2.1 Needs of Review of Related Literature

Every serious piece of research includes a review of relevant literature and it is an important and necessary part of the research process. There are large number of literature from which a researcher can gather information on the problem of the research, such as theses and dissertations, journals and magazines, reviews and abstracts, books and newspapers, reports and original documents, microfilms, video cassettes, computer discs and floppies, movies and filmstrips. Thus, ‘literature’ is a comprehensive sources of information. Therefore, literature search and survey of related works is a continuous process in any research investigation.

Review of the related literature, besides allowing the researcher to acquaint himself with current knowledge in the field or area in which he is going to conduct his research, serves the following specific purpose:12

(a) The review of related literature enables the researcher to define the limits of his field. It helps the researcher to delimits of his problem. The knowledge of related literature, bring the researcher up-to-date on the work which other have done and thus to state the objective clearly and concisely.

(b) By reviewing the related literature the researcher can avoid unfruitful and useless problem areas. He can select those areas in which positive findings are very likely to result and his endeavors would be likely to add to the knowledge in a meaningful way.

(c) Through the review of related literature, the researcher can avoid unintentional duplication of well established findings. It is no use to replicate a study when the stability and validity of its results have been clearly established.

(d) The review of related literature gives the researcher an understanding of the research methodology which refers to the way the study is to be conducted. It helps the researcher to know about the tools and instruments which proved to be useful and promising in the previous studies. The advantage of the related literature is also to provide inside into the statistical methods through which validity of results is to be established.

(e) The final and specific reason for reviewing the related literature is to know about the recommendations of previous researchers listed in their studies for further research.

In such situation where original research is called for, it is necessary to survey past work in order to avoid repeating it. More important, past work can and should be viewed as a springboard into subsequent work, the later building upon and extending the former. A careful examination of major studies in any field of interest may suggest a number of directions worth pursuing to interpret prior findings, choose between alternative explanations, and indicate useful applications. Many studies conclude with a section on suggestion for further research.

2.2 Work Done Abroad

Conceptual and empirical analysis on the cost of education has been made by different researchers like Vaizey (1958, 1962, 1972), Schultz (1960, 1961, 1963) was perhaps the first to estimate factor costs of education
including forgone earnings of the students, Machlup (1962), Blaugh (1969, 1972), Hallak (1969), Bottomley (1972), Coombs and Hallak (1972), etc., as a result of growing awareness in the field of economics of education, several studies have been conducted on the different aspects of costing of education in many parts of the world. Here, some of the relevant literatures on the present problem are reviewed as under:


The author made an attempt to analyse the pattern and trend of educational expenditure in British. He defined educational expenditure as the sum of current and capital expenditure at current prices excluding transfer payment like student grants. He estimated the ratio of educational expenditure to National Income at factor cost and found increased from 3.4 percent in the year 1952 to 5.4 percent in 1955. The factor cost growth rate was really a favorable phenomenon. Even after deducting all the outlays on non-educational activities those were discharged by schools like catering, boarding and health services from educational expenditure, the ratio was still over by 5 percent.


Vaizey tried to apply economic analysis to education. He deals comprehensively with the economic problems that an education system give rise to. He placed education in an economic context and pointed out the special aspects of economic analysis which are relevant to the subject. In this book, he analyses various aspects of economics of education, such as education as consumption or investment; returns to education; finance of education; manpower; teachers and their salaries.

The authors examined the effect of changes in price levels on educational expenditure in Britain between 1920 and 1965. They estimated price indices separately for each input used in the educational system. The study observed that there was a change in the value of real resources devoted to education as well as change in the cost structure, for example, the fall in teachers’ salaries, from 70 percent of all expenditure in 1921 less than 50 percent in 1950.


The author, however, objected on forgone income of students being included as one of the components of educational costs. According to him, students do not evaluate their time spent in learning in terms of forgone income.


In this study the income forgone by students was estimated at more than half of the costs of higher education in the United States of America. The total cost of education, measured in current prices was $ 400 million in 1900 but it was increased to $28.7 billion dollar in 1956. In the year 1900, income forgone accounted for about one-fourth of the total costs of elementary, secondary and higher education. By 1956, it was over two-fifths of all costs. The real costs of education, in term of percentage was also increased about three and a half times as large as consumer income, suggesting an income of educational expenditure of 3.5 educational costs also rose about three and half times as
rapidly as did the gross capital formation of physical capital in dollar. In 1956, resource cost per student per year was worked out to be $280 per elementary, $1,420 for high school and $3,300 for higher education. In high school, earnings forgone constituted 60 percent of the total resource cost while it was 59 percent in higher education.


The author discussed thoroughly about the stock of education, embodied in labour force which increased 8.5 times between 1900 and 1956, whereas the stock of reproducible physical capital rose only by 4.5 times, both in constant 1956 dollar prices. The result suggested capital educational investment to be approximately 1.9. In value terms, stock of education accounted for 22 percent of the stock of physical Capital in 1900. More rapid growth of educational investment than the growth of investment in physical capital raised the stock of human capital to approximately 42 percent of total stock of physical capital in 1956.


According to Schultz, the factor cost of education consist of the costs paid by the student and his family and the costs paid by others such as state or federal government, voluntary organizations, etc., the author introduced two variants of educational costs as-

(a) Total resource costs from the societal point of view, and
(b) Private resources costs from individual points of view.
The components of total resource costs are further classified into -

(a) School costs or incurred by society on teachers’ salaries, supplies, interest and depreciation on capital;
(b) Opportunity costs of students such as income foregone during school attendance; and
(c) Incidental school-related costs incurred by individuals, for example, on the purchase books and on travel.

Private resource costs consist of tuition costs, supplies and additional living expenses, opportunity costs incurred by individuals and incidental school related costs. The total costs of schooling could be obtained by adding “all of the costs borne by the student and all of the costs not borne by him”.


In this extensive study on the development of knowledge industries in the United States of America, the author attempted to workout the total costs of production of knowledge. Machlup calculated the total cost of knowledge production in the United States was 29 percent of Gross National Product (GNP) in 1958. The knowledge industries were divided into six groups such as education, research and development, artistic creation and communication, media of communication, information services and information machine. Education was treated as one of the most vital constituents of knowledge industry. In the study educational costs were estimated from the following activities:

(a) Education in the home i.e. earnings forgone by mother staying at home to educate their pre-school children,
(b) Training on-the-job,
(c) Education in the church,
(d) Education in the armed services,
(e) Elementary and secondary schools,
(f) Colleges and University,
(g) Commercial, vocational and residential schools, and
(h) Other government expenditures on education programmes.

The findings of the study suggested the total costs of education industry in the United States in 1958 was 60,000 million dollars i.e., 14% of GNP while the total costs for formal education was 46,000 million dollars.


The authors in their study of Secondary School Costs in the United Kingdom revealed that between 1950-51 and 1963-64, per administrative staff and maintenance costs rose 46 percent while per student teacher costs rose only 27 percent, all measured in constant prices, per student capital costs also rose more than teacher cost while equipment and furniture rose by 35 percent and building by 35 percent respectively.


Jacques Hallak in this book analyses the concepts of costs. The book deals with costing as an instrument of economic analysis and outlines the answers to various questions; how to assess the total cost of education; what is the most helpful breakdown of cost components, and what are the explanatory variables which account for cost trends? It also discusses the methods of establishing total costs and unit costs, first on the basis of information derived
from the sources of finance and secondly from the accounts of education establishment.


