CHAPTER 1

INTRODUCTION
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1.1 Background of the Study

1.1.1 A Brief Understanding

Alfred Marshall, a noted classical economist, in his book “Principles of Economics” emphasizing about the value of investing in human beings, said, “The wisdom of expending public and private funds on education is not to be measured by, its direct fruits alone. It will be profitable as a mere investment, to give the masses of the people much greater opportunities than they can avail themselves of.” Researches have proved that the benefits in various forms to investment in education far exceeds than that of investment in other sectors. These include the benefits the economy obtained from educational research, the cultivation and discovery of potential talent, increased capability of people to adjust to change of job opportunities, the provision of manpower for sustained economic growth, provision for better citizenship, the ability to appreciate and recognize a wider range of cultural and other services, reduced reliance as the
market for such services as the filing of income tax returns, and a chance to give
the next generation better education and therefore, a better future (Schultz, 1963).

Therefore, the need for an adequate investment in education is argued from
the point of view of all round development of the individual and overall progress
of the nation. With increasing enrollment and expanding scope of educational
activities, coupled with decreasing resource availability for the educational sector
(in view of completing claims from other sectors), the problems are experienced at
three levels. First, at the education sector as a whole, secondly at the level of sub-
sectors of education and thirdly at the level of individual institution. These
financial resources — sectoral, sub-sectoral and institutional could each have its
own externalities on students and parents so far as the education of the household
is concerned. It also has implications for the quality of education currently
provided and the capability of the sector to undertake innovative programmes.
Financial pressures, coupled with declining educational standards and the
weakening capability of the education sector to train and educate students
according to certain requirements have also given rise to a new class of
institutions. These trends emerged more and more clearly over the past decade or
so. The general cost escalations have aggravated the problem of finance for higher
education. In our federal framework, irritants in intergovernmental relations have
created additional dimensions to the problem. Therefore, proper utilization of the
available resources in education for deriving maximum benefit has been stressed.
It is in this context that the need for conducting researches in the area of financing
of education in general and cost analysis studies in particular is emphasized.
1.1.2 Analogy of University with a Business Firm

The cost-analysis becomes instrumental for objective assessment of allocative efficiency and distributive efficiency of economic resources. The production process of an university system seems to be analogous to the production process of a firm in an industry. The analogy of business firm as an economic organisation could be carried forward to the extent that University like a business firm combines inputs of resources — staff, building, equipment and material, student time to produce such outputs — graduate students and research scholars, research and training (Carter, 1965 and Pratt, Traverse & Burgess, 1978). The Chart below outlines the analogy of Economics to Education.

Analogy of Economics to Education

BASIC ELEMENTS

<table>
<thead>
<tr>
<th>Input</th>
<th>Process</th>
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<tr>
<td>1 Input</td>
<td>2 Process</td>
<td>3 Output</td>
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<tr>
<td>a) CAPITAL</td>
<td>ECONOMIC UNIT</td>
<td>FIRM</td>
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<tr>
<td>b) LABOUR</td>
<td>Process = Conversion of raw material into intermediate or final product</td>
<td>+ Research + Profits originating differentials from input units and sale proceeds[Not solely based upon profit motive].</td>
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<td>c) RAW MATERIALS</td>
<td>EDUCATIONAL INSTITUTIONS</td>
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<tr>
<td>i) Building &amp; Equipments</td>
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<td>ii) Staff</td>
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<td>iii) Uneducated Students</td>
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<td>Process = Adding knowledge and Skills</td>
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University like a competitive unit in the knowledge industry diversifies its scope of activity even at the cost of loan financing. Fast development of Campus activities provides scope to accelerate a process of cultural dominance. As Pickford Michael observes “There is a strong pressure within universities to maintain the quality and diversity of the education they provide which may imply a continuation of present areas of funding”.

It should however, be noted that universities cannot be treated as business firms outrightly which are established with a sole purpose of earning profit. The pursuit of knowledge may be more praiseworthy than the pursuit of profit. The universities are concerned more with the pursuit of knowledge than the proposition of profit-making.

Multi dimensional role of the University had pressed hard finances in the universities and colleges. Universities are broadly carrying out such functions – teaching, general administration affiliating supporting services, municipal and civil services, student’s welfare, general welfare etc. Therefore it is necessary that universities must have systematic budgetary allocations adequate enough for carrying out these functions effectively.

