CHAPTER II

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Before conducting research in any area it is essential for the researcher to review all the related literature available in that area. This helps the researcher to familiarize himself/herself with the area and enable him/her to plan out his/her own study precisely and systematically. He/she can also be aware of what has not been done in the particular area and be in a position to conduct studies to fill in the gap. "Every research project should be based on relevant thinking and research that has preceded it. When completed, it becomes a part of the accumulated knowledge in the field and so contributes to the thinking and research that follow" (Fox 1969, p.111). Research takes the advantage of the knowledge, which has been accumulated in the past as a result of constant human endeavour. A careful review of research literature on the problem area to be investigated is one of the important steps in the planning of any study.

Walter Borg explains that this aspect of research i.e. review of pertinent literature involves "allocating reading and evaluating reports of research as well as reports of casual observation and opinion that are related to the individuals planned research project". This type of review is not the type of general reading ordinarily
associated with selecting and recognizing problems in the general area of interest but goes beyond this. This review is an extensive, thorough, detailed and an evaluative process aimed at extracting detailed information concerning a particular topic or area of interest. The present research project deals with the cost analysis in higher education in Goa. All the researches conducted so far in India relating to the present study have been presented in the following pages.

2.1 Studies on Sources of Finance in Higher Education

The major objective of the study conducted by Rizvi (1960) was to investigate the question of financing educational facilities in less-developed countries, with special reference to higher education. The following specific research questions were raised to investigate the problem: (i) was there any method, which could determine the optimal level of investment in the provision of educational services? (ii) What should be the proper role of the state in this sphere? (iii) Was there any special form of investment that could be considered desirable for less-developed countries with respect to higher education? (iv) What was the historical retrospect of educational finance in India? (v) In the light of the statistical data, was the size of the educational expenditure consistent with socio-economic policy of the country expressed through its official channels? (vi) Was the expenditure on universities and colleges in India, and its distribution between the different types of education, of a size and character that reflected optimum level of investment? If not, what were the main obstacles and bring them adequate resources but without curtailing this autonomy or free choice of individuals? (vii)
If the appraisal showed that the need for additional resources was imperative, who should acquire them and how?

The investigator came out with the following findings: (i) The problem of resources allocation was real and almost universal and there was no universally acceptable formula that could serve as an easy, mechanical and fool-proof device for determining the size of the economic resources which tended to bring optimum investment in the provision of educational services; (ii) There was disagreement as to who or which institutions should perform the process of valuation. Different communities belonging to different political creed approached this problem differently and consequently, their emphasis on the role of the state in this respect also showed radical differences. (iii) The lesson for less-developed countries was that state participation in education was necessary, particularly given the kinds of objectives commonly supported in such countries. However, state participation would chart to be strictly on an individual rather than an institutional basis, if it was desired to encourage education, which could be in tune with the economic and socio needs of the country. (iv) In view of the acute economic backwardness, the right policy for less-developed countries would be to develop all types of education to facilitate economic development and to banish disease, poverty, hunger, and ignorance. They should invest more in scientific and technical education; (v) Creation of new universities, expansion of arts and science colleges, professional, technical and special education colleges and a substantial increase in enrolment were the highlights of the post-independence era. However, the complexion of educational structure and its problems were more or less the same as they were in pre-independence period. The only difference was that the outlook
had become rather more expansionist. (vi) There had been a continuous rise in educational expenditure. Notable as this increase appeared to the proportion of the outlays diverted to education and higher education of NDP (Net Domestic Product) were 2 per unit for general education and 0.37 percent for higher education. Expenditure on higher education incurred by private bodies was 65.9 percent, whereas on government maintained institutions was 33.6 percent. The public sector had larger share in the institutions imparting professional and technical education. Income from public funds and fees continued to be the mainstay of the higher education finance. The bulk of the public expenditure on education was incurred on primary education. Secondary education was given second priority. Higher education amounted for 11.4 percent of the total public expenditure of the education. (vii) The expenditure on higher education in India and its distribution between the different types of education was of size and character that was well below the optimum level of investment. With reference to criteria of both the democratization of educational opportunities and higher education’s effectiveness to serve as a sound and dynamic basis for the solution of the nation’s socio-economic problems, there existed a vast disparity between the community’s honest professions and a record of its actual achievements. This situation could be attributed to the lower level of investment but primarily to the system of finance by which the already inadequate resources were actually made available to the institution of higher education.

*Sharma* (1978) conducted a study on resource Allocation on Education with the objectives: (i) to examine the amount of resources were allocated to education as a percentage of national gross product and within education, to various levels, (ii) to
study the pattern of allocation of resources to education by state government; (iii) to study how this compared with state income; (iv) to examine whether allocation of resources on education by India were commensurate with the returns from investment in education; and (v) to study the ways the resources were allocated to education.