The authors carried out an international comparative study on management of educational costs, where the attention was focused on how costs of education in some developed and developing countries have behaved and what lessons could be drawn from their experiences. The major objectives of the study were:

(a) To have cost analysis for assessing the feasibility of educational projects,

(b) To know the cost and consequences of introduction of educational reform, and

(c) To draw up a programme of expenditure on the planning period and facilitates decision making when several alternative possibility for allocation of funds.

They have classified educational system into five components, such as: objectives, outputs, benefits, internal process, and inputs. Further Coombs and Hallak emphasized the importance of educational costs analysis within the frame work of 'system analysis'.

They used different techniques for estimating educational costs such as:

(a) Resource Cost Vs Money Cost,

(b) Capital Vs Recurrent Cost,

(c) Unit Cost per Student, and

(d) Factor Costs of Education.
The factors affecting educational costs were divided into two such as external cost determinants which occur outside the educational system and internal cost determinants which are closely allied with the technology adopted by the educational institutions, and to the policy employed for the payment, deployment and utilization of teachers. The main external factors that affect the educational costs are inflation, rising educational demand, factor costs of education, educational revenues and foreign aid.

The study observed the substantial part of the impressive rise in educational expenditure during the period 1950 to 1970 was not "real" reflecting the inflation of prices and wages. On the other hand the main cause of increase in overall educational expenditure was the explosive increase in demand for education.

They revealed the four main reasons underlying demand forces such as:

(a) Rapid increases in youth population;
(b) A ‘revolution of rising expectation’ on the part of millions of families, long deprive of educational opportunities and who now regarded education as the key to individual advancement;
(c) Widespread adoption of public policies aimed at democratizing educational opportunities, i.e. adoption of the goal of universal primary education in the developing countries and compulsory attendance into secondary education and encouragement to higher participation rate in post secondary education in many industrialized countries; and
(d) The rapid expansion, upgrading and diversification of manpower requirement due to technological advances in the economy, emphasis of public policy on economics development and a clearer recognition of education’s role in economic growth.
Some of the important findings of case studies of different countries of the study are:

i. The costs of education vary not only from one country to another but within one country from one system to another, and also within different educational systems.

ii. A Unit cost of education shows a rising trend in the long run.

iii. Economics of scale are an important factor in improving efficiency. Cost per unit could be reduced by raising the enrolment to an optimum size. But this optimum size of enrolment will be different at different levels of education and different institutions.


The author made an attempt to examine the long and short run cost curves in operation of higher education. The study finds out differences in per student cost due to the size of the institutions. The important findings of his study are:

(a) Long run cost function of I.H.L. (Institutions of Higher Learning) is traditionally U-shaped.

(b) Parabola is superior to a liner function for explaining variations in per student costs.

(c) The size of institutions is a dominant variable in explaining variations in cost per student among similar students.

(d) Per student cost declines over the range 500 to 5363 F.T.E. (Full Time Equivalence) students.

Under the auspices of O.E.C.D., Bottomley carried out a study of Bradford University in which he calculated economies, capital and teaching costs of departments and courses. He found that increase in class size reduced the cost per student. Some of the important findings of the study are:

(a) The total economic cost per student varies between $2500 and $4000 for per laboratory-based course (Science and Engineering) and in between $1650 to $2400 for classroom based course, i.e., Humanities and Mathematics. The implies that lab-based courses are more expensive than classroom-based courses. Capital and maintenance costs vary between 27 percent to 49 percent of the total cost for lab-based courses and 31 percent to 39 percent of the total cost for classroom-based courses. Teaching costs vary 34 percent to 55 percent of the total costs for laboratory-based and 22 percent to 35 percent for classroom-based courses.

(b) Substantial economies in staff costs per student can be gained by enrolment increase. Over the nine courses the staff cost index falls in between 52 percent and 82 percent of its present value when enrolment is approximately doubled, i.e., to an optimum level.

(c) Economies can be gained by changing the teaching structure of courses, i.e., by increasing the teaching load on the staff by intensive and extensive use of teaching, accommodation, building and other technical and administrative staff.

(d) In almost all the courses unit cost defined in terms of total economic cost per student can be decreased by 5 percent to 13 percent.
A combined effect of an increase in enrolment to an optimum together with a 50 percent increase in teaching load, while maintaining the existing cost structure would reduce the full academic staff cost per student by 46 percent to 65 percent.


In the study the author made a comparison of the ratio of total costs per student per year by education level for a group of developed and developing countries. The data suggested that, in case of developed countries (viz. USA, Great Britain, New Zealand) the ratio of total per student costs of secondary to primary education was 6.6 to 1 and that of higher to primary education was 17.6 to 1; while in less developed countries (viz. Malaysia, Ghana, South Korea, Kenya, Uganda, Nigeria and India) these relative costs were 11.9 and 87.9 to 1, respectively. In other words, taking the 87.9 for the equivalent cost of educating one university student for a year, 88 primary school children could have a year of schooling. In many African countries cost ratio per pupil between higher primary education ranged as high as 283 to 1. Since in over half of the world’s developing countries the ratio of students in primary to students in higher education is above 100 to 1. For developed countries the ratio is less than 10 to 1. The results revealed that the developing countries spend a large portion of their educational budgets on a very small portion of students enrolled in Universities and professional institutions.

The authors studied the rate of return to investment in college and high school education in USA. The study tried to estimate the costs of education by classifying them into- (a) private costs and (b) Social costs, which were subdivided each of these into direct and indirect costs.

In the direct private costs consists of cost of tuition, books and supplies, travel between home and school, and capital used by students in works and additional living expenditure. By indirect private costs, the authors meant income forgone by students. Likewise, social costs also have two costs components - direct and indirect cost. Direct cost was defined as "the sum of educational expenditure incurred by colleges and the social cost of books and additional expenses". Further the author defined social indirect cost as the value of property tax forgone on the property owned by educational institutions and earnings forgone of capital used in education. The study calculated the net tuition payments as $ 112 per student in 1939 and $ 242 per student in 1958. Books and supplies were estimated at 22.5 percent of tuition, travel 23.9 percent and capital 7 percent. The author estimated the average outlay on books and supplies, etc. on the basis of the survey conducted by the U.S. Department of Health, Education and Welfare in the year 1952-53.

The study treated the high school tuition cost as zero. Other direct costs of high school students such as transportation, books etc., were calculated by assuming the ratio of these costs to expenditure per student equal one half of the observed ratio for college students. The earning forgone of the student was calculated by assuming that college students earned about one quarter of the amount earned by high school graduates of the same age and that high schools students earned one quarter of the estimated earnings of elementary school graduates of the age, 14 to 17. Current educational expenditure was estimated by subtracting non-educational expenditures from total educational expenditure
i.e., expenditure on extension, organized research and activities relating to department.

The capital per student was obtained by dividing the amount per school by the number of students per school. Backer found out the expenditure of high schools and elementary schools published by the U.S. Office of Education by using the formula \( wx + (1-w) ax = y, \)

Where ‘x’ is expenditure in high schools, ‘y’ is the combined expenditure for high schools and elementary schools, ‘w’ is the fraction of students in high schools and ‘a’ is the ratio of expenditure per student in an elementary school to the one in high school. Opportunity cost of capital was assumed to be 10 percent of its value per year and by taking the implicit annual property tax on educational capital as 1.5 percent of its value, the value of property tax forgone was estimated to be $18 per student in 1939 and $12 per student in 1949.


