Since then, the scenario has become promising over the last decade with the rate of increase in rural literacy recording at 14.01 percentage points which is more than doubled compared to the rate of increase in the urban areas (6.82 percent). But in achieving a regional balance in literacy (person) there is still a substantial gap of 21.2% between rural and urban areas of the country. In gender terms, the gap in female literacy rate is 26.8% and for male literacy rate it is 15.6% between rural and urban areas so far as the last Indian Census is concerned.

There has been a quantum jump in the number of educational institutions over the period 1950-2005. There has been a fourfold jump in the number of primary schools and upper primary schools by more than 20 times, as has been observed from educational statistics.

However, this increase in the number cannot be awarded its due credit unless and until it is found that schools are located within a reasonable distance of the rural households and a reasonable pupil teacher ratio is maintained in the schools. According to the 7th All India Educational Survey (2002) nearly 13% of the rural habitation (1.6 lakh) was still uncovered by any primary school and 22% (2.7 lakh) by upper primary school. One thing that seems to be encouraging is that the coverage has been steadily increasing since 1973 and as such one can expect more rural households to be covered by schools as soon as the VII survey report is published. The increasing number of schools was however not accompanied by a desirable pupil-teacher ratio. The decadal trend in pupil-teacher ratio at primary level is a clearly pointer to the failure to provide adequate access to primary education in the country. The ratio remains as high as around 60 students per teacher (60:1) throughout the last decade (1991-2001) as against the official norm of 40:1.

There is also a serious discrepancy in the numbers of male and female teachers in India, although it has been an area of concern and debate over the preference and success of female teachers in ensuring universal enrolment. Shortfall in the number of female teachers in comparison to male teachers is visible at elementary level of schooling. Proportion of female teacher, especially at primary level, around the world is much higher compared to the Indian average. Though the proportion has been increasing, yet it is quite low at around 35% at elementary level of education, by international standards.

The Gross Enrolment Ratio (GER) at primary level has declined from 114 to 104 for the boys and from 85.5 to 85.2 for the girls during the period from 1990-91 to 1999-00 (Selected Educational Statistics 1999-2000, MHRD, GOI, 2001). This trend is also being observed for the upper primary level too.

The dropout trend of the children has been gradually slowing down but the girls are more dropping out of school than the boys both at primary and upper primary level. At the same time the problem has become more acute at upper primary level than at primary level of education. A recent trend in the fall in the absolute number of out of school children albeit marginally, is an assurance for the achievement of the 2nd MDG.

India, with its wide range of variation and diversification in the socio-economic sphere, it is necessary and significant to analyse the regional pattern of educatonal status at state level rather than considering the problem for the country only. Chapter-3 thus undertakes the task of analysing the problem at state level for a disaggregated view. By using the UNDP's Range Equalisation Methodology and with the help of Principal Component Analysis (PCA), a detail of regional issues

in respect of literacy development and elementary education at state level has been oulined in Chapter 3. The discusiion and analysis pinpoints some important issues. Briefly they are as follows.

Analyzing the international data, it is observed that the target of primary completion rate of Dakar Goal seems to be attainable, while it will be difficult to accomplish the official target of adult literacy rate within the given period of time unless the rate of growth in adult literacy rate picks up. Internationally, the problem of illiteracy is most significant in the most populous countries. These are: Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria and Pakistan (the E9 countries; UNESCO, 2008). As such literacy development and variation is first undertaken.

Following the UNDP methodology of Range Equalisation, the revised literacy achievement index has been calculated for two distinct time periods 1951 and 2001 for each State in the country in order to review the growth pattern of the States. The arithmetical difference between the index values of 1951 and 2001 is calculated in order to review an average progress of achievement over the period from 1951 to 2001. The progress so far achieved by different States shows that it had been quite satisfactory in Himachal Pradesh followed by Maharastra, Punjab, Madhya Pradesh, Tamil Nadu and Kerala. While Jharkhand remains at the bottom position in this respect along with Uttaranchal, Chattisgarh, Gujarat, Bihar and Jammu & Kasmir. West Bengal is closer to the country's national average.

Education as a social variable has received due importance across the world especially over the last decade (1991-2001). By observing the decadal variation in literacy rate (1991-01), it is found that the states with lower literacy rate in 1991 have shown higher decadal increase and vice-versa. While, in aberrations to this, Tripura, Uttaranchal and Himachal Pradesh with a comparatively higher literacy rate than the states like Assam, West Bengal, Karnataka and Punjab have shown a higher literacy jump. Thus it may be said that acceleration in literacy rate is not simply due to a region's past disadvantaged educational background. There might be other variables with socio-economic characteristics that have an impact on literacy development. However, the average literacy progress of the country in the last decades (1991-2001) has occurred because of the better performance of some low literate states. Chattisgarh and Rajasthan have both registered the highest literacy jump at 21.8% over the last decade (1991-2001) followed by Madhya Pradesh, Andhra Pradesh, Uttar Pradesh, Orissa, Uttaranchal and Himachal Pradesh. Still, a sizeable proportion of the population (304,102,917) in the age group of 07 and above, are still illiterate, out of which, 36.38% are males and 63.62% are females (Census 2001). In India, there are 35 States and Union Territories of which 11 have arrived at the literacy target of 75 per cent (the official target to be reached by the year 2007). These 11 states altogether comprise only 14.9% of the country's population thereby leaving around 85% of the population at a literacy level whose average is below the desired level. Again, 13 states lie below the national average literacy rate (64.8%) which together comprises 55.2% of total population, i.e., more than half of the country's total population still remains below the national average. This shows a wide range of variation in literacy attainment in spite of tremendous leap in this respect. The regional pattern of literacy achievement is therefore very important to understand the critical gap in literacy in the country. In all, it is found that educational backwardness in India is more serious among the rural population and most importantly in the case of rural females.