The findings of the study were: 1. In 1971 the proportion of GNP spent on education by India was 2.5 percent in the US 6.7 percent. The USSR 7.3 percent. The number 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 the USSR had 14.2, 25.68 and 30.9 percent respectively. 2. During 1971-72, Manipur spent 10.71 percent of its total SNDP the highest among the states. It was followed by HP and Kerala with 5.63 and 5.31 percent respectively. The smallest proportion (0.36 percent) was spent by Jammu and Kashmir. 3. Seven states had a lower per capita income but their expenditure per student was comparatively higher. 4. 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. 5. 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. 6. Manipur spent the highest (0.79 percent) on higher education. The average for all the state was 09.25 percent. 7. Bihar spent 0.20 percent of its SNDP on grants to universities and colleges. The average proportion of grants to their SNDP was 0.08 percent. 8. The majority of states allocated 20-25 percent of their total state budgets to education, but Bihar, Nagaland, Orissa, Haryana and
J & K allocated less than 20 percent. 9. The proportion of funds to total budget allocated by state government had little relevance to per capita income. 10. 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 from 24.3 in 1971-72. 11. The share of higher education to total expenditure on education was around 10 to 14 percent. This pattern changed slightly between 1971 and 1975. 12. The states which were economically backward, paid a little more attention to higher education compared to the economically developed states. 13. The pay scales of teachers varied from state to states. In some states they varied between private and government managed institutions. 14. No systematic planning in allocation of funds appeared to have been followed by the state governments. 15. 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 allocations of grants. The relationship between the enrolment variations and grants was found to be poor. No relationship was found between enrolment data and the grants from UGC. 16. The method of grants adopted by the state governments differed from university to university.

Ramchandran (1981) studies the problems of higher education with special reference to the financing of education during the period 1957-75. The major objectives of the study were: (i) to identify vital problem areas in higher education such as enrolment, expenditure, financing, and planning; (ii) to assess the total costs in higher education classified under relevant institutional categories; (iii) to compare costs for different aspects of higher education like salaries, laboratories,
libraries, students amenities and (iv) to compare investment of different agencies in higher education like the state government the UGC etc.

The major findings of the study were: (i) there was a phenomenal growth of institutions of higher education in Kerala during the period under review. There was only one university in 1956 and the number increased to four and the number of arts and science colleges increased from 46 to 128 by 1975-76. The establishment of colleges was done without much forethought and planning. The district-wise distribution of arts and science colleges and the population served by each college showed in certain districts like Quyilon, Palghat, Cannanore and Calicut, the number of colleges were on average, less in relation to their population. (ii) More than 82 percent arts and science colleges in the state were under private management; (iii) the average annual rate of growth of enrolment for general education courses was about 11.8 percent during the period under study. (iv) Public expenditure on education has been growing very rapidly in the state of Kerala. A sum of Rs. 1,037 lakhs, about 31.5 percent of the total revenue expenditure was spent on general education in 157-58, but the total expenditure increased to Rs. 13,226 lakhs by 1975-76, i.e. 37.3 percent of the total expenditure of the state. Though the percentage of annual increase was not high, in absolute terms the increase was to the tune of 11.76 times. The index of growth during the period under review was 1275. The average annual expenditure on education during the period of study was about 34 percent of the state’s total budgets (v) The total public expenditure on general education was increasing year after year, the corresponding return to the revenue of the state government was very low. The receipt under education was about 3.6 percent of the total revenue receipts of the
state in 1975-76, whereas total public expenditure on general education during this year was to the tune of Rs. 13,226 lakhs. (vi) The expenditure on university education showed phenomenal increase. When the total expenditure increased by 11.76 times, the amount spend in 1957-58 the share of higher education increased by 28.61 times over the 1957-58 amount. The total expenditure was only Rs. 52.98 lakhs in 1957-58 but it increased to Rs. 1,568.79 lakhs by 1975-76 showing an increase to 29.61 times. The expenditure on higher education was only 6 percent of the overall expenditure on education in 1957-58 but it constituted 11.9 percent tin 1975-76. (vii) The bulk of the public expenditure on higher education was spent for the development and maintenance of arts and science colleges in Kerala. The total direct expenditure on these colleges in 1957-58 was only Rs. 22.22 lakhs and formed about 41.9 percent of the overall expenditure on higher education. An amount of Rs. 1,262.93 lakhs was the direct expenditure on arts and science colleges in 1975-76 and constituted 80.5 percent of the total expenditure on higher education during that year. Thus expenditure on higher education showed tremendous growth both as a percentage of the total expenditure on higher education as well as in absolute terms.