The authors in their study of the distribution of public educational expenditure suggested that in developing countries the attainment rate of students in higher education level was 6 percent which received almost 40 percent of the total public resources. In case of Africa less than 2 percent of the student who go to University received over 35 percent of the public expenditure on education. In Latin America, 12 percent of student in higher education received 42 percent of the total educational resources.

The author conducted a survey on educational expenditure at the international level covering the public and private sector. The findings of the survey indicated that the world as a whole, per capita public expenditure in the year 1978 was US $146, or 5.6 percent of World Gross National product (GNP). The developed countries in Europe and the Americas spend significantly more than the developing countries of Asia and Africa. Per capita public expenditure in developed countries and developing countries were US $366 and $26 respectively. In term of percent of GNP, Haiti spent the least per capita, and Sweden spent the most. On the per capita spending in Organization for Economic Co-Operation and Development (OECD) selected nations varied from a high of $139 in Canada and $107 in the United States to a low of $9 in Italy, the Netherland and Sweden. The study also observed that on the average consumers in various countries with high private education spent a large portion of their budget to education. Canadian consumer devoted the largest share to education and Swedish consumer the least. Among the European countries, Spain and the United Kingdom reported the highest private consumption expenditure on education.


This study provides an overview of the return on investment in top post-secondary education in Canada, by gender. In it, three time series developed respectively on the cost-effectiveness of non-university post-secondary diplomats (1981-1996), bachelor’s degree (1989-1996) and university degrees
(1981-1996), including bachelor’s, master’s and doctoral degree. The method used is based on a calculation of internal rate of return (cost-benefit approach) and is applied to the data from the Consumer Finance Survey.

The results as a whole indicate that rates of return to post-secondary education are positive and vary by gender and level of education. The results are also consistent with those of Canadian studies on rate of return to education over a single year. In addition, the analysis indicates that rates of return are sensitive to the state of economic activity, and there is a positive correlation between rates of return and unemployment rates. Lastly, after screening the data to adjust for the effects of the economic cycle, they identified a slightly positive trend in rates of return to university degrees. According to their estimates, the trend rates of return increased by approximately on percentage point between 1981 and 1996.

2.3 Work Done in India

It was for the first time in India that the Kothari Commission, 1964-66, strongly spelt out the importance of per student unit cost studies in higher education, where provision of educational facilities is much more expensive than at other levels of education. Subsequently, a seminar was organized by the National Council of Educational Research and Training (NCERT), New Delhi, at Jaipur towards the end of 1967 to discuss major issues in the “Measurement of Cost Productivity and Efficiency of Education”. As an outcome after seminar, a volume entitled “Measurement of Cost Productivity and Efficiency of Education” edited by H.N. Pandit was brought by the NCERT in 1969. The book consists of several thought provoking papers on conceptual aspects of costing of education and empirical investigations. It was really a pioneer in the field of economics of education which helped a lot to bring about the general awareness about educational economics among those interested in the field.
Since then on, some studies have been conducted in India. Here, some of the empirical studies conducted in India with reference to the present problem are reviewed below:


The Commission examines a few major issues relating to the financing of education in India. Some of the important findings of the study are:

(a) The average annual cost per pupil/student during the year 1950-51 to 1965-66 does not show appreciable increase except in professional colleges and vocational schools.

(b) At the pre-primary stage, the cost per pupil has remained almost stationary. It implies that in real terms, the investment per student has gone down very greatly.

(c) At the lower primary stage, the cost per student has gone by 50 percent. The non-teacher costs per pupil have actually fallen, even at constant prices. That is why our primary schools are so dull and drab. In fact, in many primary schools, we give hardly anything except the teacher. The picture at the higher primary stage is similar.

(d) Expenditure per student in colleges of Arts and Science shows some increase in current price, but a fall in real price.

(e) At undergraduate stage, to maintain good standard the expenditure per student would be doubled if 10 per cent of the institutions are to be maintained at optimum level of quality, that is, at about 10 times the cost per student. It is obvious that if an earnest attempt is to be made to maintain adequate level of quality in higher education and to raise at least few institutions to international standard, we need to find large additional resources.
(f) One of the main findings of the Education Commission was that the available facilities in education were being under-utilized and that the fuller utilization would reduce the costs of education.


Panchamukhi calculated the total costs of university and professional education in India during the period 1950-51 to 1959-60 and it was found about Rs. 700 crores. More than three-fifths of these costs were private which was earnings forgone by the students. The estimation in the study related to three levels of education such as education in schools, and colleges, training on the job and training in the armed forces. The calculation of cost of formal education covered salaries of teaching and non-teaching staff, expenditure on equipments, chemicals, library, sports and indirect expenditure such as inspection, direction, building, furniture, scholarship and additional expenditure in terms of expenditure on books, transport and other stationery required by students. Further the costs of on-the-job training and training in armed forces were also estimated to give total of the resources going into the formation of educational capital in India.

The main findings of the study were that physical investments in India increased at a higher rate of 13.4 percent per years as compared with educational investments and India invested nearly 5 to 6 percent of its national income in education as against 11.8 percent and 12.9 percent of Gross National Product (GNP) in USA in 1956 and 1958.

The authors investigated the relation between supply and demand for educated manpower in India. The authors observed that the persistence of educated unemployment in India could be explained by the resistance of educated people to the fall in their earnings, which according to the economic theory that may accompany of the increase in their relative supply. Private rates of return to primary, secondary and higher education as estimated by them have presented that even with unemployment, the pursuit of higher education is financially profitable investment for the individual. The social rates of return, however showed that from society’s point of view, primary education had been under-invested while higher education sector had been relatively over-invested.

The authors calculated costs of education in India for the period 1960-61 and 1965-66 in order to work-out the rates of return on investment in education.

The rates of return to educational investment is drawn by comparing age-education-earnings profiles with the relevant costs of education at the level, either to the individual or society. In this way the authors estimated social costs and private costs separately. Social costs included all current expenditure of educational institution and Private expenditures on book and earnings forgone. Private costs refer to fees minus scholarships, as well as private expenditure on books and earnings forgone. The earnings forgone while education was calculated directly from the age-earnings profits available in India. It was also suggested that the earnings forgone of even six year olds had some significance as they helped to explain the high dropout rates in the early years of primary school. The study suggested four estimation of direct social cost of education in India, such as:

(a) Social costs of educating successful candidates;
(b) Social costs of assuming average level of wastage and stagnation;
(c) Private costs of educating successful students; and
(d) Private costs of education assuming average levels of wastage and stagnation.


The author investigated the unit costs of education at school stage in India which have provide an overall summary of issues for selection of items of costs, unit for measurement and indices or measuring the quantity of output. Educational costs were divided into institutional cost, student cost and opportunity cost. Institutional cost was further classified into capital cost, equipment cost, non-divisible operating cost and divisible operating cost. Capital Cost was defined as the cost of land and buildings, laboratory, hospitals, water works, library, hostels, etc., equipment cost indicated and estimated value of services rendered by total stock of books in the library, equipment in the laboratory, gas plant and printing presses. Items of expenditure which cannot be assigned to particular class in an institution or a category of pupils in an institution were termed as non-divisible operating cost. These include salaries and allowances paid to administrative and establishment staff, pension, rent, interest, maintenance expenditures on buildings, etc. Divisible operating costs consist of teacher salaries, laboratory cost, examination, etc. Student costs include tuition and other fees, costs of books, equipment and stationery purchased by students, additional living expenditure and transportation charges. Opportunity cost was defined as income forgone by the students. That is equal to the amount of money the students would have earned had they not attended the school.