1.1.3 The Problem of Resource Crunch - a Global Phenomenon

Resource crunch in higher education is a global phenomenon. Therefore, the need to generate financial resources by the system itself has become important and crucial and that is why various governments as also different statutory bodies
have been emphasising on this need. To answer the question why there is a global resource crunch we have to go back and analyse the consequences of the Second World War which have changed the social, economic and cultural scenario of all the countries in the world in varying degrees, and at staggering pace. But today, the impact is complete, the problems are broadly common and hence efforts are not very different in different countries. Consequences of the Second World War made all round impact in various spheres of life through out the world. Perhaps the most striking impact was the realisation of the role of higher education, particularly the role of science and technology to achieve economic prosperity and superiority of powers. Moreover, the demand for higher education increased due to population growth, massive expansion of primary and secondary education, increasing realization among people regarding the importance of higher education etc. led to escalating demand for higher education. Also the government was also keen to create a trained manpower force through higher education system particularly technical education. Resultantly, there was massive expansion of higher education during 1960s. But somehow the expansion took place in general education and not technical/vocational education.

Conspicuously the later half of 1970s marked all over the world a slowing down trend in the pace of expansion particularly due to the strikingly high public expenditure that higher education demanded. From the beginning of the 1980s, changing climate was visible in the universities in USA and Europe to curtail expenditure, at least to arrest the escalating investments in higher education. The message to generate income became clear and changing attitude and culture were clearly seen making impact, of course in different degrees in different countries.
One reason for the pressure to reduce investments in higher education was the pressing demand of various other social sectors. In Japan, public funding in higher education declined the maximum from 83.10 percent in 1970 to 63.10 percent in 1987. Next to Japan it was UK, where public funding declined from 71.20 percent in 1970-71 to 55 percent in 1986-87. That was also the trend, of course in varying degrees in some other developed countries. For historical reasons, there was a good deal of commonality in the higher education system, between UK and India. However, since 1980s, there have been many changes in UK, following a general policy of reducing the public expenditure by that newly elected conservative Government (1979) led by Margaret Thatcher. Within a few months of its installation, allocation for universities was reduced by the government and from July 1984, through the University Grants Committee, grants of the Universities were reduced on a selective basis by 6 percent to as high as 44 percent which posed serious problems to the universities. For some universities it was a threat of survival and for some it was a question of bankruptcy. While announcing cuts of grants in July 1981 a three year period of restructuring was given and the cuts were effective from 1984-85. From that time, the UK higher education system has undergone a sea change in almost all respects although universities had initially reacted to the governments action and were not quite willing to accept and participate in various restructuring activities including special efforts to generate income; but as time passed by, they gradually realised the reality and slowly restructuring took place. Criticizing the indifference and inaction of the universities to the suggestions of the Minister of State for Education and Science of the previous labour Government as early as in 1969, that they should increase student-teacher ratio, encourage students to study within the reach of home; make
more efficient use of buildings and equipments avoid duplication of facilities etc. In a debate in 1981 in the House of Commons, a Member of Parliament said that the Universities did nothing since then to the suggestion of the Minster. Universities had to face enormous problems of restructuring but when pushed to the wall, finally all of them rose to the occasion and they are now doing well. They have become transparent, efficient and cost-effective. Universities have moved out to UK to market their expertise and services aggressively and generated income through international consultancies. They have also been successful in attracting more foreign students despite the fact that from 1979 very high fees are charged. The same fees are applicable for home students. Fees prescribed for the foreign students are aimed at recovering the full cost of their education. Within the country, university-industry interaction was given a boost, which helped both the universities and industry.

Precisely there is a global trend to be cost effective in a situation of steep competition and scarce resources. Universities in UK and elsewhere have achieved this in varying degrees through:

a) Reduction of Expenditure;

b) Enhancing efficiency at all levels including use of Educational Technology;

and

c) Generation of non-government income by boosting the existing sources and tapping new ones.
Resource Crunch in Developing Countries:

India is no exception in respect of the expansion of higher education in 1960s. As against 25 universities including deemed university (actual number of universities was 19), 700 colleges and 2,65,917 students enrollment in higher education at the time of independence (1947-48) by 1970-71 the number rose to 93 universities, 3604 colleges and 19,53,640 students. During 1970s slowing down of expansion was noticed in the developing countries also. In India, however the number continued to increase primarily due to population bulge. In the case of the developing countries, besides the demand of various social sectors, the need of investments in sector that could help develop the economy was an additional important pressure e.g. agriculture, power generation, rural development etc. precisely resource crunch in higher education was felt all over the world in 1980s.