By calculating the literacy development index (LDI) with the help of PCA, it is perceived that out of 35 States and UTs, 18 States have been identified where none of the districts ranked in the high LDI (LDI> 0.750) group both in 1991 and 2001. Again out of these 18 States, Bihar, Jharkhand and Arunachal Pradesh even did not have any of its districts ranking in the middle LDI (LDI>0.600 but < 0.750) group too. West Bengal in this respect also shows an unsatisfactory result. Out of its 17 districts, 04 were found with middle LDI and 13 with low LDI in 1991. The ranking in 2001 has improved with 04 more districts entering the category of middle LDI and with none of the districts getting entry into the highest quartile of the literacy category.

With respect to educational performance at school level, the enrolment ratio is much higher and it is comparable with the educationally developed countries. Discussion thus needs to concentrate on

two main issues - Primary Grade Completion Rate and Dropout Rate to identify the critical State in the country. A little above 70% (2006-07) of total enrolled children in India completes the primary level of education. State wise, Bihar, Rajasthan,Uttar Pradesh, Assam along with Uttaranchal and Jharkhand are found to be the lagging states in this respect. Similarly, the relatively advanced states (Kerala, Himachal Pradesh, Tamilnadu, Maharashtra and Karnataka) also maintain a higher survival rate. West Bengal has been remaining just above the national average and very much closer to the national rate. At primary level, the rate of school dropout is calculated at 8.61% in the country (2006-07). In this respect, Tamil Nadu, Kerala, Himachal Pradesh, Punjab are again doing well in maintaining a lower rate of dropouts in the recent years (2004-05, 05-06 and 06-07). West Bengal occupies 13th position out of 20 major States and its performance is worse than Jharkhand, Assam, Bihar, Madhya Pradesh etc. Thus the state needs special intervention to bring it in line with the other better performing states in the country. Considering such a low performance level as well as lower access to school education scenario, West Bengal has been ranked in the 32nd position out of 35 Indian State and UTs with respect to elementary level of education. Considering the value of the indices (Access, Infrastructure, Teacher and Outcome) used for the ranking by NUEPA in constructing the EDI, it appears that in West Bengal, the value of access index is sufficiently higher at primary level. But at upper primary level it occupies the bottom most position (34th as per DISE 2006-07). Apart from this, the state has very poor infrastructural facilities both at primary and upper primary level (Rank is 29th &31st as per DISE 2006-07). It is thus a matter of conflict and also a question that, why West Bengal with a moderately higher literacy rate of 68.64% (9th among the 21 states in 2001) has been occupying such lower ranks among the states in India.

Given the challenges that surround the educational development in the state of West Bengal, Chapter-4 gives special emphasis on this particular state with a view to observe the nature and causes of educational development at a further disaggregated level. The district and sub-districts (CD blocks) have been taken as unit of analysis to investigate the problem of educational backwardness in this particular state. The important findings are noted below.

Following the UNDP Methodology of Range Equalization, ranking of the 17 districts in the state has been done for both rural and urban areas separately. The rank analysis shows that Murshidabad, Malda and Uttar Dianajpur are the three districts whose ranks in rural literacy achievement during the last 50 years have remained in the lower rungs of the literacy ladder. As far as the urban trend in literacy achievement is concerned, Murshidabad and Malda again retain the bottom most position throughout the census periods. Uttar Dinajpur in this respect is well ahead compared to the above two districts. Thus it may be said that rural areas of Uttar Dinajpur district are able to generate special interest for a researcher.

As per the Census 2001, 10 out of 17 districts in the state have a literacy rate below the state average. Out of these 10 districts, five are from the northern part of the state which is known as North Bengal or Uttar Banga. The specific three other districts (Bankura, Birbhum and Puruliya) of southern part of the state (known as South Bengal) also registered as low performance region.

In order to capture the literacy achievement while identifying the underlying gender bias more accurately, a Gender Disparity Index in Literacy Rate (GDLR) has been constructed in addition to the simple Gender Gap in Literacy Rate (GGLR). Based on this index, Puruliya has been found with the highest index value (66.98 in 2001) followed by Uttar Dinajpur (45.89) and Bankura (43.08) thereby suggesting that these are the most female disadvantaged districts in the state. The female literacy rates are the same (36.5% in 2001) for both Uttar Dinajpur and Puruliya (lowest in the district), but the male and consequently the total literacy rate in Puruliya (73.72% and 55.57% respectively) is much higher than Uttar Dinajpur (58.48% and 47.9 respectively). This implies that the females in Puruliya are excluded from the overall educational development process.

After calculating the literacy rate of each of the villages in West Bengal (37, 956 populated villages in the State as per Census 2001), the villages with a literacy rate below 25% are identified and termed as Educationally Deprived Villages in the state. It is found that 843 villages in the state show a minimum of 25% literacy rate. The distribution of these educationally backward villages

throughout the districts reveals that Uttar Dinajpur with 207 (25% of total 843 deprived villages) villages in this category tops the list, which suggests that the educational deprivation is mostly concentrated in the districts where literacy rate is very low.

