CHAPTER 1
INTRODUCTION

‘We want that education by which character is formed, strength of mind is increased, the intellect is expanded, and by which one can stand on one’s own feet’

-Swami Vivekananda

1.1. Background of the study

Education is indisputably the most important indicator of social development and human prosperity. The level of prosperity of a nation depends upon the level and quality of education imparted to its citizens. Education is a fundamental human right, a main force for economic prosperity and human growth (World Bank, 1997 and Okidi et al., 2004). Therefore, education for all people is one of the most powerful determinant of nations’ social and economic development.

Significant economic growth has been found only in those countries where high proportion of the total school-age population is found enrolled in primary schools. However, high enrolment in elementary education alone does not assure growth; several other factors are unquestionably involved, but high enrolment appears to be a prerequisite for significant growth (Peaslee, 1969). Research evidences over the years have established the notable positive effect of primary education on economic growth. The positive correlation has been found in several countries which includes USA (Jorgenson and Fraumeni, 1992), Pakistan (Aziz, Khan and Aziz, 2008), Tanzania and Zambia (Jung and Thorbecke, 2001), Nigeria (Ogujiuba and Adeniyi, 2005) and India (Chandra, 2010). The results from the above studies indicate that education expenditures do affect progress of a country positively. Further, education acts as an important tool for social change (Biersteadt, 1957) by lowering the birth rate and improving the education, nutrition and health of children, and can possibly break the vicious circle of poverty (Colclough and Lewin, 1993; Lipton and Ravallion, 1995; World Bank, 1995; Watkins, 2000).

Access to education is universally accepted as an important component of development strategy. In 1990, over 150 governments adopted the World Declaration on Education for All at Jomtien, Thailand to promote the right of education, and after ten years, the World Education Forum in Dakar, Senegal again confirm this promise and adopted the Education For All (EFA) goal. Over 180 nations signed up to ensure
this goal and committed to impart legal support, implement policies and provide financial aid so that everyone could have an education. Commitment towards the right to education was also reflected in the UN Millennium Development Goals, set in 2000 with a deadline for achievement by 2015. There are eight Millennium Development Goals (MDGs), of which two are focussed on education. The second goal in the United Nations Millennium Development Goal is to achieve Universal Primary Education, more specifically, to ‘ensure that by 2015, children everywhere, boys and girls alike will be able to complete a full course of primary schooling’ and the third goal is to ‘eliminate gender disparities in primary education by 2005 and at all levels by 2015’.

Universal access to education is the fundamental right of all people to have equal chance in education, irrespective of their social, gender, ethnic or physical and mental background. Hence, the term ‘access’ may be both quantitative and qualitative in nature. In many EFA projects, access is portrays as a quantitative or supply side variable. Critical supply-side issues include geographical location of school, teacher deployment and training, infrastructure, and safety especially for girls (e.g. Dunne and Leach, 2005; Lewin and Stuart, 2003; Colclough et al, 2003). The Consortium for Research on Educational Access, Transitions and Equity (CREATE) understands educational access qualitatively, than physical access to school. But, true access is the combination of both quantitative and qualitative access. Hence, the term access defines location of schools in all human habitations, enrolment of all school age children, high participation, retention and progression rate, lower repetition and dropout, and positive learning outcomes that confirms the basic skills. Universal Elementary Education (UEE) also postulates equal weightage to quantitative and qualitative access by its four components - universal access, universal enrolment, universal retention and universal learning outcomes. According to Lewin (2007) ‘access to education is not meaningful unless it results in: 1. Secure enrolment and regular attendance; 2. Progression through grades at appropriate ages; 3. meaningful learning which has utility; 4. Reasonable chances of transition to lower secondary grades, especially where these are within the basic education cycle; and 5. More equitable opportunities to learn for children from poorer households, especially girls, with less variation in quality between schools’. UEE also covers certain other dimensions of access, like making provision of schooling opportunities equitable.
Equitable opportunities indicate equality in terms of ‘social access’, ‘economic access’ and ‘political’ access. However, these dimensions received high priority in the provision of primary education only after 1948 when the United Nations Declaration of Human Rights proclaimed education, especially elementary education, as a fundamental human right. Every person has a claim to a basic level of knowledge regardless of his or her social, political, or economic status. Policies for free universal education around the world were initiated in the subsequent years.

1.2. Geographical and Social Access to Schooling

Geographical as well as social conditions have always played an important role in the growth of educational and cultural life all over the world. Geographical inaccessibility has often been mentioned as the main obstacle for the underprivileged people living in the rural areas in developing countries to establish a better life (Shyam, 2007). Education, through which the heritage of culture is transmitted from one generation to another, is to a very large extent helped or hindered by such different geographical factors as topography, climate, distribution of population and the means of communication (Saiyidain, Naik, Husain, 1966). Further, geographical hurdle is not only an important part of accessibility but also always associated with social inclusion and exclusion (Donnges, Ojha and Pearse 2005, Farrington and Farrington 2005).

India has vast geographical spread difficult topography and diverse socio-economic background which make huge challenge to the policy maker to implement standardise quality controlled skill instruction. India is endowed with almost all the topographical features, such as high mountains, extensive plateaus, and wide plains traversed by mighty rivers which do not favour effortless spread of education. For example, the country is bounded by Himalayas on the north, and has large hilly tracts on both coasts of the southern peninsular region, known as Eastern Ghats and Western Ghats, tapering towards the Indian Ocean. A significant portion of western India is covered by Thar Desert and nearly 24.01 percent of the geographical area of the country is covered by forest and tree cover. Physical accesses in these areas are so difficult that the problem of establishing an adequate number of schools is hugely difficult. Thinly distributed population, harsh climate and poor communication system are to be found in various degrees in different topographical areas including in the plains and the table lands. Natural barriers in the form of thick forests or streams and
rivulets without bridge are common feature in many parts of the country (Saiyidain, Naik, Husain, 1966).

On the other hand, the relationship between educational structure and society is interchangeable; sometimes the society control changes in educational structure and at other times the educational structure control changes in the society (Sharma, 2009). The social environment in which the compulsory education has to be implemented in India is as difficult as the physical environment. People of diverse socio-economic background inhabit this country with their diverse customs and traditions. Existing evidence in the education literature indicates that social factors like caste, class, gender, religion, household-status, etc. are some of the major variables which determine the educational behaviour of a child (Govinda and Varghese, 1993, Kingdon 1999, Dreze and Kingdom, 2001). To quote Jean Dreze (2003), ‘educational disparities, which contribute a great deal to the persistence of massive inequalities in Indian society, also largely derive from more fundamental inequalities such as those of class, caste and gender’.

