CHAPTER IX

CONCLUSIONS & SUGGESTIONS
SUMMARY CONCLUSIONS

(9.1) **Introduction:**

The aim of education is to develop the capacities and abilities latent in human nature and to coordinate them for the enrichment and progress of the human being. Education is desired for itself as it opens up a vast world of opportunities and ideas to the person for the progress and development. Therefore, every country of the world maintains a large number of educational institutions. Senior Secondary Education is a crucial stage in the educational hierarchy as it prepares an individual for higher education and also for the world of work. It covers the population of the age group of 14-18, which constitute 9.69 crore children in India as on March 2007. Senior secondary education in India has witnessed phenomenal growth in terms of the senior secondary schools and enrolment size since Independence. East Delhi has also shown unprecedented growth of this bridge level of education during this period. Even though large expansion in education is obviously desirable, resource constraints hamper this expansion. Economists of education have to search for models which can yield more and more economies in imparting the senior secondary level of education by different types of schools for different streams. In order to rationalize the expenditure on senior secondary education, it is essential to gain insight into the cost structure of education, both in private cost and institutional cost.

Since resources are scarce, it is also desirable to examine how far the existing resources are being efficiently utilized at the institution level. The institutional cost analysis facilitates the estimation of operational cost of an educational institution as a whole as well as cost at different levels, by types and streams of education, which in turn is useful for planners to allocate budget and plan the resources for education. As the resources allocated goes on a steady
decline, the demand goes on increasing at rapid rate. After grading system in Secondary examination of Central Board of Secondary Education (CBSE) more students are qualifying for admission to Senior Secondary classes, which in turn will increase the demand further. Various estimates of institutional cost of education in India have been completed by different researchers in the field of elementary education and higher education. Much research has not been done at Senior Secondary level of education for estimating the Institutional Cost and Private Cost of different streams offered in the schools managed by different organizations. This study is an effort to fill this existing gap.

(9.2) **Methodology:**

An attempt has been made in this study to examine the institutional cost and private cost of education at senior secondary level by types of schools being managed by different set of managements in East-Delhi. The Government of Delhi is spending about 10 percent of its total plan allocation on Education sector and still having 81.67 percent literacy rate. At Secondary/Senior-Secondary stage only 54.95 percent students were enrolled in March 2007 and remaining was out of education-system. In East-Delhi, senior secondary education of different streams i.e. Arts, Commerce, Science and Vocational is provided by Government schools, Government-Aided schools, Rajkiya Pratibha Vikas Vidyalyas (RPVVs), Kendriya Vidyalyas (KVs) and privately managed Public schools. A total, 214 Government schools, 22 Government-Aided schools, 4 RPVVs, 4 KVs and 362 Public schools are imparting education in East-Delhi. The facility of senior secondary classes and all the streams of education are not available in all these schools. Total 14 schools of East Delhi consisting of 03 Government schools, 03 Public schools, 02 Pratibha Vikas Vidyalyas, 02 Government-aided schools and 04 Kendriya Vidyalyas for micro level study were identified on the bases of availability of all the streams as the universe of the study.

Costs of education are borne at two domains – the Institutions and the Households. Institutional cost may be defined as the aggregate of all expenses incurred by an institution in providing the education. It includes all the expenditure incurred by the Institution such as Salary Cost and Non-Salary Cost. Salary Cost includes Teaching Cost, Non-Teaching Cost and Inspection Cost. Non-Salary Cost includes cost of supports services (academic), cost of supports services (other than
academic) and cost of co-curricular activities. For estimating the institutional cost, the information/data pertaining to total school enrolment, senior secondary enrolment, result, salary of teaching and non-teaching staff, inspection staff, number of teachers teaching different subjects, expenditure on infrastructure, expenditure on co-curricular activities etc were collected through a well-designed questionnaire. For the purpose of calculation of Teaching Cost, total salary of all the subject-teachers teaching senior secondary classes have been divided from the number of total enrolled senior secondary students learning the subjects of opted streams from these teachers. For estimating the Non-Teaching Cost, the total salary of non-teaching staff and supporting staff have been divided by the number of total enrolment of school, since all the students from class first to twelfth are availing the services of non-teaching and supporting employees. The supervision and inspection of schools is done at Zonal, District, Regional and Central (Directorate) level. The Inspection Cost has been calculated on the basis of total enrolment proportion at zonal, district, regional and central level. The cost of supports services (academic), cost of supports services (other than academic) and cost of co-curricular activities have been worked out after dividing the total expenditure from the number of total learners. By adding the Salary cost and Non-Salary cost, the Institutional Cost has been worked out. For estimating the private cost, data on expenditure incurred by the parents/household on different heads like school fee, funds, fines, uniform, transportation, books, mobile, tuition/coaching etc were collected through a questionnaire from the 6,336 students of Arts, Commerce, Science and Vocational streams, studying in Government Schools, RPVVs, Government Aided Schools, KVs and Public Schools.