In order to analyze the causes of such differential performances in literacy development in the state, a multiple regression analysis has been performed where the 17 districts as well as the 341 blocks of West Bengal are taken separately as unit of analysis. A series of socio-economic variables as well as institutional supply side factors are regressed on male and female literacy rate individually. The regression result shows that both at district and block level analysis, holding of no assets by the household bears a significant negative impact on both male and female literacy rate. Beyond the level of income, the source of income or the composition of income does bear significant influence on literacy rate. The study found the literacy rate to have a decreasing trend when the proportion of agricultural workers (AGRLB) in total work force is increasing and vice-versa. While the case is opposite when there is an increase in cultivators in the total workforce. Thus it appears from the study that redistribution of land among the landless workers who are still depending on agriculture may be an economic policy measure for progress in education.

Most of the Indian studies (Pandey, 1990; Jeejeebhoy, 1993; Krishnaji, 2001 and Mukhopadhaya, 1994) have established the negative impact of female work participation rate (WPRF) on literacy and enrolment. The analysis at district and sub-district level partially supports earlier findings. In secondary data analysis at block level, this rate appears to have a depressing effect on both male and female literacy rate and the coefficient is found to be much higher in the case of explaining the female literacy rate. This suggests that the absence of a female member in a family is substituted by the presence of another female member and thus the mother's absence does not have a very strong depressing impact on male literacy. However the variable does not appear to be significant at district level.

The proximity of school within the habitation and a primary school within it and an upper primary school within a distance of 3 kilometers have been taken as a measure of availability and accessibility of school. It is found from the regression result that it is only the availability of upper primary school that has a positive impact in enhancing literacy rate. This availability is found to be more powerful in explaining the female literacy rate. The result in this respect indicates that access to upper primary school within a reasonable distance has a great positive impact in enhancing the female literacy rate.

India has a fewer number of female teachers compared to males and its impact on educational development and it is an area of concern and debate. Because of the nonavailability of data, the variable is used only at district level regression analysis and the result is found to be illuminating. The proportion of female teacher at primary level is significant for enhancing the female literacy rate, while no such statistical significance is being found for enhancing the male literacy rate.

According to Census 2001, the state of West Bengal occupies the middle most position on the basis of literacy rate. Whereas, the educational development index (EDI) of NUEPA, on the basis of school education indicators, ranks the state as one of the most backward (32nd out of 35 States and UTs) states. This paradoxical finding requires further exploration which needs a separate study that is beyond the scope of present study. However, an asymmetry is observed here. Internationally the indices pertaining to human development [Human Development Index (HDI) of UNDP and Education for All (EFA) Development Index (EFA-DI) of UNESCO] measures only the outcome related indicators. In India, the Working Group on EDI has considered three access-related, five infrastructure related and six teacher related indicators along with nine outcome related indicators in the process of construction of EDI. Some of these are enabling indicators while others are achievement indicators which are distinguishable from the international indices. For this, a multiple regression analysis is carried out using selected number of enabling indicators as explanatory variables and some selected achievement indicators as dependent variable in the regression equation. The result of regression application displays some significant associations. The proportion of schools with student-classroom ratio of 60 and above, the proportion of schools with girls' toilet, average student-classroom ratio – all exert a positive impact on achievement

attributes like GER, Dropout Rate, Retention Rate etc. The availability of upper primary school compared to primary schools/sections also positively affects the achievement attributes.

Finally, the literacy and school level outcome indicators are found to be disappointing in specific regions of the state. District wise, Uttar Dinajpur appears to be the most deprived one along with some other districts of the state.

As per the available data on literacy and elementary schooling at district level, Malda, Murshidabad, Uttar Dinajpur and Puruliya have been found at the lower ranks in West Bengal. However educational deprivation in Uttar Dinajpur appears to be most alarming. It is the least literate district in the state and it could barely maintain its rank at 518 out of 593 districts in India as per the Census 2001. At the same time, it is placed at the rank 505 out of 569 districts for which EDI has been calculated. Moreover, the Government of India has identified some districts that need special focus. The districts have been identified based on the number of out-of-school children and districts concentrated with Scheduled Castes and Scheduled Tribes population. Uttar Dinajpur has been found as one of such districts with a concentration of Scheduled Castes population and having more than 50000 Out Of School Children in its possession. Apart from this, the report of the Sachar Committee (GOI, 2006) has identified top 100 Districts (by size of Muslim Population, 2001 Census) among which Uttar Dinajpur occupied 16th position as per its Muslim population size (absolute). The socio-economic indicators of the Muslim population like dependency on agriculture (80% of the total worker), Female literacy rate (25.5%), size of the urban population (2.1%) etc. are mostly staggering in this particular district. Accordingly, a special focus has been given on this particular district and Chapter-5 makes an attempt to investigate educational problem of the district at sub district and village level.

Observations on secondary data analysis for Uttar Dinajpur district are provided below -

Urban Literacy Rate in the district (80.50%) is almost equal to the state average but Rural Literacy Rate of the District (42.9%) is much below the state (63.4%). A little more than 30% of the females in rural areas of the district are found to be literate (Census, 2001).

Subdivision wise literacy rate shows a sharp variation between the two subdivisions- Islampur (38.5%) & Raiganj (58.1%).

Out of the 10 least literate blocks of West Bengal (2001), 5 were found in Uttar Dinajpur and all these 5 Blocks were in Islampur subdivision.