The author estimated the total cost of education in India covering the component of income forgone of the year 1965-66 at 1960-61 prices. The estimates indicated that educational expenditure was only 3.4 percent of National Domestic Product in 1950-51, and which was increased to 7.38 percent in 1965-66. On the other hand gross capital formation as a proportion of National Domestic Product increase from 13.1 percent in 1950-51 to 17.93 percent in 1965-66.


Sharma in his paper points out the major gaps in coverage, collection and methodology of educational statistics relating to costs in India. He also gives a technique of estimating unit cost of education and tries to locate the extent of wastage of resources on account of drop-outs and stagnation. Some of the important findings are:

(a) A sizeable amount invested in the educational system is being wasted.
(b) In order to get an enrolment of 3,611 thousands in class V in the year 1960-61, Rs.1,052.8 millions were spent. The same output would have been achieved with only Rs.496.5 millions if there had been no drop-outs or stagnation. In other words, the output which we got at primary stage by spending Rs.212 could have been obtained by spending only Rs.100.
(c) About 60 per cent of the students who join Class I do not reach Class V at all. So the wastage is about 60 per cent in terms of enrolments at the primary stage.
(d) Sharma suggested that as most of the drop-outs and even stagnation is on account of poor economic conditions of students, it is very likely that by spending a little more at primary and at middle stages (by giving some financial aid to the students in the forms of books, stationery, school uniform, midday meals, etc.) we may get much more output for each Rupee spent on education at this level of education.


Ruddar Datt conducted the case study of unit cost of education of the colleges in Haryana in 1965-66. The main findings of the study were: the unit cost of education was highest in case of state college, that is, Rs.403-424; private women’s colleges had that lowest unit cost of Rs.252-268; and the unit cost per student for the Haryana colleges was Rs.311-337 for the period of the study.


In this study, Kulkarni’s findings have shown that main items of college expenditure are teacher’s salaries, furniture, library, rent and scholarships; and teacher’s salaries account 40 percent to 50 percent of the total cost of education.


In this study, the authors have studied the economics of education of the 22 colleges of West Bengal with special reference to size and location of these institutions. Some of the important and significant effect on output is the
student input, and some colleges can produce better output not because they have better environment but because they have better input.

- Institute of Applied Manpower Research (IAMR): Pattern of Expenditure and Per Student Cost in Indian Institute of Technology, New Delhi, September, 1975.

This report deals with the size-cost relationship. In this study, the cost of education of the I.I.T. student at the undergraduate and postgraduate levels is estimated and the returns to scale are also measured in terms of cost elasticity. Some important findings of the report are: Optimal enrolment worked out in almost all cases were higher than the actual enrolment; fixed costs of undergraduate training are higher than fixed costs of postgraduate classes; and linear average cost curve reveal economies of scale for undergraduate and postgraduate course.


The authors have studied the costs of education for schools and colleges in Gujarat. The study reveals that out of every 13 colleges of Arts only two of them have an optimum enrolment. This situation is not better in Commerce and other colleges. The main findings of the study are: training in professional courses like, Engineering, Medicine and Education is costlier than Commerce and Law; the size-cost relationship evaluated by fitting a second degree curve indicating a tendency of the average cost of decline with the increase in enrolment increasing the optimum size of enrolment was calculated at 960 students for a college in Gujarat and size, age and pupil-teacher ratio are the three important determinants of cost of education.

In this study Sri Prakash attempted to analyse unit costs for all levels and types of education in India during the period of 1951 to 1964. The study observed that the total average unit costs of all levels and types of education as a whole rose from Rs. 50 in 1950 to Rs. 67 in 1964, measured at constant prices of 1960-61 showing a growth rate of 34 percent. The direct cost increased on the average from Rs. 40 to Rs. 52 during the period under study with a growth rate of 30 percent. The per student costs of pre-primary schools, middle schools and colleges of technical and professional education decreased substantially while the per student costs of all other institutions increased from primary to middle and from middle to high and higher secondary schools. The unit cost of pre-primary schools was much greater than that of primary and middle schools. It was also observed that the costs per student in universities were much less than the unit costs in colleges for general education.


The author has done a study of unit cost of college education in Punjab as well as cost of elementary education in India. The analysis indicated that cost of specialized instruction in Education, Science and Commerce for exceeded the unit cost of arts and humanities courses. Education in science at the college level was the costliest. The study found that unit costs of education were higher in public than private sector. The study shows the following characteristics of unit cost of college education in Punjab-

(a) Inverse relationship between unit costs and enrolment size,
(b) Direct relationship between costs, quality of education service and number and nature of courses serviced;
(c) Variation of optimum unit costs with size optima;
(d) Domination of unit costs by recurring unit costs; and
(e) Approximately of overall and item-wise unit costs by U-shaped cost curves.

The study further observed that educational development in India presents the following growth rate-

(a) Rate of enrolment have grown more rapidly than total population of educable age-groups, raising gross and net enrolment ratios steadily;
(b) Total nominal and real expenditure on education have increased much more rapidly than Gross Domestic Product (GDP), and Net National Product (NNP), resulting in consistent rise in the proportion of income spent on education;
(c) Total expected and actual expenditure on education have grown over the enrolments, leading to steady growth of expected and actual unit costs of education.
(d) Expected unit cost has increased more rapidly than actual unit cost, highlighting the inflation effects on education. Even the inflation effect on per student cost varied between education of different levels, yet price effect varies with the structure of unit cost of education of different level of education;
(e) The structure of cost depends mainly upon the share of the cost of teacher inputs in total costs;
(f) The highest growth in per student cost was in the middle education.
Unit costs of primary and elementary education were also grown more rapidly than the unit costs of higher education.


The authors made an attempt to analyse the structure and growth of public expenditure on education in India during 1951 to 1987. The study was done on the basis of three aspects viz. the growth of public expenditure on education; determinants of public expenditure; and educational production and costs functions. The study indicated that the growth of educational expenditure gathers at the peak and the educational system moves from lower to higher stages of development and educational expenditure grows more rapidly than general expenditure and income. The analysis of educational expenditure on both public and private sector revealed that expected and actual expenditure increased more rapid than population, enrolment and expected and actual Net National Product (NNP).

Private educational expenditure increased at a lower rate than public educational expenditure. The study found that education is treated as a superior good both by society and individuals thereby investing rather than consumption components of education. The analysis of the determinants of public and private expenditure on education indicated that income is a significant determinant of expenditure on education and that education is found to be a superior good both at the levels of social and private. The analysis revealed that educational production process in real terms operates under the law of increasing the return to scale. The total cost curve appreciated second degree parabola and the average cost curve is U-shaped at the optimum size of enrolment of 3.91 crores.

The objectives of the study were:

(a) To examine the amount of resources were allocated to education as a percentage of National Gross Product and, within education, to various levels,

(b) To study the patterns of allocation of resources to education by state governments,

(c) To study how this compared with state income,

(d) To examine whether allocation of resources on education by India were commensurate with the returns from investment in education, and

(e) To study the ways the resources were allocated to education.

The data provided by the Ministry of Education of the Government of India and of international bodies like UNESCO were analyzed in descriptive forms and through the application of the regression equation technique.