Shah and Srikantiah (1981) conducted a study on the Education earnings and income distribution and an inquiry into equity issues involved in the government financing of higher education in India. Shah and Srikantiah analysed the role of education as an equalizer and a tool for socio-economic change. The main objective of the study was to examine the syndrome of structure of subsidy and the equality of educational opportunities in the context of the Indian economy.
The main conclusions of the study were as follows: (i) Persons with low mean education, of older age, and preponderantly self-employed showed greater education and income inequalities; (ii) Persons with higher mean education, of younger age, and declining proportions of being self-employed showed less distribution of education and income. (iii) Tendency towards better size distribution of income was very slow and was not consistent. However, the financing of education had not furthered inequalities (iv) The bridging of educational distance inter-temporally, the creation of efficient human capital stock and better distribution of income were clear social benefits with far-reaching effects on the future course of the economy. (v) The emerging human capital stock was characterized by younger persons with more education and expected to have multiplier effect on future distribution pattern and earnings. (vi) With regard to the overall subsidy, the stratified effect was much more pronounced than the equalizer effect. The specific subsidy, in contrast, did have the equalizer effect in the sense of higher per capita subsidy going to beneficiaries with low per capita income. (vii) Specific subsidy had reduced the educational distance between various classes and generations as revealed by relative enrolment rate and relative participation rate which had improved for BC and EBC categories; (viii) The educational level of the country was estimated by the author by considering different aspects of education (qualitative and quantitative) and using factor analytic techniques for constructing the composite index of educational level.

A study on the development and some problems of higher education in Manipur with special reference to financing of education since 1949 was studied by Singh (1986). The specific objectives of the study were (i) to trace the
development of higher education in Manipur since 1949, (ii) to identify and probe the vital problem areas like a) enrolment trends; and b) patterns of expenditure, (iii) to analyse issues concerning the imbalances, if any in respect of development of higher education in different parts of Manipur state; (iv) to make a detailed analysis of the problems of financing of education in respect of a) the total cost of higher education classified under the relevant institutional categories; (b) comparing the cost for different aspects of higher education such as salaries, laboratories, libraries, conduct of examinations, student amenities, etc. c) Comparing the investment of different agencies like the state government and the UGC in different aspects of higher education, and v) to suggest policy changes in higher education on the basis of the findings of the study.

The historical method was employed. Data were collected from primary as well as secondary sources. Some of the major findings were: 1. Higher education in Manipur started in 1946 and was still at the stage of infancy. There was clear progress in respect of various aspects of higher education like the establishment of new institutions, enrolment of students in colleges, and post-graduate classes, number of teachers, etc. Research had been badly neglected. The expenditure on education had been increasing continuously during the past 33 years. 2. There was 727 times increase in expenditure on higher education from 1949-50 to 1979-80. The state's expenditure on government and private colleges (arts and science) has increased. The UGC's grants to the colleges during 1960-61 to 1974-75 covered only 9 percent of the expenses. The income as well as expenditure for 1971-72 to 1984-85 increased considerably. Administrative expenditure accounted for the bulk of university expenditure. Expenditure on furniture and equipment,
building, examinations, students activities etc. increased. The increase was minimum on libraries. There appeared to be a good deal of variation in expenditure on scholarships. 3. The overall problems of higher education were not much different from those in other parts of the country. The general tendencies like mushrooming of institutions, ballooning of students enrolment and ever-increasing expenditure were seen. There were innumerable problems of higher education like unplanned growth of institutions, growth of educated unemployment, lack of infrastructure, imbalances arising in the course of expansion, improper budgeting systems, inadequate supply of teachers and non-availability of text books.

Financing of college education in private sector in Kerala was studied by Mathew (1988). The objectives of the study were 1) to identify and evaluate various sources institutional and non-institutional, public and private of finance and the trend and pattern of financing of college in the private sector in Kerala 2) to examine the changes in the pattern and trend of expenditure with a view to assessing their significance in relation to the goals of higher education 3) to discuss the relationship, if any, which exists between financing and academic performance as adjudged by the qualification of teachers and examination results.

The major findings of the study were 1) the state government was the most prominent source of financing of colleges in Kerala meeting 90 percent of the total expenditure. The UGC and the college management ranked next in supplying the necessary funds. The university of the region contributed a very small percentage of the expenditure of colleges 2) salaries both of teaching and non-teaching staff, were the most dominant component of college expenditure. In the course of about
a decade, the average salary grant from state increased more than 10 times 3) Scholarship and stipends were the next important items. The state government grant for this head had been declining over a period of time. The library, laboratory and maintenance grant from the state constituted less than 1 percent of the total. 4) The management of the colleges made substantial contributions initially for the non-recurring expenditure particularly on purchase of land, construction of building, development of laboratory etc. 5) The UGC though having a small share in financing the expenditure of colleges, was increasing in importance. 6) The non-institutional finance for private college fees, donations and miscellaneous receipts were picking up through their share in the total college finances was still small. 7) Donations received by the colleges from the staff, students, parents and the general public had a relatively low share 8) The capital expenditure of the colleges had increased nearly five times in the course of 14 years from 1972-86. Similarly the recurring expenditure had also increased quite significantly though not at the same pace as the capital expenditure. 9) In view of the major outgo on staff salaries, the colleges in Kerala were not able to spend much on development. In fact, the deterioration in higher education in the state can be attributed to unionisation and the method of time bound promotion rather than merit based promotion. This would hike the salary bill. 10) Though the performance of some colleges in the state was quite satisfactory, by and large, there was much to be desired in the academic performance of majority of the colleges.
2.2 Studies on Cost Analysis/Cost Benefit Analysis of Education