Hemtabad block of Raiganj subdivision with a 56.72 % literacy rate is the highest literate block in the district and Goalpokhar-I of Islampur subdivision is the least literate block with only 31.6% literates (FLR-19.8%).

Muslim population in this district (47.36%) is much higher than the state average (25.2%) while the literacy level of the muslims in the district (36%) is much below the state average (57.47%) of that particular religious group. Again, there is a large variation in literacy rate between muslims (36%) and non-muslims (58%) in this particular district. Apart from this, the literacy rate among the Scheduled Tribe population (28.7%) is lagging far behind the district average along with a block level variation too. Specific policy intervention is therefore necessary for these two sections of population.

The district has only 71% (state average is around 74 percent) mouzas that are covered by primary schools. The situation is more critical in case of the accessibility of upper primary schools. Only 9.14% (state average is around 15 percent) of the villages were served as per the census, 2001 report. Accessibility of primary school in three blocks of Islampur subdivision, namely, Goalpukur-I, Goalpukur-II and Karandighi is far below the state and district average.

The data on proportion of female teacher in the district consistently shows a positive bias in favour of the blocks of Raiganj subdivision and in favour of the urban frame too. Goalpokhar-I block has the lowest proportion of female teacher (5.61%) followed by Chopra (8.40%) and Goalpokhar-II (9.45%), while it is the highest in Raiganj block (31.48%) followed by Kaliyaganj (28.52%), Hemtabad (22.40%) and Itahar (19.93%).

Against the policy norm of 40 students per teacher (PTR) at primary level, the state average was 56.8 and district average was 57 in 2002-03. For the upper primary stage, this ratio was 79.1 at state level and 73.7 at district level. The PTR at primary level across the blocks is found to be the lowest in Kaliyaganj (43.7) of Raiganj subdivision and highest in Goalpokhar-II (102.9) of Islampur subdivision. The ratio is more than double in each block of the Islampur subdivision compared to Kaliyaganj block at primary level.

The dropout rate at primary level is found to be the highest in Chopra block (63.4% in 2005-06) as against the district average rate of 34.8%. Along with this, the primary grade completion rate is alarmingly low in this block (24.7%).

Against this backdrop a multiple regression analysis has been carried out. Inferences drawn on the regression exercise performed at the district and block level (for each blocks separately) taking mouzas as unit of observation in both the cases, are firstly spelt out for a district level view and later blockwise results are compared with the district result. An intra-block comparison has been developed in order to capture the more specific socio-educational characteristics of each block separately.

The DEPRATIO (Non-worker/Worker) is calculated as a ratio of total worker to non-worker at the district, block and mouza levels. This variable is found to be significant and exerting a high negative impact on literacy rate so far at district level regression equation is concerned. But the variable is not found as significant at block level regression analysis in most of the blocks. Especially, in the blocks of Islampur subdivision, it is insignificant except in Goalpukhur-I, while, the ratio appears to be significant with strong negative impact on literacy rate in the blocks of Raiganj subdivision except Kaliyaganj. It may be noted here that the ratio is found to be significant in those blocks where the value of the ratio is comparatively low. It implies that households with larger number of non-workers exert increased economic pressure on the earner/s of the family.

Female work participation rate has been estimated to have a negative coefficient that supports the earlier studies at district level. But at sub-district level the result is not uniform. Only in two blocks (Goalpokhar-I and Raiganj) it is found to be statistically significant with negative impact on both male and female literacy rate. In Karandighi it is found to be significant in influencing male literacy rate and in Itahar, the female literacy rate. In other five blocks (Chopra, Islampur, Goalpokhar-II, Kaliyaganj, and Hemtabad) the female workforce participation rate does bear a statistical relation with the literacy development of those areas.

Agricultural Dependency of any region has been measured by the proportion of workforce engaged in agricultural activities either as a cultivator or as an agricultural labourer. An interesting result has also been observed at the mouza level analysis. Across the blocks, the AGRWRKR has its significant negative impact, while cultivators in some blocks exert positive significant impact. At district level, only AGRWRKR is found to be significant with negative impact on literacy achievement.

In the present analysis, at district level, the proportion of Scheduled Tribe population characteristically has exerted its negative impact on literacy rates with a substantial depressing effect on overall female literacy rate. However, quite unusually, the proportion of Scheduled Caste population significantly influences the overall literacy rates in a positive direction. This result supports the secondary data as because the literacy rate of the SC population (50.1%) in this district is marginally higher than the overall literacy rate (47.89%).

The regression result shows that the explanatory power of a particular variable does vary according to the area in which it is applied. This explains that any policy measure taken even at a district level may not produce the same impact throughout the district. Area-specific micro level planning for some selected issues may give better result along with a universal planning at district level.

While analyzing the education scenario of Uttar Dinajpur district, it has been found that educational deprivation in the district is mostly associated with Islampur sub-division leaving the

Raiganj subdivision comparable with the state average. The study is therefore becoming more focused and the educational backwardness appears to be more challenging in Islampur subdivision of the district. Observing this deprivation, a detailed household survey is carried out in four villages of Islampur subdivision in two relatively highly literate villages and two comparatively lowly literate villages. Literacy rate and elementary schooling are examined. Chapter-6 deals with the investigation of literacy rate at household level and the factors influencing the same. Multiple regreesion analysis is applied for observing explanatory power of household related factors on literacy rate. The result so found is given below in a summary form.