(9.3) **Major Findings:**

The cross section analysis of institutional cost (Table 5.5) of Arts stream has indicated that annual cost of operating a seat at senior secondary level is Rs.64609, highest in RPVVs in all the schools. It is more than double of Government schools (Rs.32134) and more than two and half times of Public schools (Rs.24801). Salary cost accounts more than 86 percent of institutional cost for Government schools and Government-Aided schools. It is more than 91 percent for Rajkiya Pratibha Vikas Vidyalyas and Kendriya Vidyalayas. However, Public schools spend only 70 percent on salary of their institutional cost. They spend more than 11 percent of
their institutional cost on Co-curricular activities against 3.63 percent in RPVVs. Further, analysis of institutional cost of Commerce stream (Table 5.6) indicates that salary cost for Commerce stream varies from 64.99 percent to 93.05 percent of institutional cost for different schools. It is 80.34 percent, 86.63 percent, 86.85 percent, 93.05 percent and 64.99 percent for Government schools, Government-Aided schools RPVVs, Kendriya Vidyalayas and Public schools respectively. Public schools spend more than 13 percent of their institutional cost on Co-Curricular activities which is highest in all the schools. They also spend more than 20 percent on the Support Services (other than Academic), which is more than four times of RPVVs.

Institutional cost as average of all the streams of RPVVs, Kendriya Vidyalayas, Government-Aided Schools, Government Schools and Public Schools is Rs.50810, Rs.36682, Rs.34769, Rs.27308 and Rs.21754 respectively (Table 7.1). Institutional cost of Rajkiya Pratibha Vikas Vidyalayas is higher because these schools do not admit more than 35 students in one section as a policy matter of Government of Delhi. The results of the study validate the hypothesis that the unit cost of senior secondary education is higher in Government Schools than in Public Schools. Thus the average institutional cost of education at senior secondary stage varies sharply between Public Schools and Rajkiya Pratibha Vikas Vidyalayas. Higher institutional cost of education of RPVVs is mainly due to lower student-teacher ratio as a consequence of admission policy of Government of National Capital Territory of Delhi (GNCT Delhi) not allowing admitting more than 35 students in any section.

Behavior of management of government schools administration does not differ significantly from that of the Public Schools in respect of mixing the faculties or teachers for effecting economies. If average enrolment size is taken as an index of popularity in a school where all streams are offered then Science emerges to be the most popular stream which is followed by Commerce. The establishment of either purely Science or Arts school does not find much favor with the managements of Public Schools. Mixing of facilities/papers/teachers reduces cost through the increase in enrolment size. Mathematics teacher of Science Stream is allowed to teach the subject to the Students of Commerce and Vocational stream. Sometimes senior secondary teacher is asked to teach the middle and secondary classes. More costly education of science stream too attracts
the Public Schools as there is rise in demand for science education at senior secondary stage. The expenditure on lab maintenance is higher in the Science stream where more supporting non-teaching staff is required to man the laboratories. Public Schools manage Arts, Commerce, Science and Vocational stream by the diversification of the subject mix which may be an effective planning to cope with higher cost of specialized stream. Institutional costs of senior secondary education in Science stream in Government schools, Government-Aided schools and Kendriya Vidyalyas, being higher among all the streams are mainly dominated by teachers’ salaries and salaries of Laboratory Assistants and also expenditure on Science practical in laboratories.