Chandrakant (1975) conducted a study on the pattern of Expenditure and per student cost in the Indian Institute of Technology. The objectives of the study were: i) to analyse the pattern of actual recurring expenditure of the Indian Institute of Technology (IITs) relating to the year 1971-72; ii) to repeat the earlier study based on data relating to actual expenditure for the year 1968-69; iii) to attempt a comparative analysis of the pattern of actual recurring expenditure for the years 1968-69 and 1971-72; and iv) to attempt an analysis of the determinants of cost structure through the estimation of long run cost curves with a view to answering questions relating to future enrolment policies of the IIT's. The sample consisted of five IIT's. The data were collected by using a questionnaire. The findings were (i) Analysis of expenditure by functions indicated that the institutional expenditure accounted for about 80 percent of the total expenditure. Municipal expenditure accounted for about 16 percent and the balance of expenditure was on university functions; (ii) There was a tendency to increase the expenditure on functions other than institutional at the cost of institutional functions; (iii) Analysis of expenditure by items indicated that a major portion of the expenditure, about 51 percent was accounted for by the training component within the training component, salaries and allowances of teaching staff accounted for a major share of expenditure (iv) A variant of the analysis of expenditure by items indicated that as an Institute grew in age, it spent relatively more on salaries and allowances. Further, it exhibited a tendency to decrease expenditure on library and other operating costs; (v) As usual, the training component accounted for a major portion of the expenditure per student. In the case of post graduate classes, institutional expenditure per student was fairly close to total expenditure per student (vi) Analysis of fixed costs
indicated that they were higher for undergraduate training than for post graduate classes. There was a definite advantage in the joint production of undergraduate and post graduate outputs as it resulted in a considerable saving in fixed costs. (vii) The Institutes were all in the increasing return to scale phase in all respects in the long run with adequate scope for expanding enrolment capacities in respect of both the levels of education. The expanding capacities were more among the younger institutions than among the older institutions. (viii) Long-run optimal size of enrolment did not exist for the IITs. (ix) Estimates of short-run optimal levels of enrolment in almost all the cases were higher than those based on institutional expenditure. (x) Estimates of the ratio between optimal enrolment in undergraduate and post graduate classes were generally higher than the actuals.

Ramanujam, Manocha and Bala (1978) studied the pattern of Expenditure and per student cost of Degree and Diploma courses in Engineering and Technology in India. The objectives of the study were: (i) to help the engineering colleges and polytechnics appreciate their relative pattern of expenditure; (ii) to attempt a comparative analysis of the pattern s of recurring expenditure at two different points of time; (iii) to estimate the level of quality of each institution taken up for the study, and (iv) to analyse the determinants of the pattern of per student expenditure.

From among all the colleges, a sample of sixty-three engineering colleges and eighty-five polytechnics were chosen. Of these, forty-nine engineering colleges and eighty polytechnics responded to the mailed enquiry. The forty-nine
colleges belonged to different types of management and were spread over all the
four regions.

The findings were: (i) The distribution of the responding engineering
colleges by the age and the type of management indicated significant association
between the two factors. This implied that engineering colleges belonging to
certain types of management were started during specific period. However, regular
considerations did not appear to have significant influence over the age structure of
engineering colleges (ii) The pattern of enrolment observed did not have
significant association with either the management or regional factors; (iii) Outt-
turn-intake ratios were observed to varying widely among the responding
engineering colleges; (iv) 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 significant. (v) Quality differentials
were found to be ranging widely among the responding engineering colleges.
Quality differentials were also observed to be significant among the four regions
based on the 1968-69 data and among different age groups of colleges based on the
1971-72 data. (vi) Expenditure on training constituted a major portion of the total
expenditure of all engineering colleges. This was followed by expenditure on
supporting services and that on welfare services. Further, salaries and allowances
of all categories of staff accounted for nearly 65 percent of the total expenditure.
(vii) Per student expenditure was observed to be varying widely among all
colleges. For instance, in 1968-69, per student expenditure ranged between Rs.
691 and Rs. 4,048 while in 1971-72 the variation was from Rs. 481 to Rs. 7,304.
These observed variations in the pattern of per student expenditure among the
responding colleges were found to be influenced by the management and location factors and also the levels of quality. (viii) Per student expenditure estimates relating to under graduate and post graduate classes were very close to those observed in the case of the IITs. Estimates of per student expenditure of undergraduate classes in the IITs were found to be far above those in the case of engineering colleges where predominantly undergraduate classes were organized. (ix) There was no significant difference between the two types of management in respect of average levels of enrolment in polytechnics. Likewise, locational advantages and age factor did not influence the pattern of enrolment among the responding polytechnics. (x) The two types of management were observed to differ between themselves in respect of average out-turn-intake ratio. On the other hand, it was observed that there were significant differences between the two types of management in respect of average teacher-pupil ratio. (xi) The management and regional factors were observed to have no influence on the level of quality of the responding polytechnics in 1968-69. On the other hand, the age factor appeared to have influenced their levels of quality. (xii) A relatively more stable pattern of per student expenditure was observed in government polytechnics than in non-government polytechnics. Average per student expenditure was found to be more in government polytechnics than in non-government polytechnics. (xiii) Estimates of elasticity of total cost for all the polytechnics indicated that almost all the responding polytechnics operated in the increasing returns to scale phase. (xiv) In relative terms expenditure on training was more in engineering colleges than in the IITs. Polytechnics spend relatively more on training than engineering colleges. Among the three types of institutions, the IITs were observed to be spending the highest proportion of their expenditure on supporting services.
Gogate (1979) studied the unit cost of higher education for Arts, Science & Commerce colleges in Maharashtra (1973-74 to 1977-78). The objectives 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 state had 167 arts and commerce colleges, 67 arts and science and 99 arts, science and commerce colleges. These were all multi-faculty colleges. In addition, there were 31 commerce and 21 science colleges. In all, there were 385 colleges. Of these colleges, about 10 percent were included in the sample. It was a stratified random sample. The information collected was for the years 1973-74, 1976-77 and 1977-78. A few colleges could not supply information for all the years. The sources for collecting data were primarily the records in the office of the Directorate of Higher Education.