In explaining the literacy rate at district and block level in chapter-4, asset holding has been used as a surrogate for income. There it was observed that holding of no assets by the household bears a significant negative impact on both male and female literacy rate at block level in the state. However, it does not bear any significant impact on female literacy rate at district level. In the present analysis, two expenditure related variables have been tested to see the impacts on literacy achievement. Monthly per capita expenditure (MPCE), which is commonly used as a proxy for income, remains as a significant variable in determining the overall literacy rate (PLR) and male literacy rate. On the other hand, expenditure on education as proportion of total expenditure (EDNTOTEX) has been found significant in explaining the overall and female literacy rate. The explanatory power of EDNTOTEX (0.909) is much higher than the conventional MPCE (0.053) in explaining the overall literacy rate. Again, EDNTOTEX has been remaining significant in analyzing the female literacy rate while it is insignificant in explaining the male literacy rate. This gender difference explains to some extent that it is the intention of expending more income on education that may enhance the female literacy rate.

In Chapter-IV, while analyzing the district level and block level regression equation in West Bengal, the variable has been found as significant exerting its negative impact on literacy rate. The mouza level analysis (in Chapter-5) exposes the variable as both significant (at Goalpokhar-I block) and insignificant (at Chopra block) one. Female work participation may originate due to the fact that the female members are well equipped with the knowledge for participation in the labour market. Or, it may be that the earning of the male members is not sufficient to maintain the economic well being of the family. From the cross tabulation of data on mothers' education level it is observed that out of total 116 mothers, 58 mothers are completely illiterate and 36 out of the remaining 58 literate mothers, are barely primary literate. As such, the second reason seems more plausible given the socioeconomic scenario of the villages in the study area. With such poor educational level, it would be very optimistic to assume that the mothers are well acquainted with the economic and social benefit of education. Consequently, in the present primary data analysis, it has remained as insignificant to determine literacy rate.

Economic dependency ratio (ECONDEP) has been tested at mouza level where it has been found that the ratio is significant in those blocks where the value of the ratio is comparatively low (Chapter-5). In the present analysis it is found significant in explaining the overall literacy rate, but separately it does not bear any statistically significant effect on male or female literacy rate.

Among the parental characteristics, educational level of mothers has been tested to be a statistically significant variable. Mothers' education however is insignificant in determining the male literacy rate while it has strong positive impact on female literacy rate. Similarly, fathers' education remains insignificant in determining the female literacy rate, but it exerts a positive role on male literacy rate. It explains that in order to literate the females in an educationally deprived area, the girl children have to be schooled and well equipped with a minimum literacy skill. These educated girls within a reasonable time after being a mother in the society will provide support to enhance their next generation learners.

Households with a regular income pattern are more likely to have a high male literacy than those with irregular income pattern. But no such relation is found in determining the female literacy rate in the study area.

Assigning a numeric code 1 to those households where at least one child has been working in labour market and 0 other wise, the dummy variable as such exerts its strong negative effect in explaining the female literacy rate.

Out of nine explanatory variables that are incorporated in the model, seven variables (EDNTOTEX, MPCE, ECONDEP, INREGIRREG, OPTNTCOST, FTHEDN and MTHEDN) show statistically significant relationship with the literacy characters (PLR, MLR, FLR) of the households. In order to compare the relative magnitude of regression coefficients the Partial and Semi-Partial correlation coefficients between the dependent and explanatory variables separately for each predictor have been calculated. From this it is found that it is the educational level of mothers that captures the overall (PLR) and female literacy rate (FLR). Monthly per capita expenditure which was a proxy of income may be posited as the next relatively important factor in explaining the overall literacy rate. The opportunity cost of sending a child to school is the third most important factor among all the predictors in explaining the PLR. The pattern of income (INREGIRREG) which has been assigned the largest regression coefficient in OLS analysis is not as significant in the partial and semi partial correlation analysis, although it has considerable importance in explaining the variations in PLR and MLR.

In explaining the MLR, MPCE is found to be the most important variable along with income pattern (INREGIRREG) and educational level of father. In explaining variations in FLR, after mothers' educational achievement, the proportion of educational expenditure plays a vital role than the other predictors included in the model. It may be noted that female work participation affects the FLR adversely with a high magnitude. This variable however has negligible impact on other literacy characteristics.

One of the important findings in Chapter-6 is that parental education level can have an enhancing impact in determining the literacy level of the household. Putting it in another way, education itself is an important significant factor that can further the development of education at least at household level. Accordingly, policy initiative to ensure minimum of eight years of schooling for all children is necessary so that within a near future this meaningful literate section will further generate a more educationally advanced human resource for the society. This requires, among other things, universal enrolment and a minimum school dropout and accordingly high retention rate. As such the final investigation of the present research concludes with an assessment of universal enrolment and dropping out of school in connection with the children belonging to the elementary level age group (5-14 years age) in Chapter-7. Logistic regression has been used as an econometric tool its technique has been detailed for use in the present data set. The regression model assumes i) either a household has at least one children who has never been enrolled, and ii) either a household has at least one children who has dropped out of school or has not. It is of primary concern to target those households where the event of school dropout or never enrolment occurs. This occurrence is a chance expressed in probability manners when fitting a logistic regression equation. So, identifying the factors that determine this chance is the primary concern of the exercise. The results in different dimensions are briefly presented below. Before running the multiple regression, a univariable analysis of each potential independent variable has been carried out in order to find the 'best', most 'parsimonious', model to predict the dependent variable or to explain the variation in the dependent variable. The independent variable showing a p-value < 0.25 in the univariable test that has been considered as a candidate for the multivariable model.