Further, when geographical barriers to access operate together with social barriers such as gender, caste, religion or household characteristics, there will be always delayed development especially in education. Hence, conceptually, the families and individuals which face the double accessibility barriers are the most marginalized group in terms of development. This dissertation develops this conceptual model as a framework for analyzing the impact of geographical and social influence on school participation and outcome.

1.3. Historical Development of Primary Education in India

In order to understand the present scenario of access to schools in India, it is useful to briefly discuss the historical growth of primary education in the country. India has always had a glorious heritage of education and learning from the beginning of time. So, it is with huge pleasure that we look back at our own education system which once outspread the light of knowledge in the world when other human development didn’t even exist on the map. At the beginning of the nineteenth century when British administrators first began to organise a modern system of education for India, the country had a fairly wide network of indigenous schools which had evolved through centuries past (Saiyidain, Naik, Husain, 1966). From the view point of
universal education, however, the number and spread of elementary schools was not satisfactory. But there is evidence that most villages had a school or there was a school for every 400 population in that period (Adam’s Report, 1935). The Report also revealed that in the province of Bengal and Bihar, there were about ten lakhs indigenous elementary schools with the ratio of 1: 31/32 boys of school-going age. Indigenous education served local needs, economic, cultural and religious (Swarup, 2000). Further, there was another important feature which was the mode of learning: the pupils learnt in groups of four or five, generally led by a more advanced student. Describing the method, A.D. Campbell, Collector of Bellary, says: "The economy with which children are taught to write in the native schools, and the system by which the more advanced scholars are caused to teach the less advanced, and at the same time to confirm their own knowledge is certainly admirable, and well deserves the imitation it had received in England. Thus, the Indian system of education was so economical and effective that some of its features were exported to England and Europe". But, indigenous education deteriorates and illiteracy expanded during the British period (1854-1900). The official policies of British period were imperfect, and the position of education for the people was even inferior than that of indigenous education prior to British rule (Saiyidain, Naik, Husain, 1966). Mahatma Gandhi also said against the British in 1931 that "today India is more illiterate than it was fifty or a hundred years ago". The failure to achieve progress in education in the country and at the same time advances made in several other countries made the nation one of the educationally backward countries in the world by comparison. The country is yet to find a place in the educational map of the world despite the massive efforts being made in the recent years.

After Independence, efforts were made to provide a common national structure of education system. The Directive Principles of state policy as articulated in our Constitution, constituted the main framework for the development and management of education in post-independent India. While adopting the Constitution in 1950, the goal was to provide free and compulsory education to every child up to the age of fourteen, within the following ten years. The Government of India ensures in article 45 of the Indian Constitution that, state shall attempt to provide within ten years of onset of the constitution, free and compulsory education to all children up to the age of fourteen years. This need was crucial because, at the time of Independence,
approximately 16 percent of the population was literate (Govinda & Varghese, 1993). However, the target date was revised a number of times.

In addition to Constitutional promises, series of Five Year Plans for national development and three National Policies (1968, 1986 and 1992) on education are the further commitments on the universalization of education in India. Educational access changed its path from quantitative to qualitative direction in later years; the First Plan targeted almost exclusively on the establishment of more schools as a means to satisfy universal provision, and this was the main concern of policy makers throughout the 1950s (Blum & Diwan, 2007). The perception of a national system of education remained unfulfilled for several decades after 1948. In 1964 an ‘Education Commission’ was appointed to recommended policies for development of education and to build a national system of education (also known as the Kothari Commission, 1964-1966). On the recommendation of Kothari Commission, the first national policy on education was formulated and adopted in 1968. It recommended:

(i) Free and compulsory education to boys and girls up to the age of 14 years;
(ii) Application of three language formula and development of Indian languages;
(iii) Development of agriculture and industrial education and
(iv) Six per cent of National income to be spent on education.

In 1971, a national survey of education (the Second All India Educational Survey, or AIES) was organised which covers a full enumeration of all habitations with schools irrespective of their population size. Based on the findings of the survey, distance norms – requiring a school within 1 km of each habitation with a population of 300 or more – were adopted by the national government which continue to be the guiding framework for expansion of the school system till the present day (Blum & Diwan, 2007, NCERT, 1965). The distance norm clearly revealed the necessity of physical access to schools in the country.

In 1986, Government prepared and accepted a new policy on education under the name ‘National Policy of Education’. The Fifth All India Educational Survey (AIES) revealed that around 94 percent people of the country had access to a primary school within the proximity of 1 km of their habitation. The number of primary schools increased from 2.10 lakhs to 5.29 lakhs in the period of in 1950-51 to 1985-86
(NCERT, 1990). At the same time, policy makers were also concerned about the infrastructure and quality of primary schools across the nation (Blum & Diwan, 2007). The focus of National Policy on Education (1986) was on three aspects of elementary education:

(i) ‘Universal access and enrolment’
(ii) Universal retention’ of children up to 14 years of age.
(iii) Substantial improvement in the ‘quality of education’ to enable all children to achieve essential levels of learning.

The policy entailed a further notable change in emphasis, from enrolment to participation and retention. Hence, there came a shift from quantitative access to qualitative access to schooling.

In 1992, the government took steps to review the National Policy on Education 1986 and a Committee was appointed to review the National Policy on Education 1986 and make recommendation regarding any modification needed in the policy and also steps required to implement the revised policy within a time-frame. The reviewed policy gives a national system of education that brings about equality in education. It makes mass movement of adult education programmes, provides universal access, retention and quality in elementary education and gives special emphasis on education of girls, etc.

Responsibilities for the administration and implementation of education policy within the government-funded education system are distributed between the central government, state government and territories, and district and local administrative authorities (Blum & Diwan, 2007). At the national level there is a series of apex institutions which include the National University of Educational Planning and Administration (NUEPA), the National Council of Educational Research and Training (NCERT), the National Council for Teacher Education, the National Institute for Open Schooling, the Central Board of Secondary Education, All India Council for Technical Education, and the University Grants Commission. Further institutions exist at lower levels including District Institutes of Education and Training (DIET) as well as block and cluster level resource centres, Parent-Teacher Association, Village Education Committee, empowered local self-governance mechanisms through panchayati raj (local self-government) institutions, etc.
Furthermore, over the years, several centrally sponsored interventions have also been launched to steer educational policies in the country. Some of the salient interventions in this direction are listed below:

a. Operation Black Board (OBB, 1987)
b. District Institutes of Education and Training (DIETs)
c. Minimum Levels of Learning (MLL)
d. District Primary Education Programme (DPEP, begun in 1994)
e. Sarva Shiksha Abhiyan (SSA, begun in 2001)

DPEP and SSA were both aimed to bring about mass change at the level of the national education system; however, Operation Blackboard was aimed particularly at providing basic resource levels in elementary schools across the nation – defined as two teachers, two classrooms, and a set of teaching and learning materials (Dyer, 2000).