In India, while the universities have always faced the resources constraints particularly the state universities, in general the real crunch has been felt only now. However, it is really more a realisation of the crunch, then the crunch itself for the funding agencies have now been pressing the universities to generate non-government income and be on their own, which earlier the government agencies did not clearly say so as a matter of declared policy. Even the universities thought why should they raise non-government income for they were doing a service to the nation and a commercial approach was not desirable. In the developing countries of Asia in relation to 1960s, the public expenditure in general has declined over the years in China and South Korea (UNESCO, 1990). As a result, the universities faced resource crunch. In order to face the crunch, universities in these countries have drawn up plans and programmes since there is no getting
away from the reality and therefore sooner the steps are taken, better it is before it is too late. Even China has effected a few unprecedented changes in this regard.

Admittedly no government can sustain the fast escalating expenditure on higher education; particularly when there are pressures on other social sectors and sectors demanding heavy investments for developing the economy. At the same time it is true that the universities found the funding by the government at a level which does not help them raise and keep up the level for running the system in all the areas e.g. the fast rising expenditure on salary component, general inflation factor, upleap of the campus, removal of obsolescence, equipping the library and the liberal assistance to the students. Even for research activities, there is hardly any funding worth the name except through projects and that too only a few universities are able to win them, many do not even make serious efforts.

**Indian Scenario – Escalating Expenditure:**

Over a period of four years form 1984-85 to 1988-89 of the eighty universities who responded to a study conducted by Association of Indian Universities, in a number of universities, the expenditure had increased by more than 100 percent. In the case of the other universities also, the increase was very substantial. Such a situation i.e. constantly rising costs ultimately led the universities to the deficit trap irrespective of the fact that whether the universities were central or state although the former were always funded much better than the latter. It was observed (AIU, 1991) that out of 80 universities only two did not have any deficits. Of the remaining 78 universities as many as 20 suffered deficits
for all the 5 years of the study together. The largest number of universities (i.e. 36 universities) had deficits for 1 to 2 years. Today the condition is worse than before for the crunch has ultimately appeared publicly in a declared manner. It is interesting to note that the reasons of deficits were not due to the good or bad financial position of the governments which were responsible for funding. All the responding universities in the states of Bihar, Himachal Pradesh, Madhya Pradesh, and Manipur suffered from deficits even though the states had surplus during the period of analysis. On the other hand, the universities of Andhra Pradesh, Uttar Pradesh, Tamil Nadu, Jammu and Kashmir, Maharashtra, Punjab and West Bengal emerged out with surpluses while the state experienced deficits. A third picture was that in the universities in Gujarat, Assam, Karnataka, Orissa and Kerala both the universities as well as the state had deficits.

The causes of deficits as analysed were:

a) inadequate grants;

b) inefficiency in the distribution of the funds

c) rigidity in the method of funding

d) adhocism in budgetary allocation by state governments.

e) Financial mismanagement by universities.

Clearly it is the government which was responsible for the causes (a) to (d) while the universities were responsible for the clause (e). Going by this, it has to be admitted that primarily, it is the funding pattern and distribution system that are responsible for the deficits of the period in question. It is also true that to some extent mismanagement contributed to the already inadequate grants and for that the
universities were responsible. In the context of today, mismanagement must be converted into good management else already indifferent to bad health of the universities will lead to more serious consequences.

1.1.4 The Problem of Resource Allocation and Rising Demand for Higher Education

The succinct observation of the World Bank working paper (1980) is to be noted with concern.

"Higher Education, the very top step of the learning ladder, sometimes finds itself at the bottom of the hierarchy when considering priorities in educational spending. The recent common prescription for economic development is injections of basics and especially vocational education. After all, it is extremely difficult to rationalise expenditure on another university when a high proportion of the country's population is illiterate".

This is exactly the given setting in almost all the developing countries where there is problem of inter sectoral allocation of funds, the rising unit costs of providing college and university education at one end and an under-current of pill-down forces seems to work for a cut in the allocation of funds to higher education on the other end. The sustained demand for higher education has been a phenomena of the last two decades in almost all the developing countries including India. The factors contributing to this development are not far to seek.
a) Higher education ensures higher levels of income (Blaug 1973) especially over time.

b) The constant rise in the standard of living almost in every country has made it possible to spend proportionately more on education by households.

c) Recognition of the fundamental rights of a minimum level of education by the Governments has provided leeway for further education. Part of this recognition, is a political expediency to respond to the social aspirations of the people as manifested in the manifesto of the political parties and partly, it owes to the equity and social justice argument.