The major observations and findings were: (i) Colleges, generally, received funds by way 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. (ii) The sources for grants were the State Government and the UGC. (iii) 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. (iv) Till 31 March 1979, the grant-in-aid formula to colleges was deficit-oriented and was as follows: Grant = 50% deficit + 5% or 10% admissible expenditure (for student strength of above 1,000 or less than 1,000), + up to 33.3% of dearness allowance provided the deficit
was not covered by 50% + 5% or 10% of admissible expenditure. (v) The average cost per student in single-faculty science college was the maximum and that in the single-faculty commerce colleges was the minimum. (vi) 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 a half times. (vii) Expenditure on staff emoluments and essential expenditure was 75 percent of the total cost during the previous five years. (viii) By and large, colleges had to spend about 25 percent on other items but as per Government rules this expenditure should be limited to 12 to 18 percent of the expenditure on salaries. (ix) Average cost per student in a college with a strength of less than 200 was Rs. 1009.21 in 1973-74 and Rs. 2169.66 in 1977-78. for a college with student strength of more than 2,000, it was Rs. 458.40 in 1973-74 and Rs. 791.64 during 1977-78. Larger colleges were more economical than smaller ones. (x) During 1973-74, the per student expenditure in a college with arts, science and commerce faculties was Rs. 486.35 and the same in 1977-78 was Rs. 1452.58. corresponding figures for a science college were Rs. 10156.92 in 1973-74 and 1539.18 in 1977-78. For a commerce college, the figures were Rs. 373.07 during 1973-74 and Rs. 481.28 during 1977-78.

Ramanujam et al (1979) studied the pattern of expenditure and per student cost in educational institutions in Jammu and Kashmir. The aims of the study were: (i) to help the educational institutions at various levels in the State to appreciate their relative pattern of per student cost better and (ii) to analyse the determinants of cost structure through the estimation of long-run cost curve, with a view to facilitating future enrolment policies.
The per student cost estimated at various levels of education in this study referred to per student per annum recurring cost for the given level of education. Relevant data for the analysis pertaining to the year 1973-74 were collected from forty-three middle schools, fifty-two high/higher secondary school, nine arts/science colleges including the Kashmir University, one teachers' training school, one teachers' training college, seven ITIs/craftsmen training institutes, one engineering polytechnic, one engineering degree college, one agricultural college and one medical college. Data were collected through a questionnaire designed for the purpose and through personal canvassing.

The findings were: (i) At the middle school level the average per student recurring cost was of the order of Rs. 232, of which 85.9 percent was accounted for by salaries and allowances of the teaching staff and 8.7 percent by salaries and allowances of the non-teaching staff. The expenditure on library and other operating cost and on scholarships was found to be very small in proportion. An analysis of the cost curve indicated that all the middle schools in the State were operating in increasing returns to scale phase. (ii) The per student cost estimated in respect of high/higher secondary schools located in the rural areas was less than that in urban areas. As an analysis of the cost curve showed in all the schools, irrespective of the districts, increasing returns to the scale of operation were observed. (iii) At the undergraduate level in arts and science, the per student cost was Rs. 382 and Rs. 575, respectively. Further, the pattern of distribution of expenditure among various components at both Arts and Science courses was found to be more or less the same. When compared to undergraduate courses, the post graduate courses in Arts and Science were found to be very expensive. The
average per student cost post graduate courses in Arts was found to be Rs. 2,624, while for Science courses it was Rs. 5,314. (iv) At the teacher's training (certificate level), the per student cost was Rs. 2,075, of which 78.9 percent was accounted for by scholarships. In contrast to teacher's training (certificate), the degree course was less expensive as the average cost was only Rs. 789. This was because in the case of the former more than three-fourths of the total expenditure was on scholarships.