The study shows that Kendriya Vidyalyas spend 95.23 percent of institutional cost of Science stream on salary (Table 5.7). Salary cost for Science stream is 66.18 per cent of institutional cost in Public schools, which is significantly lower in all the schools. They also spend more than 18 percent of the institutional cost on the Support Services like electricity, water, building maintenance and medical facilities for students. Public schools spend more than 12 percent of its institutional cost on Co-Curricular activities which is more than four times of Kendriya Vidyalyas. The institutional cost of Science stream in RPVVs is Rs. 47533, which is more than double of Public schools (Rs.23022).

Analysis of institutional cost of Vocational stream (Table 5.8) shows that Salary cost of Vocational stream is lowest in all the streams taught in a school. Facility to study Vocational stream at senior secondary level is not provided to students in all the schools. Teaching cost of Vocational stream is very low because Vocational teachers are appointed on Part-Time basis in Government schools on a consolidated salary. Public schools also do not pay the salary to Vocational teachers like other subject-teachers. Salary cost of Vocational stream in Public schools is only 56.93 percent of its institutional cost against 78.08 percent in Government schools. Public schools also spend more than 15 percent of their institutional cost on Co-Curricular activities against the 11 percent in Government schools. The education of Vocational stream in Government schools at senior secondary stage is neglected. Government of Delhi neither appoints full-time Vocational teachers nor provides the better practical facilities in Vocational labs in its schools.
Private Cost is that part of the investment in education which is made either by the student or parent or both. Unit private cost as average of all the streams of Public Schools, Kendriya Vidyalyas, RPVVs Government-Aided Schools, and Government Schools is Rs.60026, Rs.34234, Rs.25075, Rs.21891 and Rs.20984 respectively.

The analysis of Private Cost of Arts stream (Table 6.1) indicates that more than 61 percent amount of Private Cost of Arts stream students is spent on tuition expenditure in Government schools. Students of Arts stream of RPVVs spend 44 percent amount of private cost on tuition. Government-Aided schools students also spend more than 54 percent of total Private Cost on tuition or coaching. The Private Cost of Arts stream of Kendriya Vidyalyas is Rs. 29061, which is highest in government managed schools. KV Students pay Vidyalaya Nidhi Fund to their school which is more than 17 percent of the total Private Cost. Parents spend Rs. 55676 for Arts stream education in Public schools. They spend about 70 percent on school fee, school development fee, school uniforms, school transportation etc. Further, it is surprising to find that Arts stream students of these schools spend less on tuition, then the students of Government-Aided schools.

The study shows that Commerce stream students in Public schools spend more on school fee, examination fee, school development fee, school trips/picnic, school uniform and school transportation etc, comparative to government managed schools (Table 6.2). Private Cost of education of Commerce stream students is Rs. 24342 in Government schools. Commerce students are spending more than 70 percent of private cost on tuition in Government schools, whereas students of Rajkiya Pratibha Vidyalyas spend only 47 percent amount of their private cost on tuition/coaching. Commerce stream students of Kendriya Vidyalyas pay Vidyalaya Nidhi Fund which is 13.36 percent of their Private Cost. Students of Public schools spend more for studying Commerce (Rs.57538) than Arts stream (Rs.55676). They spend more on tuitions for Commerce than Arts stream.

Analysis of Private Cost of education for Science stream shows that more then 70 percent of private cost is being spent on tuition/coaching in Government schools by the students of Science stream (Table 6.3). Students opting Science stream in Rajkiya Pratibha Vidyalyas spend more then 59 percent amount of their private cost on tuition. The Private Cost of Science stream of Kendriya
Vidyalyas (Rs.38256) is higher than the Government schools (Rs.25580). Students studying in Kendriya Vidyalyas spend more than 15 per cent of Private Cost on school transportation. Students of Public school spend Rs. 74185 for the study of Science stream, which is highest in all the streams and schools. They spend more than 75 per cent of private cost on school fee, school transportation and tuition of Science stream subjects. A parent, for educating their wards in Science stream in Public school, has to spend Rs.74185 about three times of private cost of Government school (Rs 25580).