The findings of the study were:

(a) In 1971, the proportion of GNP spent on education by India was 2.5 per cent, in the USA 6.7 percent, the USSR 7.3 per cent. The numbers of persons in educational institutions in India were 79.8 million compared with 63.2 million in the USA and 62.3 million in the USSR. In terms of total population, India, the USA and USSR had 14.2, 25.68 and 30.9 per cent respectively.

(b) During 1971-72, Manipur spent 10.71 per cent of its total SNDP (State Net Domestic Product), the highest among the states. It was followed by Himachal Pradesh and Kerala with 5.63 and 5.31 percent respectively.
The smallest proportion (0.36 percent) was spent by Jammu and Kashmir.

(c) Seven states has a lower per capita income but their expenditure per student was comparatively higher.

(d) Manipur spent the highest proportion of its SNDP (5.77 percent) and Haryana the least (0.48 percent) on primary education. More states spent more than one percent of their SNDP on this level of education.

(e) Himachal Pradesh was proportionately the highest spender (3.20 percent) on higher secondary education. The average of all the states worked out at 0.78 percent.

(f) Manipur spent the highest (0.79 percent) on higher education. The average for all the states was 0.25 percent.

(g) Bihar spent 0.20 percent of its SNDP on grants to universities and colleges. The average proportion of grants to their SNDP was 0.80 percent.

(h) The majority of states allocated 20-25 percent of their total state budgets to education, but Bihar, Nagaland, Orissa, Haryana and Jammu & Kashmir allocated less than 20 percent.

(i) The proportion of funds to total budget allocated by state government had little relevance to per capita income.

(j) In 1971-72, Delhi was the only Union territory to allocate 34.5 percent of total budget for education. During 1975-76 the allocation rate increased to 43.2 percent. The average of all territories increased to 28.7 percent from 24.3 in 1971-72.

(k) The share of higher education to total expenditure was around 10 to 14 percent. This pattern changed slightly between 1971 and 1975.

(l) The states which were economically backward were paid a little more attention to higher education compared to the economically developed states.
(m) The pay scales of teachers varied from state to state. In some states they varied between private and government managed institutions.

(n) No systematic planning in allocation of funds appeared to have been followed by the state governments.

(o) Four variables, viz., state net domestic product (SNDP), state revenue income, state total income, and enrolment in higher education explained 62 percent of the variation in the allocation of grants. The relationship between enrolment variation and grants was found to be poor. No relationship was found between enrolment data and the grants from the UGC.

(p) The method of grants adopted by the state governments differed from state to state. In some states it differed from University to University.

- Sharma, G.D.: Institutional Costs of University Education: A Study of Costs and Efficiency of Indian University System, Association of Indian Universities (AIU), New Delhi, 1980.

Sharma has studied the cost and efficiency of the University system in India. He has analyzed the cost in terms of teaching inputs, student’s services, administration and supporting services. He made a comparison of unit costs between general, professional, residential and affiliating universities. He has found that the size of enrolment, where the lowest unit costs per student are estimated in Rs.1332 provided the number of students is 3043. Universities with such enrolment level may be said to be working at the optimum level and the enrolment more or less than this number are suffering from diseconomies of scale. The important finding of the study is: expenditure on administrative and supporting services accounts for more that the expenditure on teaching inputs.

The objectives of the study were:

(a) To discuss the educational component, enrolment capacity and actual enrolment, quality of student intake, student-teacher ratio and lecture inputs in the Hindu College,

(b) To examine the unit cost of the college with reference to various subjects/faculties, and

(c) To examine the effectiveness of the institution in producing graduate, given the quality of student intake, resources spent on the teaching and learning process and the quantity and quality of graduate output.

Data were collected for three years, 1973 to 1976. Accounts registers, budgets, admission registers, results and attendance/lecture registers were the major sources of data. Data were analyzed in quantitative forms.

The major findings of the study were:

(a) Hindu College is one of the oldest colleges in Delhi. Located in the main campus area of the University of Delhi, it offers various combinations of subjects in the faculties of science, arts and social sciences.

(b) The college had always operated with a magnitude of under-utilization of enrolment capacity which ranged from seven percent to thirteen percent.

(c) The college admitted a fairly large number of students who had done well at their higher secondary level.

(d) The student-teacher ratio for the college as a whole was almost 30:1.
(e) The usual practice during 1973-76 was for each teacher to take three or four lectures per week in every faculty. The effectiveness of the teaching-learning process from this point of view was only a third of what it should have been.

(f) The main component costs were: salaries of teaching and non-teaching staff, cost of library services, cost of student services, laboratory expenses and cost of maintenance and repairs. The percentage of total recurring expenditure total budget was 88 to 98 per cent during 1973-76. The per student cost on teachers' salaries was Rs.1,095 to 1,541. The per lecture expenditure varied from Rs.88 to Rs.124.

(g) The per student institutional cost varied from Rs.1,617 to Rs.2,258

(h) The average per unit cost for graduating a student for all courses/subjects (for three years duration) was around Rs.5,145. Among the general courses, the B.A. Pass course was relatively expensive.

(i) In general, the quality of students admitted to the college was good. The rate of wastage among the students in this college was more than 50 percent.


The objective of the study was to find out the cost per student per year for education in the arts, commerce and science colleges in Maharashtra.

The major observations and findings were:

(a) Colleges, generally, received funds by ways of fees, grants, donations, and receipts on miscellaneous items. Out of the fees, that received for obtaining eligibility certificate was credited to the university. Receipt
on account of other fees was considered direct receipt of colleges by the Government.

(b) The sources for grants were the State Government and the UGC.

(c) The items of expenditure, generally, were salaries to the teaching and non-teaching staff, rent on the building, furniture, equipment, library, laboratory, gymkhana, and general maintenance.

(d) Till March 1979, the grant-in-aid formula to colleges was deficit-oriented and was as follows:

\[
\text{Grant} = 50\% \text{ deficit} + 5\% \text{ or } 10\% \text{ admissible expenditure (for student strength of above 1000 or less than 1000)} + \text{ upto 33.3\% of dearness allowance provided the deficit was not covered by 50\% } +5\% \text{ or } 10\% \text{ of admissible expenditure.}
\]

(e) The average cost per student in single-faculty Science College was the maximum and that in the single-faculty Commerce College was the minimum.

(f) Increase in the average cost per student from 1973-74 to 1977-78 had been about two times in all categories of colleges except single-faculty commerce colleges where the increase had been one and half times.

(g) Expenditure on staff emoluments and essential expenditure was 75 percent of the total cost during the previous five years.

-Chalam, K.S.: A Study of Finances, Productivity and Unit Costs of Higher Education in Andhra Pradesh, Ph.D., Eco. (Unpublished), Andhra University, 1981.
The objectives of the study were

(a) To find out the unit cost of students studying in institutions engaged in professional, technical and general education, and
(b) To estimate the internal productivity of higher education.

Findings of the study were:

(a) Growth of enrolment in general education and professional higher education indicated that the growth of all categories, except graduates in general education, had declined in the second decade as compared with the first. The proportion of the status pursuing postgraduate courses in the professional courses had increased much faster than in general education during the period 1956-57 to 1975-76.

(b) The enrolment had influenced the number of teachers employed in the colleges and universities of the state.

(c) Educational expenditure in the state had grown much faster than the SDP (State Domestic Product) during the last two decades. The expenditure on higher education ranked in all levels of education sector during the period of study.