d) Urbanization in the developing countries have made the public conscious about the obvious advantages of education i.e. enhancement in the productive capacity of the manpower and cultural advancement. Exposure of the public to mass media (TV, Radio, Newspaper etc.) has been instrumental for this increased consciousness and urge.

e) Scholarly reports (contribution of Schultz, Denison, Griliches, Bowman, Psachoropouloues) make again a strong case of investment in people. The individual and the government have been equally influenced by these reports, since these reports bear it out that education makes an important contribution to economic growth.

f) The rapid expansion, upgrading and diversification of manpower requirements due to technological advances in the economy, a new emphasis on and clear recognition of education’s role in economic growth has been the key factor for demand in higher education. Efforts have been made by several countries to regulate admissions in institutions of higher learning so that the entry in colleges and universities becomes difficult. A
study by Psacharapoulos (1977) reveals this strength. It shows university entrance as a percentage of applications in a number of countries. A comparison between different countries however shows that the entry in higher education is comparatively difficult in developing countries. The pressure groups are formed to legitimate the expansion of higher education.

g) Over the years there has been steady increase in enrollment and retention at the primary and secondary stages of education because of the sustained efforts by the governments and NGO’s.

h) Reservation of seats in educational institutions as well as reservation in employment for the weaker sections of society act as motivating for the youths belonging to these sections to pursue higher studies.

i) Increase in hostel facilities in institutions of higher education has helped the students coming from rural and hilly areas to pursue higher studies.

j) Provision for scholarships, stipends, educational loans by the government and NGO’s have encouraged the youth pursuing higher studies.

k) Special emphasis to women’s education has resulted in increase in enrolment of girls in higher education.

In India the University Grants Commission discouraged though unsuccessfully, the proliferation of colleges and universities. The UGC in one of its annual report observed: “It is apparent that steps will have to be taken by the state governments concerned to reverse the trend. In this connection, the suggestion made by the commission for a moratorium on setting up of new undergraduate and postgraduate colleges for the next five years in areas other than tribal areas needs serious consideration by the Governments”. The size and rate of
proliferation could be known from the fact that between 1974-75 and 1982-83, 22 new universities and 842 new colleges were added to the existing one. Moreso, during the last two decades the number of universities, colleges and enrolment has gone up to 229, 11089 and 77180000 respectively.

Under pressure of demand, admissions in universities and colleges went up beyond expectations. The amount of pressure affected adversely the system of education in the following manner:

a) Additional funds were necessary to:
   i. Private admission to new entrants by creating additional intake capacities of the existing institutions;
   ii. Establish new colleges and universities.

b) Standards of higher education got affected for want of infrastructure.

c) It brought imbalances in manpower. The supply of graduates and post-graduates exceeded demand. As a result of it, job opportunities fell short of the demand leading to unemployment of the educated youth.

d) It further created regional imbalances (UGC, 1981). These regional imbalances exist in terms of growth of institutions, the percentage of post-graduate enrolment going in for research faculty-wise, growth in number of students per thousand of population, growth of women enrolment per thousand of population, composition and proportion of admissions in various faculties and disciplines, apart from physical facilities, maintenance of standards and efficient allocation of resources.
The first two phenomena are enclogenous affecting adversely the internal efficiency of institutions and the last two are exogenous negating contribution of higher education for the economic growth by Indian economy.

1.1.5 Educational Finance: Some Issues

Education finance has been one of the areas in which economists have taken a keen interest for a long time. One of the earlier studies on the history of educational finances (Atmananda Misra) provided pioneering initiatives in the field. Studies on history of education (Narula, S. and Naik, J.P. 1974) referred to the problems of educational finances as one of the crucial components in the historical analysis of education. The subsequent studies with a focus on financing of education at different levels, funding of education, pricing of education etc. raised some of the crucial issues in this connection. The question of educational finances has to be considered in a broader framework of the availability of resources—physical, financial and manpower—for education.