*Sharma* (1980) provides a comparative analysis of costs of a large number of general universities, and professional universities for the period 1974-75 to 1976-77. It was found from this analysis that unit operating costs in affiliating universities were higher than those in residential universities. The central universities supplied education at higher cost than the state universities. The study also estimated that optimum size of the university is 3097 students if the university has to realise economies of scale. The policy conclusion of the study is quite interesting suggesting the need for more in depth studies in this field.

*Shah and Inamdar* (1980) studied the unit cost of higher education at the post graduate level in the university of Poona. The major findings were: (i) 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 million in 1979-80. (ii) The expenditure per student at the post graduate level incurred by the university, exclusive of the expenditure on general administration and common facilities had grown by nearly 50 per cent, from Rs. 2,369 in 1973-74 to Rs. 3,462 in 1977-78. The cost per pupil was the
highest in the science faculty and except for the year 1974-75 it was lowest in the humanities faculty. In 1977-78 costs per student in the 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./LL.M./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 post graduate examinations was added, the unit cost would go up by a further amount of Rs. 225.

Garg (1981) analysed the cost of the university of Punjab from 1950-51 to 1974-75. The major objectives of the study were to: (i) examine the trends of expenditure by objects and with respect of the functions of the university, (ii) analyse the trends in the level, variation and subsidization of unit costs, (iii) examine the applicability of cost-functions in relation to the optimum use of the resource-inputs, and (iv) determine the level of private costs by types of courses. It was a case study aiming at an ex post factor cost analysis of the 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 locative efficiency of resource-inputs. This was realized through time and cross-sectional study of both institutional costs and private costs. The cost factor was examined by a systematic attempt which covered various aspects. For determining the private costs, a student's questionnaire was developed by the investigator. The sample consisted of 382 students, 279 from affiliated colleges and 103 from teaching departments. The sources of other data were the annual statistical surveys of the Ministry of Education, Government of
India, the annual reports of the Punjab University, The Punjab University Calendar
and the prospectus of affiliated colleges.

The major findings of the study were: (i) The level and composition of the
university expenditure during these years showed an upward trend with recurrent
expenditure increasing by 10.04 percent and capital expenditure by 1.77 percent
per year. (ii) Till 1969 the general administration had the largest allocations in
recurrent expenditure, followed by a shift in favour of teaching, municipal
services, students; welfare and general welfare functions of the university. (iii)
The university expenditure was mainly affected by inflation, displacement and
development. (iv) The cost-analysis of thirty 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. (v) The cost component of salaries was
predominant in all departments. (vi) The level of capital costs was higher in the
majority 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 compared to the
enrolment. (vii) The investigation of the dynamics of internal organization, in
relation to enrolment, number of teachers and variations in unit costs showed that it
was relatively consistent in the departments of Botany, Chemistry, Zoology,
Chemical Engineering, Law and English whereas the departments of
Anthropology, Bio-chemistry, Education, History, Political Science and Sanskrit
were relatively inconsistent in their internal organisation. (viii) Some departments
were making optimal use of their resources in terms of enrolment and teachers
besides other factors. Some departments were found to be undersized, and some had more enrolment as compared to the number of the teaching staff. (ix) Subsidization of unit costs from public funds had increased over the years except for a few departments. (x) The rate of subsidization of maintenance expenditure of hostels per resident increased from Rs. 0.33 in 1966-67 to Rs. 84.44 in 1974-75. (xi) The levels of hostel expenses and of fee rates and other charges were higher in private colleges charging more than the prescribed limit. (xii) The economic status of the students from teaching departments was found to be better than that of the affiliated colleges. (xiii) Demand for higher education was more from the people belonging to administrative and professional services, farming and business, respectively.

Reddy (1981) investigated whether the policies in relation to allocation of resources to different levels and types of education were rational and efficient in terms of rate of return. The investigation posed four specific questions centered around social and private rates of return on (i) professional and non-professional graduates; (ii) Professional graduates and post graduates like doctors, engineers, agriculture graduates and secondary school teachers and (iii) different levels of academic performance (first, second and pass class) among graduates and post graduates. The hypotheses formulates were: (i) the rates of return were higher for post graduates compared with graduates. (ii) The rates of return were different for graduates drawn from faculties of arts, science and commerce. (iii) The rates of the return were different for post graduates drawn from arts, science and commerce faculties. (iv) Rats of return were higher for professional graduates representing doctors, engineers, agriculture graduates, and secondary school teachers as
compared with non-professional categories of graduates and post graduates. (v) The rates of return were different within the professional categories between doctors, engineers, agriculture graduates and secondary school teachers. (vi) Rates of return of graduates and post graduates were higher for higher levels of academic performance as between first classes as compared to second class and pass classes.