(d) The production of SDP spent on education and higher education was less than 3 percent and 1 percent respectively in 1975-76. For the country as a whole it was 3.5 percent of GNP.

(e) Among the different items of direct expenditure, salaries of teachers in general and professional streams accounted for 63.0 and 53.0 percent of the total expenditure in higher education respectively in 1975-76.

(f) Out of the total expenditure on higher education, only less than one-third of the amount was devoted to professional education.

(g) Regression analysis showed that the expenditure on scholarships, buildings, etc. accounted for 42 percent of the variation in the indirect
expenditure while it accounted for only 28 percent of variation at constant prices. The elasticity of total expenditure to total expenditure with respect to buildings and scholarship and also to the total indirect expenditure on higher education was less than one.

(h) Finances for higher education continued to come from three main sources, namely, the state and central government and their agencies, local bodies and private contributions through fees, gifts, etc. Private endowments which had a dominant role in collegiate education two decades ago, has now declined and contributed less than one fourth of the finances.

(i) The unit institutional costs of colleges of Vishakapatnam indicated that the unit costs were less in the government colleges as compared with private colleges. The government colleges cost per student at institutional level was more in government colleges where hostel facilities for weaker sections were provided. Out of the government cost, a maximum amount was devoted to operating cost of the institution.

(j) The private cost of postgraduate and professional courses was more than that of the undergraduate courses in degree colleges. The private cost of MBBS students was found to be higher than that of any other courses.

(k) The private cost of scheduled caste student indicated that 60 to 67 percent of their total expenditure was on food in the degree colleges and 49 to 55 percent on this item in the university. The average private expenditure of the scheduled caste student was lower than that of backward class and all other students and they also spent comparatively less on books and stationary.

(l) The state met less than 50 percent of the educational expenditure on scheduled caste students and less than 40 percent in the case of backward class students.
(m) The total committed government expenditure was found to be less.
(n) The government had been taking the major responsibility for funding higher education system in the state.
(o) The external productivity of different levels of education in terms of rate of return and earning differentials reveals that rates of return of higher education had decreased during the period 1959—60 to 1975-76, while and increasing trend had been observed in the case of primary and secondary education.

(o) The devolution of grants-in-aid, scholarship schemes, rate of fees for higher education, admission policy, etc., of the Government of Andhra Pradesh were not based on rationally devised criteria but on policy of adhocism.


The author made cost analysis of economic and educational processes of internal organization of the Punjab University from the years 1950-51 to 1974-75 in general, and teaching departments and affiliated colleges in particular, which affect allocative efficiency of resource-inputs. The main findings, inter alia, were:

(a) The cost analysis of 30 teaching departments revealed that both recurrent and capital costs differed in terms of absolute level and their composition. Unit costs of laboratory-based departments were more than those of class-lecture-based departments.
(b) The cost component of salaries was predominant in all departments.
(c) The level of capital costs was higher in the laboratory of the science departments and also in the departments of Commerce and Management, Physical Education, Law, Journalism and Geography
where investment in equipment and books was proportionately more as compare to the enrolment.

(d) The investigation of the dynamic of internal organization, in relation to enrolment, number of teachers and variations in unit costs showed that it was relatively consistent in the department of Botany, Chemistry, Zoology, Chemical Engineering, Law and English whereas the departments of Anthropology, Biochemistry, Education, History, Political Science and Sanskrit were relatively inconsistent in their internal organization.

(e) Some departments were making optimum use of their resources in terms of enrolment and teachers besides other factors. Some departments were found to be underutilized, and some had more enrolment as compared to the number of teaching staff.

(f) The levels of hostel expenses and of fee rates and other charges were higher in private colleges charging more than the prescribed limit.


The study attempted to evaluate the precise contribution of education to the development of Nepal. Some of the main findings of the study were:

(a) The cost of higher education in Nepal was heavily subsidized in comparison with the cost in India and other countries. Professional education, however, was an exception.

(b) Due to inadequacy of professional education facilities like engineering and medical, many students had to go abroad for these courses. Hence,
the private costs of these courses in the total social costs were much higher and those of public costs.

(c) The earnings pattern of educated people in Nepal varied from sector to sector. Hence there was no standard earnings pattern set for the educated population with varying academic qualifications. However, the general salary structure of Nepal for the educated was more or less akin to the earnings pattern found in most of the developing countries.

(d) All age earnings profiles (Social and Private) held the general characteristics with a few exceptions.

(e) The effects of education on the earnings of educated in Nepal increased as one moved to higher and higher levels of education. The effect on earnings of general undergraduates was estimated to be 23.58% only and it was 38.53% and 82.53% and 82.11% for general graduates and general postgraduates respectively. It showed that social-economic variables other than education had an influence in determining the earnings of the educated.


The author studied the pattern of expenditure and per student cost of 63 engineering colleges and 85 polytechnics. The study found that:

(a) The out-turn intake ratios were observed to be varying widely among the responding engineering colleges.
(b) The teacher-pupil ratio also varied considerably. However, in respect of average teacher-student ratio, differences among the four types of management were not observed to be varying widely among all colleges. In 1968-69, per student expenditure ranged between Rs.691 and Rs.4048 while in 1971-71 the variation was from Rs.481 to Rs.7,30. These observed variations in the pattern per student expenditure among the responding colleges were found to be influenced by the management and location factors and also the levels of quality.


The author estimated per student cost at various levels of education. The major findings at higher education level were:

(a) At the undergraduate level in arts and science, the per student cost was Rs.382 and Rs.575 respectively.

(b) The average per student cost for postgraduate courses in arts was found to be Rs.2,624 while for science courses it was Rs.5,314.

(c) At the degree level in engineering per student cost was Rs.4,716.

(d) On an average, 83.6% of the expenditure was accounted for by salaries and allowances of teaching and non-teaching staffs.
(e) Per student expenditure for the degree course in agriculture was Rs. 3,018 of which 88.5% was accounted for by salaries and allowances alone.


The study sought to determine the unit cost of higher education at the postgraduate level in the University of Poona. The major findings of the study were:

(a) The income and expenditure of the University had steadily gone up from its inception in 1948-49 to 1977-78. Since 1974-75 the University had a deficit budget. The accumulated deficit exceeded Rs.10 millions in 1979-80.

(b) The expenditure per student at the postgraduate level incurred by the University, exclusive of expenditure on general administration and common facilities, had grown by nearly 50% from Rs.2,369 in 1973-74 to Rs.3,462 in 1977-78. The cost per student was the highest in the science faculty and except for the year 1974-75, it was the lowest in the humanity faculty. In 1977-78, costs per student in humanities, social sciences, and natural sciences were Rs.1,728, Rs.2,757 and Rs.3,462, respectively. Without considering the non-departmental expenditure and interest, charges on buildings, equipment, books, etc. if these charges were estimated and included, the cost of education of one M.A./M.Sc./LLM/Ph.D. student was Rs.6,033 per year in 1973-74 and Rs.11,056 per year in 1977-78. If the cost of conducting postgraduate examinations was added, the unit cost would go up by a further amount
- Tilak, J.B.G. : The Economics of Inequality in Education, Sage Publication India, New Delhi, 1987

The author in his study on the rate of return to educational investment in Andhra Pradesh had worked out the costs of education. He suggested two types of costs of education such as – (a) Private and (b) Institutional cost. Private cost was defined as the part of investment in education which was incurred by student or his parents/guardian or both comprising of three elements, i.e. tuition cost, non-tuition or maintenance and forgone earning of the students. Institutional cost was classified into two such as current costs and capital costs. The total social costs of education were the sum of private costs, institutional costs and net of transfer. The study found out that forgone earnings formed an important ingredient of educational costs while the institutional costs of education, quite contrary to general belief, constituted relatively a small part of the total cost of education.