By observing the Frequency Table it is found that 31 households, out of total 120 households surveyed, have been found where one or more children, once enrolled in school, dropped out of school. This represents that in case of 25.8% households, the problem of school dropout is somehow related. On the other hand, the problem of never enrolment is less common than school dropout. Less than 20% (23 out of 120 households) of the households are lagging behind the target of universal enrolment.

Overall, the estimated model correctly predicts 83.33% observations with a sensitivity of 64.52 percentage points and specificity of 89.89 percentage points and in determining the probability of

never enrolment, the estimated model correctly predicts 90.00% observations with a sensitivity of 65.22 percentage points and specificity of 95.88 percentage points.

Diagnostic information for multicollinearity (tolerance statistics, VIFs and also Eigen values) among the predictors has already been calculated and shown in simple multiple regression analysis and no serious concern of collinearity was found. In addition to this, the standard errors associated with the logistic coefficients both for the two models are calculated and found to be not very large (ranging from a lowest of 0.006 to a highest of 1.346). Hence, by prior selection of independent variables following a reasonable criterion and by investigating the standard errors, it is expected that the results are statistically fair estimates in the prescribed model.

By observing the Wald chi-squared statistics, the result shows that the most important variables contributing to the probability of dropout of school are - proportion of educational expenditure (EDNTOTEX), Pattern of income (INREGIRREG), Mother's education level (MTHEDN) and Opportunity cost of schooling (OPTNTCOST) and from the regression coefficients and its associated significance level the Wald chi-squared values Fathers' education level (FTHEDN), Monthly per capita expenditure (MPCE) and Household dependency ratio (HDEP) are observed to be as significant in predicting the Probability of Never Enrolment. It may be noted here that the significant variables in explaining the log of odds of the probability of dropout and never enrolment are categorically different from each other. It signifies that the socio-economic correlates are not same for explaining the school level outcome attributes (e.g. dropout and never enrolment are being significantly affected by different variables). Secondly, it may also be said here that the household related socio-economic variables are relatively less important in determining the enrolment/non-enrolment decision compared to the problem of school dropout by the children. This opens the scope of including supply related schooling facilities as additional variables in determining the enrolment decision of the households which may be separate study in itself.

Contribution of significant explanatory variables towards the dependent variable is the central point to be discussed in the interpretation of logistic regression coefficients. In doing so it is found that -

From the logistic slope coefficient it is found that for each one unit increase in MPCE (Rs.10.00, because MPCE is measured in multiples of Rs.10) the predicted odds of never enrolment is decreased by a factor of (1 − 0.853) or by a factor 0.147. This explains that a 1 unit increase in MPCE (Rs. 10.00 because MPCE is measured in rupees) will lower the odds of the event that at least one children within a family is never enrolled in school by 14.7%. It is also found that higher the expenditure on education as proportion of total expenditure, the less likely (β = -0.258) it is that a child would be dropped out from school within a household. The odds is 0.773 which explains that for each 1 per cent increase in educational expenditure, the odds of dropping out of school by one or more children within a household decrease by 22.7% (1 − 0.773) or by a factor 0.227, adjusting for other variables in the model. Comparing the regression result of the two expenditure related variables, it is observed that MPCE, which is calculated from total annual expenditure of the family (crude measure of family income), remains significant in determining the probability of never enrolment but has no impact in determining the probability of children's dropout from school. While proportion of educational expenditure, although significant in determining the probability of children's dropout from school, is practically insignificant in determining the probability of never enrolment.

Educational level of parents is entered in the model as a continuous covariate measured in terms of completed years of education. A higher level of parental education is expected to lower the chance of probability corresponding to the occurrence of both never enrolment and dropout of school in the model. The Wald chi-squared values for fathers' education is significant with its expected negativity (β coefficient is 0.517 <1) in explaining the probability of never enrolment while, mothers' education remains insignificant here. Mothers' education is found to be statistically significant with expected negative sign (β coefficient is 0.543<1) of β coefficient in explaining the event that some of the children is dropped out of school but insignificant in predicting the

probability of occurrence of the event of never enrolment/enrolment. This suggests that an educated father is more active in taking the decision that his children will be enrolled in school, while an educated mother takes the active part in continuation of her children's education or dropping out of school.

Nature of income has been assumed as dichotomous covariate in our model. It has been assigned with the score 1 for the households with regular pattern of income and 0 if the main income of the family is irregular. The β coefficient of this variable (-1.350) is significant for predicting the probability of dropout. The corresponding odds ratio is 0.259. We would therefore say that the odds of one or some children within a household compared to all enrolled children attending school are decreased by a factor of 0.259 when the respondent's main income is regular compared to those with irregular income pattern, controlling for other variables in the model. It suggests that more the households with regular income pattern, less likely will be the chance of school dropout and vice-versa provided the other covariates of dropping out remains the same.

Opportunity cost of sending the children to school measured in terms of job opportunity of children which is found to be significant in predicting the dropout pattern of the children within a household although it does not have any significant predicting ability towards enrolment decision. The official age (5+ years) of child to be enrolled in the first grade of any primary school in the state acts as a deterrent to child labour. Accordingly, statistical results also support the logic. The regression coefficient has the positive sign (1.476) which indicates that the presence of job opportunity of children will increase the likelihood of dropping out of school. The corresponding odds ratio is 4.374 representing that the problem of dropout of school will be four times more likely to occur if there is job opportunity of children for which the households send their ward/s to work rather than sending them to school.