The study revealed that (i) investment in post graduate non-professional education did not guarantee the expected financial success; (ii) social and private rates of return for all post graduate were found to be below 5 percent, except those with first class; (iii) A variation in the trend in social and private rates of return for graduates of different faculties was found. (iv) Post graduate education seemed to need special attention in terms of balancing the cost incurred and benefits accruing to individuals as well as to society; (v) the most favoured professional category of doctors and engineers was found to be distinguished from the not-so-favourable professional category of agriculture graduates and secondary school teachers. (vi) The superior students in terms of academic performance were found to be the highest beneficiaries.

George (1982) studies the economies of higher education in Tamil Nadu. The objectives of the study were: (i) to evaluate the economic factors that influenced higher education, (ii) to find out the impact of economic factors on the choice of various courses by the students, and (iii) to determine the private and social costs of acquiring higher education. The study was based on an analysis of data available on higher education in India, in general, and in Tamil Nadu, in particular.
The undergraduates from different faculties were selected systematically from seventeen colleges. Data were collected through a questionnaire, from published materials, and from government, semi-government and private sources. Data were collected with respect to the growth of enrolment and educational expenditure on higher education from 1960-61 to 1975-76. The data were analysed by percentages, correlation coefficient, factor cost, state’s net domestic product, expenditure on education, benefit cost ratio, etc.

The major findings of the study were: (i) There was no correlation between the cost per pupil and the enrolment at primary and university general education stages. (ii) There had been an increase in Government’s share of total expenditure on education at all stages except at the primary stage. (iii) Females, Scheduled Castes and Scheduled Tribes were still lagging behind at every stage of education as shown by the coefficient of equality. (iv) Considering the combined annual total expenditure of day scholars and hostel; resident, the private expenditure on professional education exceeded that of general education by 71 percent and 49 percent respectively. (v) The relative cost of higher education in Tamil Nadu with reference to the per capita expenditure on higher education and the per capita income of the States came to 8:1 (upper estimate) and 7:1 (lower estimate) for general education and 15:1 (upper estimate and 14:1 (lower estimate).

Sharma and Mridila (1982) conducted a study entitled “Economics of College Education: A Study of Hindu College, Delhi”. The objectives of study were (i) to discuss the educational component, enrolment capacity and actual enrolment, quality of student intake, student – teacher ratio and lecture inputs in the Hindu
college, (ii) to examine the unit cost of the college with reference to various subjects/faculties, and (iii) 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 the quality of graduate output.

The major findings of the study were: 1. Hindu college is one of the oldest colleges in Delhi, located in the main campus area of the University of Delhi. It offers various combination of subjects in the faculties of Science, Arts and Social Sciences. 2. The college had always operated with a magnitude of under – utilisation of enrolment capacity which ranged from seven percent to thirteen percent. 3. The college admitted a fairly large number of students who had done well at their higher secondary level. 4. The student – teacher ratio for the college as a whole was almost 30 percent. 5. 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. 6. The main component cost 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 to total budget was 88 to 98 percent during 1973-76. 7. The per student cost on teacher’s salaries was Rs. 1095 to Rs. 1541. The per lectures expenditure varied from Rs. 88 to Rs. 124. 8. The per student institutional cost varied from Rs. 1,617 to Rs. 2,258. 9. 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 courses was relatively expensive. 10. In general, the quality of students admitted to the college was
implications of the analysis of finances of correspondence education. The major findings of the study revealed that (i) the income remained constant whereas the expenditure had a rising trend; and (ii) the overall expenditure had increased about five times in 12 years (3) The per capita cost figures revealed that it ranged from Rs. 425 to Rs. 550 which is about less than one – third of the cost for a regular student. (4) Expenditure on establishment formed more than half of the total expenditure. (5) Expenditure on teachers’ salaries, teaching materials, contact camps, books and journals had shown a decreasing trend.

The economics of distance higher education with special reference to correspondence courses was investigated by Ansari (1989). The objectives of the study were as follows:
1. To describe the development of distance education with a special focus on its evolution.
2. To examine the theory of economics of distance education.
3. To discuss various aspects of the financing of distance higher education, particularly focusing on the qualitative and quantitative aspects and to suggest measures for a cost effective methodology that would ensure qualitative and quantitative development of distance learning.

The major findings were as follows:
1. The development of distance education has been highly uneven in India.
2. Thirty – four Indian Universities offered correspondence courses as on the day.
3. Large inter – state variations were observed with regard to availability of facilities for correspondence courses in different states.
4. While the conventional system of higher education is highly subsidized the distance learning system is almost entirely self-financed.

5. Revenue surpluses accrue in the majority of the institutes of correspondence education.

6. On an average, the per student cost of distance education is nearly 15-25% of the cost on the formal system.

7. Though the distance learning system is less costly as compared to the conventional system at a particular point of time, considering age and composition of the beneficiaries of distance learning system, it is clear that the overall returns from the distance learning system are likely to be relatively less than those for the conventional system. This is because they are generally of the higher age group with a shorter working period before them. As a result the overall cost effectiveness of the distance learning system may not be higher than in the case of conventional system.