In the early 1990s, an unforeseen improvement was observed in the matter of securing the right to free and compulsory education for all children in India (Juneja, 2003). In 2002, the Parliament passed the Constitution (Eighty-Sixth) Amendment Act. With this act, a ‘Fundamental Right’ was added to the Constitution of India for the first time since its framing. According to this Act, ‘the State shall provide free and compulsory education to all children of the age of six to fourteen years in such manner as the State may, by law, determine’ (86th Amendment).

Despite the number of government programmes including Sarva Shiksha Abhiyan, data shows that many students still perform well below their grade levels. School enrolment has increased to 95 percent but about 52.8 percent of children studying in 5th grade cannot read 2nd grade curriculum as per the Annual Status of Education Report (ASER 2009). With this background, the historic Right to Education Act came into effect in 2010. The RTE Act assimilates the words 'free and compulsory'. Here, 'free education' means that no child shall be legally responsible to pay any kind of fee or charges or expenses which may stop them from elementary education. Whereas, 'compulsory education' gives the responsibility to the state or local government to provide elementary education to all the children in the age groups 6-14 years.
1.4. Need and Importance of the Study

Though the nation is committed to providing free primary education till the age of 14 years, recent assessments of the situation do not present a very positive picture. In this respect, a study of all the essential aspects of educational opportunity like equal access, equal input and equal outcomes is essential in order to ascertain the extent of inequality in overall development, and to identify the factors that are facilitating or hindering the provision and utilisation of resources. This would enable policy makers to formulate proper remedial measures and policies for implementation.

Secondly, the nation has crossed several milestones in the march towards achieving the goal of universalization of elementary education. The basic goals of these initiatives have been to ensure equality of opportunity in the field of education. So, the outcome of such programmes particularly at district and block level needs to be examined because the success or failure of these programmes is directly related to the development of the country.

Thirdly, the geographical location of any region has a strong correlation with its demographic features, which impacts elementary education. It is worth noting that geographically backward areas are generally inhabited by socio-economically backward populations. Therefore, it is necessary to analyze the current pattern of access to education in order to find out causes for exclusion of some vulnerable groups inhabiting certain geographical locations.

Finally, during the recent years, due to unprecedented expansion of schooling infrastructure across the country, India has made improvement in increasing primary access to schooling. The enrolment figure has increased but survival and completion rates have remained quite unimpressive. Also, the learner’s achievement level across the country has remained unsatisfactory and far below the expected level. For example, according to the Annual Status of Education Report (ASER) 2013, while enrolment rates are as high as 96 percent, learning outcomes leave a lot to be desired. Only 18.9 percent of grade 3 students in government schools were able to do basic subtraction or more, as compared to 44.6 percent of grade 3 children in private schools; and the proportion of children in grade 5 who can read a grade 2 level texts is 47 percent, which is almost the same since 2012. Similarly, the fact that Indian students are ranked a lowly 72nd in the Global Education Survey conducted by PISA
(Programme for International Student Assessment) doesn’t show much of promise in our students. It is indeed a matter of shame that the country ranked 2nd last out of the 73 countries that were surveyed. According to a Times of India report (1st June, 2013), an Indian class VIII student is comparable with a South Korean class III student in mathematics skills or a class II student from Shanghai in respect to reading skills. So it is quite clear, that the present education system is not up to the world standards, and the country requires huge efforts to improve this situation in the future.

Given the diverse physical features and huge population, it is important to make sure that the country's future work population is properly educated. Universal Elementary Education should be achieved as early as possible, giving the opportunities of physical, social and cultural access to education to the future generation of our country. For that reason, ‘geo-social’ studies are necessary to find out the inner cause of those problems. This work is an endeavour to study the scenario of access to elementary schooling and also to highlight the reality of formal schooling in different geographical areas from a social point of view.

1.5. Conceptual Framework

Indian Constitution aims to guarantee justice, liberty, equality and fraternity to all its citizens. In achieving these aims, providing for education of its citizens plays a pivotal role. Hence, equality in educational opportunity assumes importance as a criteria to judge the efficacy of policies and programmes pursued by successive elected governments in securing the constitutional objective of universal primary education.

During the initial decades of the parliamentary democracy, Indian Constitution enjoined the State to provide compulsory elementary education for all children up to the age of 14 years under its directive principles. It also enjoined to make special efforts to provide for the betterment of the socially and economically backward sections of the society as also women. The Constitution also mandated to secure equality and social justice to Scheduled Castes and Scheduled Tribe through special arrangements like reservation of seats in parliament and legislative assemblies, in educational institutions and in government employment, abolition of abominable practice of untouchability etc.
The primary responsibility of providing education was with the provincial (states) governments and the Central government played the role of advisor through constituting Secondary Education Commission in 1950 and National Education Commission in 1964. Based on the recommendations of such commissions, a national policy on education was formulated in 1968 to guide the states. Since directive principles are suggestive to make laws and not mandatory in nature, most of the state governments legislated to make lower primary stage (up to class IV or V) compulsory and tried to implement it through five year plans. In 1976, the 42nd amendment to the Indian Constitution brought Education to the concurrent list of responsibilities. Subsequently, implementation of the Compulsory Primary Education Acts passed by the States got a fillip through additional support through the central funding in the form centrally sponsored plan schemes.

The Constitution (Eighty-sixth Amendment) Act, 2002 inserted Article 21-A in the Constitution of India to provide free and compulsory education of all children in the age group of six to fourteen years as a Fundamental Right in such a manner as the State may by law determine. The Right of Children to Free and Compulsory Education (RTE) Act, 2009, which represents the consequential legislation envisaged under Article 21-A, mandates that every child has a right to full-time elementary education of satisfactory and equitable quality in a formal school which satisfies certain essential norms and standards.

The crux of the issue lies in managing to provide elementary education of 'satisfactory and equitable quality' in formal schools. Formal education India dates back to colonial period and hence worked as a tool of social control and also conformity to the foreign rule. It was characterized by exclusiveness with differentiated norms and yardsticks of administration. British rule kept the masses outside the purview of education through low investment on provision of schooling, prescription of elaborate curricular norms and public examination at different stages of school education and supported organized private initiatives of vested interests to run schools under government supervision. At the time of independence, the country had exclusive schools for elites, government run schools mostly in urban areas catering to upper castes/classes which resulted in very low penetration of education in rural contexts.
As far as the Education System was concerned, freedom from foreign rule and establishment of the Indian Republic did not make much difference as it allowed the old system of education to continue. Systemic thinking favoured status quo, and therefore resisted drastic reforms. All efforts to change the system like Basic Education System inspired by Gandhiji’s thinking were sidelined. Differentiated school education through the introduction of Central Board of Secondary Education along with State Boards and allowing the Indian Council of School Education to regulate elite schooling through its own examination system were allowed to continue. At the operational level privately funded board-recognized ‘public schools’, Central and State government managed schools, privately managed schools recognized by state boards, government aided schools and minority schools with or without government aid proliferated in urban contexts. Over the decades the number of poorly equipped government schools gradually grew in number particularly in the rural parts of the country under government's five year development plans initiative, which continued almost till the turn of the century. Since the nineties, Five year plan initiatives have been getting replaced by centrally sponsored schemes for expansion of school education like District Primary Education Programme, Sarva Shiksha Abhiyan, and currently, Rashtriaya Madhymica Shiksha Abhiyan in the country. Schooling under both Five Year Plan initiatives as well as the recent centrally sponsored schemes are all driven by uniform norms for utilization of funds.