In the study the author made an attempt to analyse the unit cost of higher education in India. The study was based on the data available in 1975-76. The scope of the study covered all the states and union territories of Indian union. And the unit costs of education was estimated for direct public expenditure on three major heads of-

(a) Salaries of teaching staff,
(b) Salaries of other staff, and
(c) Expenditure on equipment and other appliances.
Unit cost analysis was done separately for general education, professional education and other higher education. The study observed different unit costs education on the different extent between different states and union territories and also between different types higher education i.e., general, professional and other types. Regression analysis indicated that size of the institution was not a dominant variable in explaining difference in unit cost while student-teacher ratio and average salary of teacher were the significant variables.


The author indicated the expenditure on higher education in India increased from Rs. 172 million in 1950-51 to Rs. 16.5 billion in 1983-84, yielding at the growth rate of 14.8 percent per annum in current prices. In real terms, however expenditure on higher education increased only 11 times during the period under study. The shares of higher education in Gross National Product (GNP) increased from 0.19 percent in 1950-51 to 0.89 percent in 1983-84. The study also revealed that nominal unit cost of higher education increased only 4.3 times while real unit costs occur negative growth rate.


Tilak investigated the experience of some major Asian countries in an effort to develop the educational sector. He suggested a broad vision of the contribution of education in various facts of development in Asian countries.
The study observed that education improves the productivity of the labour force, enhances individual earnings, raises national income, reduces poverty and improve income distribution. The findings of the study revealed that public expenditure on education increased 32 times in current prices in 25 years between 1965 and 1990. The growth rate in Asia is the highest among the world regions. In terms of GNP, total expenditure on education increased from 3.4 percent in 1965 to more than 4 percent in 1990. In the year 1990, Asia invested about $70 per capita on education which was the second least in the world, i.e. higher than Africa only. Among the Asian countries, as per the growth rate was concerned the south Asian countries were relatively low, the lowest being 2.2 percent by Sri Lanka which was followed by India with 3.9 percent.

- Agrawas, P.D.: “Unit Cost in Conventional and Distance Education System”, in B.N. Koul, et al. (eds.), Studies in Distance Education, AIU/IGNOU, New Delhi, 1988.

The author attempted to estimate the unit costs of imparting entrepreneur development training programme through conventional and correspondence education of two different institutions in the study. The two institutions are Small Industry Service Institute (SISI), Karnal, Haryana, where education i.e. training was provided by regular classroom lectures; and the another was All India Manufacturers’ Organization (AIMO), New Delhi, where education/training was given through correspondence services. The findings of the study revealed that unit cost at AIMO was higher than that of SISI by Rs. 980 (39%). The variation in the unit costs was attributed to significant differences in terms of utilization of the intake capacity and other inputs. The under-utilization of infrastructure facilities in case of the AIMO at the rate of above 60 percent was found. The study suggested that the higher
unit cost in AIMO was due to the under-utilization of facilities at the institute. The study, however observed that the cost advantage of the distance education system over the conventional cannot be generalized due to various reasons like differences in the utilization of teaching facilities which may vary from one institution to another. Further the study suggested that there is a need for a detailed examination of cost aspects of professional courses that are provided through correspondence method.


The study estimated the private rate of return to higher education in India using a large amount of survey data, namely, from the degree holders and Technical Personnel Survey, 1981. Earning functions are scientific and technical education, and social sciences, arts and other general education. Gender specific earning functions are also estimated for the two higher education streams, and the rate of return to males and females are computed. The main findings of the study are that, in general, the higher is the level of education, the higher are the returns to education, that scientific and technical education fetches higher returns compared to social sciences, arts and other general education, and that investment in women's education is economically more profitable compared to men's education in all the streams of education.


In this book, Ansari analyses cross sectional financial data for the year 1988-99 in terms of unit cost per student at both institutional level and disaggregated level, i.e., at the faculty and departmental levels. The relevant
comparisons of sources of finance, patterns of allocation of funds across the teaching departments and unit costs per student among a group of 15 universities of different types and from different regions have been made.

The main findings of the study were the following:

(a) The total expenditure for 15 universities was 10 percent for non-recurring expenditure and 90 percent recurring.

(b) The highest share of 51 percent is accounted for by the central costs which obviously wide variations across the universities. While the central costs are as high as 74 and 71 percent for the Universities of Kerala and Kurukshtetra respectively, the corresponding shares for the Universities of Annamalai and Banaras are 32 and 40 percent respectively.

(c) The proportion of salary and non-salary expenses in the total central costs are almost equal, i.e., 26 and 25 percent respectively.

(d) The shares of academic departments in the total expenditure comes to 39 percent of which 23 and 11 percent respectively is accounted for by the payment of salaries of teaching and non-teaching staff and for the remaining share about 6 percent is spent on non-salary items within the departments.

(e) The average student costs for the sample universities has emerged marginally above Rs. 14,000, which after eliminating too high and too low cases comes to about Rs.12,000 per year, and

(f) There are glaring variations in unit costs; the highest being Rs.29,000 for BHU and the lowest of Rs.5,200 for HS Gaur. Lastly, the coefficient of variations indicates wide differences in the total unit costs and its components across the universities.
The following major conclusions emerge from faculty-wise analysis of unit costs:

(a) The per student unit costs of higher education falls in the range of about Rs. 5 to 18 thousand per year, the average, for 15 universities, being Rs. 10,000. Of this, 60 percent constitutes central costs. The payment of salaries to teachers comes to Rs.3,000 per student which account for about 30 percent of the total costs at the faculty level.

(b) The unit costs of education under the faculty of science has emerged almost twice the costs of arts faculty. The range of costs varies from the lowest of about Rs.4,000 for Annamalai to the highest of Rs.35,000 for Calcutta; the average being marginally above Rs.18,000. Although the per student payment of salaries of teachers has emerged lower for science faculty, as compared to arts, the percentage share is merely 22 percent since the significant proportion of expenses is captured by the salary of supporting staff and non-salary items in science faculty.

(c) The per student costs of commerce and management comes to about Rs.7,000 and the average per student payment of salaries to teachers comes to Rs.2,100 which is much lower as compared to the corresponding figures for the faculties of arts and science.

(d) The costs of the faculty of law are the lowest at Rs.2,500 per student per year. The unit costs however vary from the lowest figure of about Rs.800 for HS Gaur to Rs.11,000 for BHU.

(e) As regards the professional education, the per student costs of the faculty of agriculture has emerged Rs. 1 lakh. Almost fifty percent of the total costs were accounted for by non-academic activities.

(f) The per student costs of the faculty of engineering and technology was Rs.1.27 lakhs.
(g) The unit cost for the faculty of medicine with respect to the select universities was about Rs.1.5 lakhs.

The following are the main findings in relation to cost-effectiveness of higher education:

(a) The overall performance of higher education system is very low which may also be construed to mean that wastages as measured in terms of failure are very high.

(b) The endeavors to promote professional development, as measured by proportion of students in technical/ vocational disciplines, are much less than desired, especially in the context of modernization of economy; and

(c) The achievements, with respect to ‘academic excellence’ as denoted by the proportion of students passed out with first division (60 percent and above) marks, are awfully low.