The main issues in connection with resources and finances for education would be the following:

a) Is the resource flow into education adequate so that growth and development of education is ensured without any hindrance?

b) Is there “automatic stability” in the flow of resources within the given time period? For example, within a year do the resources flow automatically whenever there is greater need for them?
c) Is the flow of resources having any strings or any conditionalities?

d) What is the role of the public and private resources for education? Are there complementaries or substitutional effects in these flows? Is it possible to determine an optimum combination of public and private flow of resources for different levels of education?

e) Is the resource flow to different levels and types of education in accordance with the overall plans of sectoral developments with education? In other words, does first level education, which is a priority sector within education receive adequate resources? If the resource flow is not adequate then what are the socio-economic and political factors for the same, and how to overcome these forces?

f) Is the resource flow consistent with the goals of inter-regional, inter-community, inter-gender, and inter-caste group equity and equality? Obviously, if the resources are not flowing in accordance with these objectives then even the best plans would not succeed. The flow of resources to education would obviously depend upon under which management the educational institution functions. The private costs consisting of expenditure on books, stationery, clothing, transportation etc. are also reported to be different for institutions under different managements (Gupta, S. 1990). Also the private costs of students who reside in hostels are substantially more than the day scholars. Under the sponsorship of the planning Commission, a multi-state study of private expenditures on education was conducted, which showed that private expenditures by the parents and the students, and also by private managements are too large to be overlooked, though they have not received the attention they deserve by the policy makers (Panchamukhi, 1990).
Government mobilises funds for financing education. Historically, educational cess has been considered as a useful source of raising funds for education by the local governments (municipal bodies). The picture does not seem to be very encouraging now. For example, education cess in Baroda city contributed to the extent of 16 percent of the total revenue. Even though the educational cess makes such a significant contribution, it was found that very little is spent on the development of the pupils, particularly the further development of the personality of the child. This shows that the resource mobilisation by the local bodies for education is not in consonance with the objective of educational development (Bhat, 1989). While private costs indicate the costs incurred by the beneficiary, the institutional costs indicate the costs to be incurred by the suppliers of education. The institutional costs of university education have been rising continuously over the past few years (Behara, 1991). The case study of Utkal University brings home this point. It shows that the examination costs are outstripping the other costs of higher education. Though the observations are made in the case of a university in a less developed state, the picture is not quite different in the case of other states. In the same way what was observed in the case of educationally most developed state of Kerala is relevant for the other states as well (Mathew, 1988). The object wise analysis of educational expenditure for selected colleges in the state of Kerala over a period of time showed that salaries is the most important head. In view of this predominance of expenditure on salary, very little flexibility is available for the colleges to introduce any innovative measures in higher education.
Against the above background, it would be clear that the picture of the financial position of institutions of higher education is extremely disappointing with the government almost giving its initiative in view of its own financial crisis. It is with this background that the measure for rational restructuring of tuition and other fees with adequate safeguards to protect the interests of the students from the weaker sections, appears to be the only way out. Similar is the conclusion for Maharashtra (Kurup and Thatte, 1991) with the help of unit cost calculations for higher education for different parts of Maharashtra it was found that almost a threefold hike in the tuition fees is the only way out for tackling the problem of resource crunch faced by the institutions of higher education. Even though this order of fee hike may be politically problematic, the gravity of the financial crisis in higher education cannot be understated. The financial problems are not peculiar only to the unaided institutions of education, since there is no significant different in the number of financial problems faced by the aided and unaided institutions. The paucity of funds for unaided institutions may even lead to malpractices and an unhealthy and undemocratic relationship amongst teachers and students, as indicated in one of the studies. Against the background of such a picture of financial resources, there is a need to have innovative approaches with regard to identification of areas of cost saving, and also newer sources of funds for education. The use of low cost materials like plastic bags, plastic disposable syringes and assorted materials such as newspapers, plastic cards, glass jars and bottles and stoppers etc to teach plant physiology and microbiology in rural areas is one way of making the best use of the available local resources for education (Bhattacharya, 1990).
1.1.6 Cost and Expenditure in Education

Expenditure is an outlay of funds. Costs can be monetary or non-monetary. When an individual decides not to take a job in order to continue his studies, he incurs a loss of potential earnings which is for him a cost. Similarly, when a village community agrees to build a school without being paid for the work, it does not spend money but incurs a cost represented by its time and labour. In both the cases, we refer to the opportunity cost for the individual or the community. It means sacrificing one commodity or activity in order to acquire another commodity or activity.

Cost is a key concept in Economics, since any production or consumption involves a choice among limited resources. It is an integral part of the theory of decision making. Whether the decision is made by the state, the company or the individual. The state must plan the allocation of human and financial resources, because what goes to education is no longer available for other sectors. Similarly, the company which allows its workers to attend training courses during working hours suffers a loss of potential production, but it hopes that this will be more than offset in the future by an increase in productivity. The need for children from poor families to work at an early age largely explains the wastage through dropping out observed in agricultural countries, even when education is provided free. However, opportunity cost does not apply when we analyse a country’s effective expenditure on education and try to assess its return.