The study shows that Vocational stream at senior secondary stage is opted by few students. Only few Government schools and Public schools in East Delhi offer the option of Vocational stream for students. The analysis (Table 6.4) shows that Vocational stream student has to spend Rs. 18355 as Private cost in Government schools. Students of public school spend Rs. 52703 on vocational education, which is more than two and half times of the students of Government schools. Students of Government school spend more than 58 percent of total private cost on tuitions of Vocational stream subjects whereas Public school student spend less than 10 per cent for coaching classes of Vocational subjects.

After having added the two components, unit institutional cost and unit private cost of senior secondary education, the total unit cost for Arts, Commerce, Science and Vocational stream offered in Government schools in East Delhi is Rs.47791, Rs.46305, Rs.60554 and Rs. 38514 respectively (Table7.3). Out of this 67.24%, 47.43%, 57.76% and 52.34% is spent by Government of National Capital Territory of Delhi for Arts, Commerce, Science and Vocational stream respectively as institutional cost. The remaining amount Rs. 15657(32.76%), Rs24342 (52.57%), Rs.25580 (42.24%) and Rs. 18355(47.66%) is spent by parents as private cost.

The total unit cost for Arts, Commerce and Science stream taught in Rajkiya Pratibha Vikas Vidyalyas in East Delhi is Rs.86410, Rs. 63221, and Rs. 78024 respectively. Out of this Rs. 64609(74.77%), Rs40288 (63.72%), and Rs.47533 (60.92%) is spent by Government of National Capital Territory of Delhi as institutional cost. The remaining amount Rs. 21801 (25.23%), Rs22933 (36.28%) and Rs.30491 (39.08%) is spent by parents as private cost for education of their wards for Arts, Commerce, and Vocational stream in RPVVs.
The total unit cost for Arts, Commerce and Science stream taught in Government-Aided schools in East Delhi is Rs.52700, Rs. 52685, and Rs. 64596 respectively. Out of this 62.4%, 64.1%, and 58.3% is spent by Government of National Capital Territory of Delhi as Aid to Aided schools managed by private trusts/societies as institutional cost. The remaining amount Rs. 19813 (37.6%), Rs18908 (35.9%) and Rs.26953 (41.7%) is spent by parents as private cost for Arts, Commerce and Science stream.

The total unit cost for Arts, Commerce and Science stream taught in Kendriya Vidyalyas in East Delhi is Rs.55053, Rs. 67860, and Rs. 89834 respectively. Out of this Rs. 25992(47.21%) Rs32475 (47.86%), and Rs.51578 (57.41%) is spent for Arts, Commerce and Science stream by Kendriya Vidyalaya Sangathan as institutional cost. The remaining amount Rs. 29061 (52.79%), Rs35385 (52.14%) and Rs.38256 (42. 59%) is spent by parents as private cost for the education of their wards in KVs.

The total unit cost for Arts, Commerce, Science and Vocational stream taught in Public schools in East Delhi is Rs.55676, Rs. 57538, Rs.74185 and Rs. 52703 respectively. This total cost is spent by the parents for educating their wards in Public schools which includes institutional cost and private cost. Out of this Rs.39171 (70.35%), Rs.39159 (68.05%), Rs.41881(56.45%) and Rs.40325(76.51%)is charged on different heads by the Public schools from parents for teaching of Arts, Commerce, Science and Vocational stream respectively. The remaining amount is spent by parents on text books, stationary, mobile, computer, pocket money and tuitions. In Public schools teaching and non-teaching staff is not being paid their salaries and allowances according to the recommendations of VI Central Pay Commission, hence their institutional cost of different streams are comparatively lower than Government Schools, Government Aided Schools, Rajkiya Pratibha Vikas Vidyalyas and Kendriya Vidyalyas. If we look towards the recovery of the unit institutional cost in terms of the average fee and other charges paid by the students, the striking picture emerges. Analyses show (Table 7.4) that the recovery rate ranges from 1 % to 2 % in different types of schools run by Government of Delhi. The recovery rate is 14% in Kendriya Vidyalyas run by Kendriya Vidyalaya Sangathan, Government of India. Where as, the Public schools being run by private managements the recovery rate is more than 116%, meaning thereby that they charge 16 % higher than what they incur the cost in providing the
education at the senior secondary level. Further, striking facts are that on the name of school uniforms and schools transportation they charge per student Rs. 3312 and Rs. 11400 respectively, which is almost double the expenditure incurred by the students in Government managed schools.