Statistical findings also point out that the non-financial burden shouldered by the schooling age children (i.e., caring for the siblings and old age members in a family) in a family is significant in predicting the probability of never enrolment while making it insignificant in affecting the dropping out of school. The regression coefficient (2.179) and corresponding odds ratio (8.833) suggests that one unit increase in household dependency ratio will increase the odds of never enrolment by about 9 times compared to all children enrolled in school.

8.2 Concluding Remarks

This section brings the present dissertation to a logical conclusion while outlining certain policy prescriptions towards literacy achievement and educational attainment. The study has attempted an investigative study to determine the factors affecting the variations in educational development in India with a special reference to West Bengal. Based on the findings and conclusions in the previous sections, several implications for further research are subsequently outlined in the closing of the present chapter. The study has been carried out by observing the secondary data at several levels of disaggregation as well as household level survey based data because some of the significant variables found affecting literacy achievement and educational attainment are difficult to be captured within the policy frame at national or state level and even at a district level. Considering such typicality, policy prescription is made against two different perspectives suggesting some general policy measures and certain micro level policy measures.

8.2.1 Overall Policy Prescription

On observation of literacy data, it is found that educational backwardness in India is more serious in the rural section and worse in the case of rural females. A comprehensive policy to bring the Indian female children into the fold of education, especially in the rural areas, thus may be framed separately for a better balanced educational development.

Following the UNDP methodology of Range Equalisation, average progress of literacy achievement between the period commencing 1951 to 2001, shows a large spatial variation in the literacy in the country. Some of the regions have performed poorly, while some others have virtually failed to improve on the achievement levels. Construction of literacy development index

(LDI) supports the view too. Thus it is expected that region specific measures may also induce some improvement in this respect.

By analyzing the decadal variation of literacy rate, it is found that the average literacy progress of the country during the last decade (1991-2001) has occurred because of the better performance of some low literate states. However, aberrations to the rule exist. Notably, Tripura, Uttaranchal and Himachal Pradesh with a comparatively higher literacy rate show a literacy jump higher than the states like Assam, West Bengal, Karnataka and Punjab etc. (Fig-3.2). Thus it may be said that there might be other variables with socio-economic characteristics that have an impact on literacy development and the major task of the study has been to identify those variables and their explanatory power in enhancing the literacy rate especially in the disadvantaged areas of the country. The present study covers one laggard state and has tried to find the causes of such inadequacies. Further research on the leading states may be undertaken in order to find out the enabling and enhancing factors of education.

Growth in the number of educational institutions is commendable. But by reviewing the growth pattern of pupil teacher ratio, it is found that the ratio has not improved since 1950 as it should have been at primary level. On the other hand, at upper primary level, starting with a considerably lower PTR, the ratio has been successfully remaining at around 40:1 level, the official norm. At the same time, a low proportion of female teachers at primary level of education have consistently been observed. Thus policy measures may be taken to recruit more primary teachers giving special emphasis on female reservation. Both the indicators are quite unfavourable towards literacy and educational attainment in the state of West Bengal and accordingly policy at state level may specially be designed to provide favourable educational environment in the state.

Government expenditure on education has been remaining well below the 6% of GDP (Kothari Commission's recommendation) recommendation, thereby witnessing the government's apparent apathy to realise the goal of UEE. It is far below if the comparison is made with most of the developed countries in the world. Considering the international scenario, the present study advocates the increase in public expenditure on education to the recommended 6% of GDP level for the 11th plan period (2007-12) for achieving the MDG and EFA Goals within 2015.

Review of Elementary Education in India in chapter-3 exhibits a severe discrepancy in respect of school availability in regions of India. Only 16.64 % of total number of government schools in the country is stage-integrated schools that have the scope of continuous education up to elementary level (class-I to VIII). West Bengal in this respect remains at the bottom of the list with only 1.2% of total schools in West Bengal having such stage-integrated schooling facility. Moreover, insufficient number of upper primary schools compared to primary schools especially in rural India has been remaining as one of the major problems of school education. In such a situation, as opposed to providing more schools under the format of conventional primary or upper primary or upper primary with secondary and higher secondary schools separately, establishment of schools having the facility of education from Grade-I to at least Grade-VIII (i.e., primary with upper primary schools) especially in remote areas may aid in the completion of eight years of schooling. A comparative study reviewing the educational development of elementary school children in such two opposite provisional scenario may throw light on this matter.

The district level analysis of literacy trend and analysis of school education system has categorically identified the five districts of northern part of West Bengal along with three other districts in the south-western part as the lowly performed districts that need special attention. Gender disadvantage is acute in two specific districts namely, Puruliya and Uttar Dinajpur.

Educational deprivation is also found predominantly among two sections of the population, namely, Scheduled Tribes and the religious minority, the Muslims in the State. The latter being the economically disadvantaged in position and their educational backwardness is identified in Uttar Dinajpur district. The sheer numbers of Muslims (47.86% of total district population), SCs (27.7% of total district population) and STs ((5.1% of total district population) in Uttar Dinajpur district are overwhelming and hence the district's backwardness is represented by their backwardness. Women amongst these socially and economically marginalised groups are special areas of concern

that needs special attention. Additional Government recognized Madrasahs *are* required to be established to encourage the children of the religious minority to enroll in the schools.