So long as schooling processes are controlled and regulated through high stake examinations at significant points of school continuum, an equitable arrangement of needed learning conditions is necessary and also an essential condition to secure satisfactory and uniform quality of formal schooling.

In the Indian context, schooling processes are governed by centrally derived curricular norms demanding minimal packages of teaching learning inputs like opportunity time to learn under teacher supervision, teaching learning support like classrooms, healthy environment, library and other materials to make learning enjoyable. Strategic plans for implementation are governed by centrally evolved norms, particularly for utilising finite financial resources. The new context of establishment of local government structures through the constitutional amendment in the form of Panchayat Raj and urban local bodies was not given prominent role in the
strategic plans. Even under Right To Education Act of 2009, the responsibilities were placed on the local governments without specifying whether local governments represent the bureaucratic wing of the education department or locally elected panchayats or ward committees respectively, in rural and urban context.

Hence the dynamic nature of the educational scenario with its own demand and supply factors operationalized through contending state agencies needs to be analysed with a view to identify factors affecting equality in educational outcome, based on human geographical and socio-economic categorisation of the population. Such a study should lead to evolving alternative strategic plans for equal educational opportunities which can be more effective and efficient.

1.6. Statement of the Problem

Till 1976, five year plans of the Central government had very marginal role to play in developing the education sector. Education was on the list of the responsibilities of the state governments. Even after the responsibility was brought under concurrent list, as Indian government was passing through political instability and public finance crisis, the Central government could allocate only marginal sums for development of education, as funds were required for short term remedies to ameliorate the sufferings of poverty stricken population segments. National attention came to be focussed on education in 1986 amid the melt down of the country's socialist oriented state controlled planned development of the economy. Subsequently the National Plan of Action (POA) on education implemented in 1992 focused on ensuring a package consisting of a minimum number of two teachers, a set of teaching-learning materials in the form of Mathematics and Science kits- proto type prepared by NCERT and required to be replicated by the States with central grants, and orientation training for primary teachers in schools all over India in a cascade model under the leadership of NCERT. POA also stipulates that lower primary school should be available in every habitation having a population of 300 or more in plains and 250 or more in hilly regions. Similarly, Right to Education Act, stipulated that an upper primary school should be within 3 km radius of a habitation. Also, all development programmes should strictly follow the habitation –population norm in opening new government elementary schools 1992 onwards. In many states including West Bengal, it so happens that habitations are based on caste structure of the locality and different
castes live separately but within a small geographical radius. Thus, habitation as unit of school provision tends to institutionalize the undemocratic caste system. The inability of finding qualified teachers and often the inability of states in committing long term funding required for appointing qualified teaching cadre, alternate models of schooling like learning centres in Madhya Pradesh, Shishu Shiksha Kendra in West Bengal (with less qualified teachers on contractual basis) became a quick fix approach to ensure universal enrolment and also distribution of midday meal as an incentive to make children attend school on more regular basis. Almost all regular primary schools got two teachers each, under the District Primary Education Programme implemented in selected districts during the years 1993-94 to 1999-2000, and under the Sarva Shiksha Abhiyan implemented in the years 2001 - 2009 in different parts of the country including West Bengal. Even though the 93rd and 94th amendments to the Constitution has legitimised the elected local bodies as local governments vested with the responsibility for school education, their role in planning and managing school education has remained notional and much of such functions still vest with the educational bureaucracy.

Thus, the uniformly applied norm-driven approach focusing on quantitative expansion of primary education under the supervision of bureaucratic educational structures might have resulted in taking schools to the children within or nearer to their locality. Children attending such schools invariably belong to weak and marginalized sections of the population in both rural and urban areas. But such schools are intrinsically unsuitable for delivering equitable school outcomes to the children enrolled in them. This is because such schools are not equipped to deliver the spirally graded curriculum to single year age groups. In order to follow the curricular arrangement a primary school requires four rooms and four teachers along with other sanitary infrastructure. Since the economics of teacher deployment requires at least 45-50 children in each grade at primary stage, most of the habitations lack sufficient population base (1500-2000 based on population growth recorded from 1991 census onwards). Therefore, these schools will have nil chance to qualify for appointing four teachers and corresponding infrastructure. Hence one need to critically examine the interaction of bureaucratized planning and implementation, and come up with some alternate paradigm of planning and management of elementary education in both in rural and urban areas.
1.7. The study area and justification for its selection

The state West Bengal has been selected as the study area largely due to its unique historical, political, cultural and educational background. The present capital of West Bengal, Kolkata was the capital of British India during the early part of British rule in India. After independence West Bengal was one of the most economically developed state in India for quite some time, but a series of events including Indo-Pakistan war and formation of independent Bangladesh, violent ultra left movement, collapse of jute industries, labour unrest, etc. shattered the state’s economic foundation. Literacy rate in West Bengal was always higher than the all-Indian average, but in the last decade, improvement in literacy rate became relatively slow especially female literacy. According to the Educational Development Index (EDI) which helps the state governments to evaluate where they lag behind and which areas need priority intervention, West Bengal ranked 32nd out of 35 States and Union Territories on all four parameters — access, infrastructure, teachers and outcomes in 2013-14. Studies reveal that the state faces serious problems in regard to access to primary schools by rural communities. The major concerns raised by researchers (Banerjee & Roy, 2003; Dreze & Goyal, 2003; Khan, 1993; Ramachandran, 2000; Rana, Das & Rafique, 2003), in this regard are: lack of basic infrastructural facilities with nearly one fifth of all schools without physical buildings at all or are one-room schools, schools lacking toilet facilities for girls and teaching staff, school buildings with only natural light and often without electricity, etc. Moreover, according to DISE (District Information for School Education) Flash Statistics, 2013-14, West Bengal is the only state in the country that has a primary to upper primary schools ratio of 4.40, lowest Retention Rate at primary level (60.77), highest Repetition Rate (4.58) and Dropout Rate much above the national average (6.30). Such a dismal state of affairs even after more than six decades of planned development guided by National Policy of Education and implemented through of Central and State partnered programmes, raises questions about the efficacy of the strategies followed.