In East Delhi the problem of having all the streams i.e. Arts, Commerce, Science and Vocational in one school is being faced by the students. The admission policy in different streams after passing secondary examination is not rationalized. The availability of subject teachers and the methodology of teaching the particular subject greatly influence the admissions and result of students in the different steams. The inadequate and poor facilities for experiments in vocational labs in vocational subjects are another cause of great concern and students do not opt for admission in vocational stream. Relatively, low priority and preference to Vocational stream in East Delhi reflects the pathetic condition of Vocational education.

(9.4) Wastage in Different types of Schools:

In any education system wastage and stagnation are two symptoms of malfunctioning of the educational system. These are the lack of proper equilibrium between education system and learners and the poor capacity of the schools to attract and hold students. To these, may be added a third ailment – poverty, which falls outside the system. Wastage and stagnation in same class minimize the educational productivity and educational efficiency of the institution concern. The term “wastage” applied to education, seems to come from the language of economists and seems to compare education to industry. The more acceptable term for “wastage” would be “failure in schools”. Human learning, students academic year, school infrastructure, economic resources, teachers efforts – everything is wasted. Wastage in education always exists because of the system failure. System fails to send the student to next grade or class. Even system, sometime, fails to hold the children within the educational-system. For assessing the educational productivity and efficiency of different types of schools, the data of failure students of class XI and XII were collected from the examination-records of the schools, under study. The success rate of students in passing XI and XII class in different types of schools will determine their educational productivity and efficiency of senior secondary stage in East Delhi. The wastage in terms of amount of rupees has
been calculated for the schools managed by different managements through multiplication of the unit institutional cost to number of failure students.

The study shows (Table 8.1) that Government schools and Government-Aided schools have maximum wastage per school at senior secondary level in East Delhi, because per school failure (11% to 14%) in same class at senior secondary stage is higher in these schools. Since enrolment and students’ strength in one class of senior secondary stage in Government schools of East Delhi is high, average institutional cost is low. In these Government managed schools in East Delhi, failure rate is higher, and so is the wastage. In RPVVs, because of higher teaching cost, average institutional cost is highest. However important point to be underlined is that wastage is lowest in RPVVs due to better results (98.7 %). Per school failure rate in KVs is less than the Government schools and Government-Aided schools. The data of Public schools on results of students at senior secondary classes shows that the problem of wastage (in terms of cost) is quite significant in these schools also. Because of low salary cost in these schools, the average institutional cost is significantly low. The failure rate of students in Public Schools is lower than the Government Schools, Government-Aided Schools and Kendriya Vidyalyas, but it is more than six times compared to RPVVs. The data and analyses of wastage in terms of cost of different types of schools at senior secondary stage indicates that educational productivity and efficiency of RPVVs is highest compared to other schools. In Government Schools, the problem of wastage and stagnation is on higher side, resulting poor educational productivity and efficiency.

(9.5) **Suggestions:**

(1) To rationalize per unit institutional cost, it is essential to have cost-effective but result-oriented enrolment policy for all the streams. Like RPVVs, Government schools and Kendriya Vidyalyas should also decide the number of students in one section. Though additional enrolment in one section may lower average institutional cost, but it may decline the quality of teaching, which may further lead to stagnation and consequently wastage of resources. It is suggested that in Government schools, suitable enrolment policy of 45 to 50 students in senior-secondary classes in one section may be adopted to rationalize the average unit institutional cost.
(2) The teaching of Vocational stream in Government schools is completely neglected. All schools do not offer the option of study of Vocational stream. Vocational teachers in these schools are being appointed on Part-Time basis. Like teachers of other subjects, Vocational teachers also should be appointed on regular basis. The facility of practical in Vocational labs is not provided satisfactorily in Vocational subjects. It is suggested that Vocational labs should be equipped with full infrastructures for practical. It will encourage the students to opt Vocational stream, which will result in optimum utilization of school resources.