8. A study of the inter temporal trends in the characteristics of the distance learning system shows that the conventions and practices of the conventional system are emulated in the distance learning system as well defeating the very purpose of the latter.

9. Low economic cost at a particular point of time should not be the lone criterion for preferring the distance learning system to the conventional higher education system.

Hebbare (1989) conducted a study with the objectives to construct age education earning profile for the employees in the electronic and electric industry and to estimate the social rate of return of investment at various level, of education.
The study revealed that the social rate of return was higher for higher levels of education and in bigger industrial units higher education gets higher returns than in smaller industrial units.

Gupta, (1990) conducted a comparative study of the private costs of teachers’ preparation in teacher training institutions under different management in U.P. The objectives of the study were (1) to estimate private costs of teacher preparation in teacher training institutions run by different managements (2) to examine the types and nature of incentives if any available to teacher trainees.

The major findings were (1) the average private costs of teacher training for Agra and Gorakhpur were between Rs. 750 and Rs. 951. For the hosteller however, the private costs in the case of elementary school trainees were Rs. 1452 and Rs. 1564 for Agra and Gorakhpur respectively. Once again the hostellers incurred higher private costs.

Kurup, Thatte (1991) conducted a study with the objectives to examine the extent of the resource crunch and its implications for progress in the sector of higher education in Maharashtra and to estimate the demand for and supply of seats for higher learning by the year 2001 and estimate the resource requirements for meeting this demand.
The study revealed the following:

1. Low level of capital expenditure, inadequate funds from the government etc had damaging effects on the quality of education provided in institutions of higher education; 2. The resource shortage had affected science colleges more than commerce colleges; 3. The student-teacher ratio and per student expenditure on the one hand and standard of output and academic achievement of students on the other were positively associated; 4. Similarly, experience of teachers and capital expenditure in particular and total expenditure in general, by the colleges were also positively associated with academic achievements; 5. The unit cost of higher education in Maharashtra was estimated to be Rs. 1,719; 6. There appeared to be a U-shaped relationship between the unit on the one hand and the faculty strength on the other; 7. On the whole, the study concluded that institutions of higher education in Maharashtra were suffering from a severe financial crunch which has implications for the quality of higher education.

Salim (1993) analysed the institutional and private costs of higher education and the extent of its subsidization according to the socio-economic status of the students. The objectives of the study were (i) to assess the unit institutional cost (recurring and capital) of higher education by its levels and types (ii) to estimate the private cost of higher education according to socio-economic categories and (iii) to enquire the extent of government subsidization of higher education and the subsidization of students according to their socio-economic background. The major findings of the study were: (i) The burden of the government for providing technical education was much higher than in general education and its burden for a
post graduate student was much higher than that of a degree student; (ii) The capital cost which has been the most neglected category in the study of educational costing, constitutes a significant part of the institutional cost of education; (iii) The private cost per student in technical education was only slightly higher at the degree level and substantially lower at the post graduate level than that of general education; (iv) The facilities of higher education are still being appropriated mostly by high income and occupation groups who also share most of the benefits of the subsidies; (v) Higher education was heavily subsidized by the government and this policy has only aggravated the inequalities.

A study entitled “Economics of the open Learning System: A comparative Cost of Higher Education Through IGNOU” was conducted by Mridula (1991). The objectives of the study were: (i) to analyse the cost structure of the conventional university system and the open learning system highlighting their respective limitations; (ii) to compare the unit cost of education in open learning system and the conventional system with a detailed breakup of unit costs for academic and non-academic activities; (iii) to analyse the size-cost relationship and to determine the optimum enrolment size of the open university with the help of the unit cost estimates; (iv) to make suggestions for a more cost effective system of open learning in India with the help of an analysis of the size-cost relationships.

The findings of the study revealed that the broad cost composition of open learning and conventional learning did not differ though the sub components of costs did differ. The unit cost of the open learning system was relatively lower. Unit costs and size were related to yield a U-shaped cost curve, suggesting the
potential use of this information for efficient use of resources in both systems of learning.

2.3 Implications for the Present Study

It is clear from the studies reviewed and presented in the preceding pages that several studies have so far been conducted on financing of higher education and cost analysis of higher education in India. However, such studies were conducted only in some of the states and a very few of the universities in India. Also most of these studies were confined to only a limited number of courses. Further, none of these studies were very comprehensive covering a large number of courses and different levels of higher education. The following aspects have not been investigated by the researchers so far:

- Significance of difference in private unit cost between different courses
- Correlation between economic status of the students and private unit cost.
- Association between family economic status and types of courses the students opt to study.
- Difference between actual and expected institutional unit cost in different courses.

Above all, it was observed that no studies on cost analysis of higher education have been undertaken in the recent years in general and after the implementation of Fifth Pay Commission scales in particular. Hence, the need for the present study.