Since inequalities in educational opportunity are viewed from the point of geographical and social characteristics and its relation to educational outcome, the South 24 Parganas district has been selected as the study sample as contrasting geographical and socio-economic characteristics are found across its constituent blocks. South 24 Parganas is a district with multi-dimensional complexities; the
region has two distinct geographical regions - half of the district is forested region (Sundarban mangrove forest) and the other half is non-forested region. Apart from its huge size and large population, its unique topography with Kolkata metropolis at one end of the district and under-developed Sundarban mangrove forest on the other end, makes the region problematic in several aspects of development. According to the West Bengal Human Development Report (2004), the Sundarban region has a high percentage of religious minorities, disadvantaged social groups and scheduled caste population. Hence the district is unique in terms of geo-social characteristics (Figure 1.1).

The present research attempts to critically examine the policy in action through an empirical study. Some basic questions influencing this study are:

i. What is the status of elementary education at present in different geographical and social category of regions of West Bengal in the light of plans and programmes implemented in the State after National policy of Education became a guiding force?

ii. What may be the most crucial mediating factor emerging out of the norms driven implementation of starting and equipping primary school with infrastructure and deployment of teachers leading to differential outcomes?

iii. Is it possible to propose an alternative policy with more efficient and cost effective norms for deployment of school personnel including teachers and other infrastructure resulting in more equitable and higher levels of overall school learning outcomes?
Figure 1.1: Location of the Study Area

WEST BENGAL IN INDIA

SOUTH 24 PARGANAS DISTRICT IN WEST BENGAL

SOUTH 24 PARGANAS DISTRICT

Source: NATMO and Survey of India
1.8. Objectives of the Study

In the light of the foregoing discussion the broad objective of the study are summarized as follows:

1. To analyse the spatial distribution of primary and upper primary schools in different geographical regions with a view to examine access.

2. To examine the trend of involvement in school education amongst the different population segments in different geographical regions.

3. To assess the overall outcome of education in primary and upper primary schools.

4. To correlate the spatial spread of schools, educational outcome with socio-economic factors influencing access to schooling.

5. To identify the barrier for access to elementary schooling in different geographical regions.

1.9. Data and Methodology

Keeping in mind the above objectives, the present study entitled ‘Access to Schooling in West Bengal: A Geo-social analysis' analyses data on various facets of elementary education in the state of West Bengal obtained through secondary sources at the state level. The analysis is supplemented by a case study of one district in the State using both secondary and primary data.

1.9.1. Operational Definitions

- **Access to schooling** – the term ‘access to schooling’ refers to the opportunity provided to complete elementary education and the attainment of essential levels of learning as expected after completing elementary education curriculum. The completion implies enrolment, attainment and learning objectives mandated by the Right To Education Act, 2009.

- **Geo-social Factors**- the term refers to human geographical variations and socio-economic categorisation of population in the state of West Bengal. The human-geographical categorisation involves different geographical regions comprising the state of West Bengal like northern Himalayan region, middle Gangetic plain, plateau region and southern delta region.
Social categorisation of West Bengal refers to categorisation of the district with reference to variation in the percentage of Muslim population, variation in the proportion of Scheduled Castes and Scheduled Tribes and variation in the level of agricultural and cultivation activity. The analysis uses Educational development indicators, literacy rate, Gross Enrolment Ratio, Net Enrolment Ratio, infrastructure index and learning levels as criteria to relate with geo-social variables.

The variations in geo-social indicators are categorised as high, medium and low using the state average, as follows:

i. **Categorisation based on Minority population**: The proportion of state average of Muslim population is 27.01 percent. Districts are categorised as high when Muslim population of the district is greater than 27 percent, medium when the Muslim population of the district varies between 22-27 and low when the Muslim population is below 22pc.

ii. **Categorisation based on Scheduled Caste population**: The proportion of SC population in the state is 23.51 percent. The districts are categorised as high when the Scheduled Caste population of the district is 25 percent, medium when the Scheduled Caste population is 15-25 percent and low when the Scheduled Caste population is below 25 percent.

iii. **Categorisation based on Economic Criterion**: Economic criteria are based on proportion of population engaged in agriculture and cultivation activities. The proportion of state average of people engaged in agriculture and cultivation activities is 44 percent as per 2011 census. Districts with more than 60 percent population in agriculture and cultivation related activities are considered as high, between 30-60 percent as medium and below 30 percent as low level districts.

The State level analysis is supplemented by the case study of 24 South Paraganas comprising distinct forested and non forested regions. Finally, field data from a sample of primary schools selected from 22 sample panchayats (eleven each from the forested and non forested regions) of 24 South Paraganas is used for the comparative analysis in this study.
1.9.2. Sample

The Indian state of West Bengal became the natural choice as sample for the study because of the geographical and socio-economic diversity of the State. District is taken as the unit of analysis and the relevant data on educational development along with socio-economic and demographic characteristics of the district obtained from secondary sources forms the basis of analysis in this study. Similarly South 24 Parganas district in the state was selected as the sample district for detailed primary and secondary data collection.

The sample consists of Community Development blocks selected from South 24 Parganas district. The district has two well defined geographical areas- forested blocks (thirteen blocks) and non-forested blocks (sixteen blocks). Out of these twenty nine blocks, four blocks with differing geographic characteristics have been selected. The 4 blocks include two blocks each from non-forested and forested regions in the district. These blocks are Diamond Harbour-I and Magrahat-I block from non-forested region and Basanti and Mathurapur-II block from forested region. From the blocks so selected, 11 panchayats were randomly selected and 31 schools located in the selected panchayats formed the sample for collecting information about teachers, infrastructure, enrolment, attendance and schools outcomes of the students along with qualitative data from block level educational officers, panchayat functionaries, teachers and parents.

To record the location of schools (latitude and longitude for plotting on map), find out the distance between and among schools and to cross check the DISE data with ground level reality, all the schools in the sample panchayats were visited by the researcher (total 201 schools including private schools).