2.4 Work Done in North-East India

The empirical research study on the problem of economics of education in the north-eastern region of India is perhaps a very new area of interest as hardly published literature on the problem has been available inspite of the best efforts of the researcher. However, five such studies conducted, 3 in Mizoram and 2 in the Manipur context may be reviewed as under:


In the context of the study the authors conducted a survey for school education in Mizoram. An attempt was made to estimate the per pupil
expenditure at the level of primary, middle and high schools and the analysis of the study was made on the basis of the data of expenditure incurred by the 72 sample schools located in both urban and rural areas of Lunglei district. Further the analysis has been done separately each for the relevant survey data collected from the government and the private primary, middle and high schools.

The estimation of per pupil expenditure was made on the category of government and private schools for the levels of education under study.

The study observed that the per pupil expenditure was highest in the government middle schools followed by primary schools. In case of government aided middle schools and the government high schools, the per pupil expenditure were almost equal. The per pupil expenditure of government aided high schools, however is marginally higher than that in government high schools.


Lalliani conducted a study on the growth of primary education in Mizoram during the Post-independence period. Further an attempt was made to analyse the growth of enrolment, expenditure and other infrastructural facilities at the primary level of school education. Some of the main findings of the study were as follows:

(a) The share of public expenditure on the primary education increased from 34.5 percent in 1953-54 to 50.7 percent in 1971-72 but later on it gradually decreased. In 1985-86, the rate of expenditure on the primary education decreased 32.2 percent.
(b) The ratio of plan outlay on primary education to total educational outlay also showed a declining trend.

(c) From 36 percent allocated for primary education in the fifth plan (1975-80), the allocation came down drastically to 12 percent in the seventh five years plan (1985-90).

(d) The proposition of expenditure on teachers' salaries increased from 79.5 percent in the year 1977-78 to 95.7 percent in 1982-83.

(e) The annual non-teacher cost per pupil was Rs. 75 in 1986-87.

(f) The cost of physical formation i.e. capital cost like buildings, etc., constituted just 1 percent in 1986-87.

The study clearly revealed that infrastructural facilities at primary education level were extremely limited and inadequate.


The author investigated, among other things, the pattern and growth trend of public expenditure on education in Mizoram since 1972-73: the sources of educational finance with special reference to college education-their organization, control and administration; the unit cost of college education and the pattern and trend of unit institutional costs; the relationship between unit cost and enrolment size; and direct private cost of college education and the impact of socio-economic status of parents on the educational expenditure of children.

Some of the main findings of the study were:

(a) Public expenditure on education was found increased annually at the rate of 8.1 percent in nominal terms and 3.75 percent in real expenditure during the period 1972-73 to 2001-02. The share of education in total
revenue expenditure varied between 11.55 percent and 18 percent during 1972-2001. The share of expenditure on college education increased from 4.8 percent to 12 percent. The expenditure on college education has recorded the highest growth rate while secondary education the lowest. Expenditure on college education increased by 243 times in nominal terms and only by 19.8 times in real times.

(b) On the sources of fund for education the share of government in the finding of education in Mizoram has increased over the years while students’ contribution in the form of fees declined considerably. Funds given to private educational institutions are controlled and regulated by grants-in-aid rules of the state government.

(c) Unit cost of education at the college level was found increased by 2.8 times in current prices and by 1.3 times in constant prices during 1976 to 1986.

(d) The study observed that the unit institutional costs of education varied sharply between government and private colleges. Education in the university colleges was relatively costly as compare to colleges under state government and private management. The unit costs of education in the university colleges were higher by 102 percent in state colleges and by 172 percent in private colleges. The variation in unit cost may be attributed to difference in average pay of teacher and student-teacher ratio. Fee receipt per students was relatively high in private colleges compared to colleges under government management. Fees contributed approximately 7 percent of the total cost in the university college whereas the proportion in the state government and private colleges were 10.81 percent and 28.52 percent respectively.

(e) The lowest cost per student was associated with Arts and Commerce college. The unit cost of education was the highest in the colleges serving the three courses of Arts, Science and Commerce.
(f) The study also observed the size of enrolment where the unit cost per student was the lowest was 73,426 and the minimum cost corresponding to this level of enrolment was Rs. 273. Meanwhile the cost curves relating to middle school, high school and college were concave to the origin indicating that these curves have inverted U-shaped.

(g) The study found out the sum of net institutional cost and private cost provides the estimates for total cost of higher education. The total unit cost was estimated at Rs. 14,582 per student per year. The cost of education was highest in the university college and lowest in the private colleges. The total costs of completing the two year pre-university course and three year degree course was estimated at Rs. 96,152 per student in the University College while the same course required Rs. 71,084 and Rs. 65,063 per student in the state and private colleges. The cost of education in the university college was 1.35 and 1.48 times higher than the costs of education in the state and private colleges.

(h) Institutional costs constituted 27.14 percent of the total cost while private costs had accounted for 72.86 percent of the total cost of higher education in Mizoram.


In this study, the per pupil unit cost of education and internal efficiency of the costs in government elementary schools in Imphal West and Imphal East District of Manipur. The main findings of the study were:

(a) Salary cost in the government schools has been increasing, while the enrolment has been decreasing.
(b) The unit cost per pupil has increased every year.

(c) The overall input-output ratio is estimated at 1.46 instead of exactly 1 and the average number of student years spent per successful pupil, i.e., the pupil who has completed the 8 years elementary education course, is 12 instead of exactly 8 (i.e., 8 years course), the efficiency level of all the school is low.

(d) The teacher-pupil ratio is very small. It is 1:14 as against the general norm of 1:30.

(e) All the schools cannot utilize the prescribed working days fully.

(f) 86 percent schools cannot utilize the enrolment capacity created fully.

(g) The elementary schools with an enrolment of 240 pupils at the minimum are realizing the economies of scale, while the schools with less than this number would suffer from diseconomies of scale.


The study found out the unit cost per student and internal cost-efficiency for the expenditure incurred on three years undergraduate education programme in four Government Colleges situated in Imphal, such as D.M. College of Arts, D.M. College of Science, G.P. Women’s College and Imphal College, during the period 1999-2000 to 2001-2002. It also examined whether a college is able to produce the maximum number of graduate and whether the potential economies and economy of scale exist in the colleges. Some of the main findings of the study were:

(a) The lowest unit cost of Rs. 8,456 per student per annum was in the case of D.M. College of Arts and the highest Rs.27,697 in D.M.
College of Science, while it was Rs. 18,633 in G.P. Women’s College, and Rs. 13,878 in Imphal College. The basic reason for high unit cost was due to failure to utilize the enrolment capacity created.

(b) The unit cost was high due to under-utilization of enrolment capacity created in the majority of the colleges.

(c) Science education was more expensive than Arts education.

(d) Optimum teacher-student ratio was found in all the colleges.

(e) Every teacher worked 1 hour and 41 minutes per day as against the UGC norm of 2 hours 40 minutes per day.

(f) The effective cost of producing a graduate was high due to high wastage.

(g) The colleges with an enrolment capacity of 1635 students are realizing the benefits of economies scale.

(h) All the colleges were not in a position to utilize the facilities available at an optimum level so far as created enrolment capacity, prescribed by teaching days and hours, and teaching inputs are concerned.

In this way, the conclusions on different aspects of economics of education have been drawn by various studies. In the next chapter-III, the Financing of the Manipur University is discussed.