(3) In Government schools, failure students in senior secondary examination are allowed re-admission. The valuable resources are wasted on these re-admitted students. School administration should encourage them to opt and take the liberal examination system of National Institute of Open Schooling.

(4) The problem of wastage and stagnation at senior secondary level of education is faced by the Government schools. To minimize the stagnation, the quality of teaching should improve in these schools. In Government schools 75 % senior-secondary teachers (Post Graduate Teachers) are promoted from secondary teachers (Trained Graduate Teachers), remaining is directly recruited. The teachers, who have been teaching Mathematics or Science at secondary level, should not be allowed to teach the English language or Social-Science subjects on promotion. Mathematics or Science teachers were not trained during their teachers’ training for the methodology of teaching of English or Social-Science subjects or vice-versa. Kendriya Vidyalaya Sangathan and Navodaya Vidyalaya Samiti allow the promotions according to the feeder cadre of Science or Social-Science streams. Same system of promotion should be followed by Government schools to improve the quality of teaching and minimize the wastage, which will result in reduction of the institutional cost. Also to reduce the stagnation of students in one class and minimizing the wastage, students should be allowed admission in the streams of their choice. In this regard it is suggested that admission policy in different streams should be based on the aptitude and interest of students in the stream concerned and authorities should rationalize the admission policy for each stream separately.

(5) In Government schools, posts of subject teachers have been lying vacant for years, though it has reduced the institutional cost but students have to arrange tuitions of these subjects which increase the private cost.
(6) To lower the private cost of senior secondary education, students’ dependence on tuitions/coaching should be minimized. For this, it is suggested that senior secondary curriculum and methodology of teaching of different subjects taught in different streams, should be students friendly.

(7) Government schools, Rajkiya Pratibha Vikas Vidyalyas and Government-Aided schools spend very less on Co-Curricular activities due to financial constraints. It is suggested that like Kendriya Vidyalyas, these schools may charge the fund from the students like KV’s Vidyalaya Nidhi Fund.

(8) Students transportation cost should be reduced to minimize the Private cost, for this, it is suggested that government should encourage the admission in neighboring school through mutual transfer of students in the choice of their stream.

(9) Public schools managements instruct students to wear different types of school uniform on different days. It increases the expenditure on uniform, which in turn increase the Private cost of education. It is suggested that single uniform should be allowed to wear on all days of the week.

(9.6) **Suggestions for Further Research:**

The field of economics of education, particularly of senior-secondary education in India is a less researched area. It is indeed need of the hour to do more research in the context of huge public investment in this segment of educational sector. A few areas that deserve to be taken up for further research, especially at micro level, are indicated below:

(1) Which section of the society is the beneficiary of the Senior Secondary level of education imparted in government managed schools, particularly in Rajkiya Pratibha Vikas Vidyalyas, where Institutional Cost is significantly high?

(2) What are the returns of Senior Secondary education to individuals, society and nation?
(3) Institutional Cost should be calculated on the year basis at micro level for the different streams offered by different school managements.

(4) The impact of teaching of additional subjects, on cost structure of Senior Secondary education, should be investigated.

(5) The cost-effectiveness at Senior Secondary stage, from additional stream point of view in the existing school, may be another area of interest for further research.

(6) Cost and returns of education at senior secondary stage for SCs, STs, OBCs Minorities and General category students, may be another area of further studies.

(7) Studies on cost effectiveness may be conducted for Boys’ schools, Girls’ schools and Co-Ed schools separately.

(8) Studies on cost of Vocational education for establishing the exclusive Vocational schools may be carried out.

(9) The benefit of Senior Secondary Vocational education to the society and the industry in the context of ongoing large scale demand of computer and IT professionals should be studied.

(10) The intensive study, on wastage and stagnation in different streams, from cost effectiveness point of view should be taken up.