Further, the tests were conducted from 31 government schools covering 401 students who were present on the day of school visit. Out of 401 students, social background information was collected from 321 student’s parents.
Table 1.1: Sample Size and Design

<table>
<thead>
<tr>
<th>Unit</th>
<th>Sample Size</th>
<th>Geographical Distribution</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>District</td>
<td>South 24 Parganas</td>
<td></td>
<td>Purposive</td>
</tr>
<tr>
<td>Block</td>
<td>4 (15% of all blocks)</td>
<td>2-Forested Blocks 2-Non-forested Blocks</td>
<td>Purposive</td>
</tr>
<tr>
<td>Panchayat</td>
<td>11 (23-27% from each block)</td>
<td>6-from Forested Block 5-from Non- Forested blocks</td>
<td>Random</td>
</tr>
<tr>
<td>Schools</td>
<td>201 (All elementary Schools of 11 panchayat for recording location)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>31 (17%-30% from each panchayat for administering Test)</td>
<td>16- from Forested blocks 15- from Non- Forested blocks</td>
<td>Random</td>
</tr>
<tr>
<td>Students</td>
<td>401 (All class IV students who were present on the day of visit)</td>
<td>Forested region N= 210 Non-forested region N=191</td>
<td>-</td>
</tr>
<tr>
<td>Parents</td>
<td>321 (who were present on the day of interview)</td>
<td>Forested region N= 177 Non-forested region N=144</td>
<td>-</td>
</tr>
</tbody>
</table>

1.9.3. Sources of Data

Quantitative as well as qualitative data for the study have been collected from both primary and secondary sources. Different sources of data used in this research are-

i. Data used for State level analysis

Data obtained from sources like State Report Card, Flash Statistics and District Report Card (DRC) published by the District Information System for Education (DISE) is used in this study to assess the participation, infrastructure and teachers’ position. Similarly, data from sources like the West Bengal Sarva Siksha Abhiyan Annual Report, Annual Report of Department of School Education and Annual Report of West Bengal Panchayat & Rural Development Department was collected for analysing participation and dropout related variables. In order to classify the districts at state level into different geo-social categories, census data related to population distribution over a period of time, social category, literacy rate and distribution of workers was collected from census reports, namely primary census abstracts, socio-cultural tables and District Census Handbook. For analysing outcome across districts data from National Achievement Survey published by National Council of Educational Research and Training (NCERT), ASER Report published by Pratham (an NGO) and Utkarsha Abhijan Report published by Department of School Education, West Bengal is used in the study. The data on district wise Educational Development Index was taken was obtained from the West Bengal Human

**ii. Data used for Sample District**

For analysing participation, retention, dropout of children and analysing school infrastructure and teachers in school across the sample district, DISE School Report Card data is used in the study. Data on population and its distribution across habitations within each panchayat obtained from Census tables is used for analysis in this study.

**iii. Data used for Analysing sample Panchayats, Schools and children**

The data for analysing sample Panchayats, schools and children of that panchayat was collected from primary sources by questionnaire surveys, interviews and observation by field visits.

Data regarding panchayats, number of habitations in them, population and area is sourced from Census tables. Information regarding sample schools like class room, toilet, black board and other physical infrastructure and information regarding teachers was collected through an inventory of the sample schools.

Data regarding individual children, their performance and background characteristics was collected by administering a teacher-made test and interview with their parents. The present research did not use the data published by large scale national level assessments like ASER, National Achievement Surveys or Utkarsh Abhiyan to understand the scenario of learning outcome at micro level and to relate it with the geographical and social background of children. Further ASER tests were administered at student’s home and so correlating school background and student background with respect of test score is not possible. Similarly NAS test and Utkarsh Abhiyan test were administered at school, but these surveys do not collect background information of students.

Perceptions and views of stake-holders about the learning outcomes of elementary education such as educational functionaries, local level leadership, resource teachers regarding schooling were obtained through Interviews. Opinion of the other stakeholders like teachers and parents was also obtained through Focus Group discussions.
1.9.4. Tools for Data Collection

Both qualitative and quantitative data have been used for the study. The study has used a combination of teacher-made test for children, interview schedule for parents, semi-structured interviews with education officers and local level elected members and Focus Group Discussions with stakeholders for obtaining qualitative and quantitative data on student-outcomes.

i. Teacher-made Test

An achievement test was designed to evaluate numeracy and language (Bengali) skills of students of class IV, which is the terminal class of primary education in West Bengal. The tests were meant to measure the competencies achieved by students in language and mathematics across schools of different geographical areas and questions for the tests were drawn up and reviewed by a group of experienced government primary school teachers. The exercises in the test were based on class III curriculum of West Bengal Board of Primary Education, and administered to class IV students. In fact, the questions for the test were so designed to see whether the student has achieved the level of mathematical and language skills that a student should learn at grade III. In mathematics the major areas in the learning competencies were – to understand the whole numbers and numerals, addition, subtract, multiply and divide the whole numbers, ability to solve simple problems of everyday life like units of money, weight, capacity and time etc. In language, the major dimensions of learning competencies included are- ability to read, write and understand the words, make sentences with commonly used words, knowledge about the synonyms and antonyms of single words reading a story and answering question based on it etc. No teachers were allowed in the test hall to help the children. Students were given 45 minutes for each subject (See test questions in Appendix B).

ii. Interview Schedule

A structured household interview schedule was developed to collect background information of the children who had been given the test (Appendix C). Through this interview schedule, information of socio-economic background, parental background, background characteristics of siblings and parental opinion on child’s education was collected. The interview schedule enquired about the information on socio-economic background of parents such as caste, religion, occupation, income etc. Data on nature
and size of family, number of children, and their educational qualification was also collected. Details like educational qualification of both of the parents and their children were also obtained through the household interview schedule, which also enquired about regularity of child at school, parental participation in school meeting, child having mid day meal at school or not etc.

iii. Semi-structured Interview

Semi-structured interview schedules were used to capture the perception of the functionaries of Block Resource Centres (Sub-Inspector of Circle for regular primary school and Academic Supervisor for SSKs), Cluster Resource Centres (Resource Teachers) and Panchayat Pradhan (Head) or secretary regarding their role with respect to enrolment, retention and learning outcomes of children in their jurisdiction. Questions were also asked about the ways new schools are opened, teacher deployed, monitoring and supervision of schools etc. in their respective areas. Topics related to enrolment, retention and outcome were taken up and their explanation obtained.

A checklist was prepared to elicit information about connectivity, population and number of schools etc. in each of the panchayats.

iv. Focus Group Discussion

Focus Group Discussions (FGD) were carried out in each panchayat with a view to elicit the opinion of stakeholders regarding the findings of this study. FGD were held with the teachers and the parents. One FGD with teachers was organised at block level where the teachers were assembled in a training programme. Remaining FGDs were held in schools with 3 or 4 teachers. One or two FGD with 4 to 5 parents were held in every sample panchayat.