It has been an experience that after the introduction of cooked Mid-day meal scheme in the primary schools and thereafter up to the elementary level in the country, significant improvements in enrolment rate and school attendance rate are being observed. But the system is not being universally operated in a proper manner. Hence the scheme should have to be further strengthened. Block and Panchayet level monitoring committee comprising of local political representatives, guardian representatives and teacher representatives may be constituted along with the government officials to regularly monitor the operation of the scheme in different schools under the blocks/panchayets.

The study at the mouza (revenue village) level for literacy rate of all the inhabited villages in West Bengal finds 843 villages where more than two-third of its 7+ age group population as illiterate. Uttar Dinajpur with 207 villages in this category tops the list followed by Malda (154), Midnapur (123) and Bankura (72). Some of these villages show even show zero literacy rate. It is highly recommended to formulate micro level (village specific) planning for immediate socio-economic transformation of these villages. The present study empirically established the causes of such educational deprivation in one of the districts namely, Uttar Dinajpur. Similar micro studies may be carried out in the other deprived districts too for understanding of the root of the problem.

In general, the secondary data analysis in the state at district and sub-district level shows that holding of no assets, presence of agricultural workers, inaccessibility of upper primary school within a reasonable distance and fewer number of female teachers at primary level, are the main reasons for low performance in literacy development in the state. Apart from institutional deficiency at upper primary level compared to primary level and in the number of female teachers, certain quality based provisions such as overcrowded classrooms in a school (student classroom ratio 60 and above), absence of Girl's Toilet also disturbs the achievement attributes like GER, Dropout Rate, Retention Rate. Accordingly, review and re-strengthening of the state government's popular measure of land reforms may also bring about a change in the occupational pattern of workers from predominantly agricultural labourers to cultivators. Micro level survey based study also supports the need of such policy measure. This may alleviate the poverty level too. Moreover, school education is a subject of state responsibility and accordingly provision of stage integrated schools and engaging more female teacher at state level may impact the overall educational development.

8.2.2 Micro level Policy Intervention

The findings at national and state level study raise the need for micro level planning and open the scope of further area based study in the state. Along with this there are some influencing factors that are difficult to be accounted for at macro level. This section therefore, suggests some micro level intervention strategies that may be undertaken on the basis of empirical findings that are broadly outlined in chapters – 5, 6, and 7 of this dissertation.

Female work participation rate although found to have some negative impact on literacy rate, remain insignificant in most of the blocks (at mouza level analysis based on secondary data) thereby opposing marginally, the secondary analysis. Even at household level survey based study, the variable shows its significant positive impact on female literacy rate on the ground that additional earning of the female members may raise the educational expense deployed for a girl child. Illiterate female workers are more commonly seen in the labour market and are occupationally depending on agricultural work. Thus the recent policy initiative under NREGS may be helpful for a better job opportunity for the females by giving more opportunity to the female workers in the study area.

Empirically, it is found that in comparison to MPCE, expenditure on education is a powerful factor especially in influencing girls' education. Since expenditure decision making is a behavioural indicator with individual decision making playing a detrmining role in the household, it is difficult to impose measures to increase household expenditure on education. Thus, providing cash

incentives to the households who are sending their children to school may be an attractive policy measure for households living below poverty line (BPL). This cash incentive should necessarily be over and above the existing incentives like Free Text Book Grant, Provision of Midday Meal and other similar programmes. Awareness programmes regarding the benefits of education for both the sexes in the targeted area may also have positive outcomes at Gram Panchayet level.

In order to compare the relative magnitude of regression coefficients the Partial and Semi-Partial correlation coefficients between the dependent and explanatory variables separately for each predictor have been calculated. From this it is found that it is the educational level of mothers that impact the overall (PLR) and female literacy rate (FLR). Formal education is hardly in any use for the mothers. Instead of formal education, enhancing the level of mothers' education in informal way may be effective. Especially, Total Literacy campaign (TLC) is suggested in this district as because the success of the programme is quite satisfactory in other areas. More than 70% of targeted learners (5.6 lakhs) were enrolled and among them around 66% learners achieved the National Literacy Mission (NLM) norm since the inception of NLM programme in this district in 1998-99.

The implementation of the Child Labour Prohibition Act be strengthened in the blocks where child labour is evident along with low enrolment and high drop out rates.

On examining the probability of never enrolment and dropout it appears that household level socio-economic factors are less significant in explaining the enrolment/non-enrolment decision compared to the problem of school dropout by the children. This opens the scope of including supply related schooling facilities as additional variables in determining the enrolment decision of the households.

The present research, although supports some of the findings of similar earlier studies, adds some new directions too. In a nutshell, it raises some issues that have to be reconsidered, and provides suggestions in terms of policy measures that may be taken and finally opens the scope for further research in the related issues. In India, the Constitutional commitment of ensuring schooling to every child for at least eight years has remained illusive for the past fifty years and more. International focus and concerns are also to be recognized to reach the MDGs. Parental aspirations are also being raised in the wake of new media for dissemination of information and adoption of new technology based learning methods. Future of millions of children in the country is at stake. In order to promote this basic social need of Right to Education in India and thereby educating the children for better future generation, a sincere effort has been made in the present research with the hope that this may provide some direction for policy measures in an effective way.