Reasons behind the low performance of the students, problems faced in teaching-learning, parent’s cooperation, higher official’s involvement, suggestions for better outcome etc. were the issues discussed in the FGD with teachers. Similarly, causes of low performance of children, parents' expectation from schools, whether they are satisfied with schooling or not etc. were the issues discussed in the FGD with parents.
Table 1.2: Number of Respondents at the Block level/ Panchayat level and Designations

<table>
<thead>
<tr>
<th>Level</th>
<th>Designation</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block</td>
<td>Sub Inspector (regular primary school)</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Academic Supervisors of (Shishu Shiksha Kendra)</td>
<td>3</td>
</tr>
<tr>
<td>Panchayat</td>
<td>Panchayat Pradhan/Secretary</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Teacher (Focus Group Discussion)</td>
<td>14 (56 teachers)</td>
</tr>
<tr>
<td></td>
<td>Parents (Focus Group Discussion)</td>
<td>31 Groups (5/6 parents per group)</td>
</tr>
</tbody>
</table>

v. School Quality Indicator Checklist

School Quality Indicator Checklist gathers information regarding physical infrastructure input in schools, teachers’ capacity and nature of student’s participation. This checklist rechecks the secondary data published by DISE School Report Card. The school quality indicator includes the following parameters:

a) Physical facilities - availability of school building, type of school building, condition of school building, total number of class rooms, school distribution according to enrolment size etc.

b) Ancillary facilities – safe drinking water, electricity connection, toilets, (separate toilets for girls), play ground, school boundary, first aid kits, etc.

c) Teaching-Learning Facilities – educational kits like black board, text book, library, games equipments, etc.

d) Enrolment.

1.9.5. Mode of Analysis

1.9.5.1. Statistical analyses

Both descriptive and inferential statistical methods are used in the study at the state level and district level analysis. The descriptive statistics are provided in the form of tables and graphs to obtain the trend of changes in the indicator values. Descriptive statistics also includes mean, standard deviation and coefficient of variation to compare and correlate the changes in the indicators of educational access at different points of time. The association between different parameters of the study are done through chi-square test.
1.9.5.2. Qualitative data analysis
The method adopted for qualitative analysis was in accordance with the procedures of content analysis; the notes made during interviews, observations, encounters and focus group discussion with the stakeholders on the status of elementary education was subjected to qualitative analysis to cross out errors.

1.9.6. Terms and concepts used in the study

Some of the key terms and concepts used in the study are defined below:

1.9.6.1. Programmes and Policy
   a. Universalization of Elementary Education (UEE)
      Universalisation of elementary education is the goal of all nations. It has four main parameters universal access, enrolment, retention, and qualitative education up to the age of 14.

   b. Right To Education Act
      The Right of Children to Free and Compulsory Education Act or Right to Education Act (RTE) is an Act of Indian Parliament enacted on 4 August 2009. The Act makes education a fundamental right of all children between the ages of 6 and 14 and defines basic norms in elementary schools.

   c. No Detention Policy
      The no-detention policy was introduced as a part of the Continuous and Comprehensive Evaluation (CCE) under the Right to Education Act (RTE) in 2010. According to this policy, students in elementary schools (up to class VIII) are automatically promoted to the next class without being held back even if they do not get a passing grade.

1.9.6.2. Population and Settlement Structure
   a. Habitation Pattern
      According to National Institute of Educational Planning and Administration (NUEPA) definition, ‘a habitation is a distinct cluster of houses existing in a compact and contiguous manner with a local name having a population of not less than 25 persons in plain areas and not less than 10 persons in hilly or sparsely populated areas’. In the present study, habitation is further divided into SC/ST habitations where
SC/ST dominated habitations are those habitations in which the Scheduled Caste population is equal to or more than 40 percent of total population. ST dominated habitations are those habitations in which the Scheduled Tribes population is equal to or more than 40 percent of total population.

b. Gram Panchayat
A Gram Panchayat according to Panchayati Raj classification is a group of villages with a population of not less than 500. Panchayati Raj system is a three-tier structure in the state of West Bengal, under which the smallest unit is called a Gram Panchayat, which is the Panchayat organization for a collection of villages. The block-level organizations are called Panchayat Samiti, and the district-level organizations are named Zilla Parishad (Section 9, 94 and 140 of West Bengal Panchayat Act, 1973, Department of Panchayat and Rural Department, West Bengal).

c. Block
There are two types of blocks: (a) Educational Blocks, and (b) Community Development Blocks. Educational Blocks are demarcated by the State Education Departments. Community Development Blocks are administrative divisions of districts termed differently in different areas in the country (e.g., tahsil, taluka, community development (CD) block, Mandal, revenue circle, etc.).

In the present study, blocks are divided on the basis of geographical features, i.e. forested and non-forested. The sample region has two segments with distinct geographical features within the block. Hence, the region has been sub-divided into forested and non-forested regions according to district administration classification (Office of the District Magistrate).

d. School-Age Population
School-age population is defined as the population in the age group 6-13+ years. This age group is the elementary school age group of which 6-9 years population is primary school age population and 10-13+ years population is the upper primary school age population in India.

e. Density of Population
Population density is the number of people per square kilometre.
1.9.6.3. Elementary School Structure

a. Primary School and Upper Primary School

Primary schooling in West Bengal is from Class- I to IV, and upper primary schooling is from V-VIII. Upper primary schools are also termed as Junior High school.

b. Regular Primary School and Shishu Shiksha Kendras

Primary education in West Bengal is imparted through two types of government schools - regular primary schools (also termed Free Primary school) run by Department of School Education, Government of West Bengal and (ii) Shishu Shiksha Kendras (SSK) run by the Panchayat & Rural Development Department. Shishu Shiksha Kendras were established in 1999 to bring the underprivileged children into the fold of the primary schooling system in those areas where there was difficulty in accessing the regular primary schools. The Shishu Shiksha Kendra teachers are called ‘Sahayiakas’ and they are low-paid and less-trained compared regular primary teachers.

c. Resource Teacher

Resource teachers are posted at the block or cluster level to oversee a group of schools where children with special needs are enrolled and also the overall learning process.

1.9.6.4. Inputs for Physical Access

Physical Access to schools is measured in this study by using the indicators of availability of schools, nature of roads, density of schools per sq km, schools per 1000 population, Spatial pattern of school within gram panchayats, etc.

Similarly, availability of schools is measured through the number and percentage of villages that have access to primary and upper primary schooling facilities within the distance as prescribed in the policy. As per RTE norm, the prescribed area for setting up of a primary school is within a walking distance of 1 km and an upper primary school is within a walking distance of 3 km of the neighbourhood. West Bengal has since modified the area or limit of upper primary school to 2 km. (Kolkata Gazette (Extraordinary, March 16, 2012; No.323-SE (Law)/ES/S/1A-01/2009). As per the prescribed population norms for opening
schools, habitations with 300 and above population should have one primary school and those with 500 and above population should have one upper primary school.

Nature of roads is described by material used in making the road. As per census definition, a road is termed as Pucca Road (Black-Topped) when it has bituminous covering and is approachable both in fair and foul weather. Semi Pucca road is a road constructed using well compacted crushed rock or gravel material (coarse sand, small stones), which is fairly resilient and does not become slippery when wet. Kuchha road is described as mainly mud road for the use by pedestrians and in some cases bicycles.

Density of schools per sq km is measured by number of schools per sq km. Schools per 10000 population means the number of primary and upper primary schools per ten thousand populations.

Spatial pattern of schools can be seen from the map of all sample panchayats. There are about 201 schools (all elementary schools) in the sample panchayas. All the schools were visited and the coordinates (latitude and longitude) noted through GPS instrument. Later the schools were plotted on geo-referenced map of all panchayat through MapInfo software. The roads connecting schools were also observed and noted.

1.9.6.5. Inputs in School Efficiency

a. Gross Enrolment

‘Gross Enrolment is the total enrolment of pupils in a grade or cycle or level of education, regardless of age, in a given school year’ (NUEPA). It is calculated by the following method:

$$\text{Gross Enrolment Ratio (GER)} = \frac{\text{Total enrolment in Grades I-IV}}{\text{Population of ages 6-10 years}} \times 100$$

b. Net Enrolment

‘Net Enrolment is the number of pupils in the official school age-group in a grade or cycle or level of education in a given school year’ (NUEPA). The calculation process is as follows:

$$\text{Net Enrolment Ratio (NER)} = \frac{\text{Enrolment in Grades I-IV/ 6-10 age groups}}{\text{Population of ages 6-10 years}} \times 100$$
c. **Retention Rate**
Retaining capacity of schools is in the study area is derived by subtracting the enrolment in Grade I four years back (say 2009-10) from enrolment in Grade IV (minus Repeaters) in a year (say 2013-14). Retention rate is based on enrolment data over a period of four years (in West Bengal, Grade IV is the terminal level in primary education). It is calculated by the following method by DISE:

\[
\text{Retention Rate (RR)} = \frac{\text{Enrolment in Grade IV in the year} \text{`}t+3’ - \text{Repeaters in Grade IV in the year} \text{`}t+3’}{\text{Enrolment in Grade I in the year} \text{`}t-3’} \times 100
\]

d. **Transition rate**
The formula for calculating transition rate is given below:

\[
\text{Transition Rate (t+4)} = \frac{\text{Enrolment in Grade V in Year} \text{`}t+4’ - \text{Repeaters in Grade IV in Year} \text{`}t+4’}{\text{Enrolment in Grade I in Year} \text{`}t’} \times 100
\]

e. **Dropout Rate**
The percentage of students failing to complete a particular grade is known as dropout rate. It is calculated by the following method by DISE:

\[
\text{Dropout Rate} = \frac{\text{Number of student’s dropping out from Grade } g \text{ in year } t}{\text{Total number of students in Grade } g \text{ in year } t} \times 100
\]

f. **Stagnation Rate**: Stagnated students are those who continue to remain in one class for more than a year or the prescribed course is not completed within the allotted time. It is calculated by- Stagnation rate = Retention – Dropout

g. **Pupil Teacher Ratio**
Pupil-teacher Ratio denotes the relationship between the number of students enrolled in a school and the number of teachers recruited by the school, district, or system.

\[
\text{People Teacher Ratio} = \frac{\text{Total enrolment in schools of primary category}}{\text{Total teachers in schools of primary category}}
\]

h. **Student Classroom Ratio**
Student Classroom ratio indicates the number of students per classroom

\[
\text{Student Classroom Ratio} = \frac{\text{Total enrolment in primary schools}}{\text{Total classrooms in primary schools}}
\]

i. **Per Pupil Teacher Cost**
Per Pupil Cost is computed by dividing teacher’s salary of each school by number of students.
j. **Access Index**
Following NUEPA’s method, Access index is calculated by taking the variables of percentage of habitations not served (negative indicator), number of schools per 1000 population (positive indicator) and ratio of Primary to Upper Primary Schools/Sections at Upper Primary level only (negative indicator).

k. **Infrastructure Index**
Following NUEPA norms, the present study has calculated infrastructure index at the district level. The index has been prepared in conformity with the procedure of Educational Development Index given by NUEPA and using Principal Component Analysis (EDI, NUEPA, 2009). Infrastructure index has been calculated for all districts of West Bengal using nine criteria. The indicators so used are percentage of single classroom schools, percentage of schools with girl’s toilet, percentage of schools with boys toilet, percentage of schools with electricity, percentage of schools with computers, percentage of schools having kitchen-shed, percentage of schools with drinking water facilities, percentage of schools with student-classroom ratio 30 for primary level and 35 for upper primary level. The infrastructure index at block level was also prepared with more variables, i.e. by adding library, playground and blackboard to the others.

l. **Teacher Index**
Following NUEPA, the present study has also calculated Teacher index at district level. This was done as per the procedure followed by NUPA for calculating Educational Development Index, and using Principal Component Analysis (EDI, NUEPA, 2009). The indicators so used are percentage of schools with female teachers (2 and more), percentage of schools with PTR above 30 at primary level and above 35 at upper primary level, percentage of single teacher schools and teachers with professional qualification.

m. **Educational Development Index (EDI)**
The EDI calculated by the NEUPA for all the states in India and published in DISE data is used in this research. The four components of EDI are Access, Infrastructure, Teacher’s and Outcome. But district-level is not published by NUEPA.
For district level EDI index was obtained from the EDI prepared by Planning Commission, Government of India, which had prepared an Education Development Index for different Districts of West Bengal based on the UNDP methodology of assigning 2/3 weights to total literacy and 1/3 weights to gross enrolment index.

1.9.6.6. Measuring Household Efficiency

a. Amenity Index

Amenity Index for this study has been prepared by grouping together the variables like types of house, having electricity at home and having drinking water source at home collected through primary survey. The variables are weighted in the following manner: Type of house: Pucca-3, partially pucca-2, kuchha-1; Having electricity: Yes-2, No-1; Having drinking water facility at home-Yes-2, No-1. Summation of above said variables are used as amenity index.

1.10. Limitations of the Study

The study is limited to the rural areas of West Bengal and urban areas are excluded. Only elementary stage of education of children that is 6-14 years age group is considered in this study as the focus area. Field level case study of panchayats focuses only on participation in primary schools.

1.11. Presentation of the Study

The study is organised in seven chapters. In the first chapter, introduction, need and importance of the study, objectives, methodology, scope and limitations of the study have been explained. Chapter two is devoted for the reviews of the related literature. The third chapter presents the macro data relating to elementary education in West Bengal. The fourth chapter presents an analysis of school access and participation in South 24 Parganas district of West Bengal with special focus on the sample blocks. Chapter five is devoted to presentation of educational outcome and its relation to socio-economic background of the students, as revealed by primary data. Chapter six presents the analysis of spatial location of schools in the study area and also stakeholder’s perception about physical access, participation and outcome of elementary school age children. Chapter seven concludes with findings of the study, conclusions, and policy recommendations for an alternative schooling system.