(a) Expenditure on Education: This includes a country’s overall effort in this field and includes foreign aid where applicable. We must, thus distinguish between total expenditure and national expenditure. These expenditure could be in the form
of (a) the government department which disburses the money; (b) the ministry responsible; (c) the nature of expenditure i.e. investments outlays, non-recurrent costs, running or recurrent costs.

The volume of public spending depends on the amount of contribution from private sources and on foreign aid. It is set against the budget and the national product in order to evaluate the priority rating assigned to education. The percentage of the budget is less significant than that of the national product because the budget itself represent a more or less high proportion of the national product, depending on the country.

Lastly, evaluation of the efforts of a country puts into education must take into account of its population and in particular its age structure. Per capital expenditure on education depends directly on the per capital national product. But the cost is greater in proportion as the population is younger and the proportion of working people lower since it is the activity of the latter which finances expenditure on education. Analysis of expenditure by level and types of education determines the priority rating assigned to each level or type. In general, as a country develops, the proportion of expenditure on primary education drops and spending on secondary and higher education rises. In fact interpretation of these figures can be distorted by two factors: the importance of foreign aid and the inequality of unit costs from one country to another.

(b) Unit Expenditure on Education: Expenditure on education is a rough and ready measure of a country’s effort on behalf of education. It gives no indication of the nature of that effort or of its efficacy. For instance, universities may be set up for prestige purposes and absorb money which could be better used to improve the
teacher training or to provide better teaching facilities. It is not the amount of money spent which matters but how many people benefit from it and the quality of education they receive.

The analysis of unit costs by level and type of education makes it possible to assess the effectiveness, with which the different ‘factors of production’ (teachers, materials, premises etc) are combined and how savings could be made. It is therefore an essential instrument of planning and management, making it possible to forecast future expenditure in accordance with different assumptions as to how the situation will evolve. But costs may be high for opposite reasons: because the quality of education is high or because it is not suited to economic and social conditions.

When evaluating the productivity of education, cost is only one of the aspects to be considered and the other is production. Rising costs are justified if they result in a more than proportional increase in the number of graduates. Conversely, it is futile to reduce costs if this results in a decline in quality.

(c) Capital Outlay per Pupil: This is in inverse proportion to the size of the class, but there is obviously a limit that must not be exceeded if a good educational return is to be attained. It depends on many factors: geographical (climate and topography), economic and technical (cost and transport of materials, labour and local or imported equipment, political (sitting of schools on basis of electoral considerations mixed education) and pedagogic (concept and structure of education, especially higher education). The more expensive a building, the higher its running costs. A ratio of recurrent costs should be calculated, defined as the ratio of running costs to initial capital outlay.
(d) **Running costs per Learner**: This concerns the ratio between total running costs and the number of learners by level and type of education. The extent of these costs must be analysed and in particular a distinction must be made between direct teaching costs and indirect costs. This kind of analysis reveals the extent of maladjustment of higher education in certain countries.

(e) **Cost of Training**: This is the cost of the learner who completes his course of study or who passes the final examination, if there is one. It is different from the theoretical cost of a particular course of study because of wastage.

1.1.7 **The Benefits of Education**

The importance of education has been emphasized as a single most important determinant of a person's economic and social success. Studies of occupational prestige, for example, typically place higher educated persons (doctors, professors, etc.) at the top of the prestige ranking. In this section, a brief description of the human capital approach has been given followed by a classification of educational benefits.

(a) **The Human Capital Approach**: The basic premise of the human capital approach is that variations in labour income are due to in part differences in labour quality in terms of the amount of human capital acquired by the workers. Therefore, if one wishes to reduce income inequalities, one method to achieve this would be to reduce inequality in the investments people make in human capital (health, education, on job training, other vocational training). A simple illustration of the process has been diagrammed below:
Investment in Education $\rightarrow$ Higher Productivity $\rightarrow$ Higher Earnings

A (investment in human capital) leads to B (higher productivity of workers) which in turn causes C (Higher Earnings) (Cohn E and Geske T.G., 1990). This is consistent with the marginal productivity theory which argues that wages are determined according to the worker's marginal contribution to the revenues of the firm, implying that more productive workers, will be paid more, other things being equal.

Another important facet of the human capital approach deals with investment in on-the-job training and the criteria determining who will pay for such training and who will benefit there from. A distinction is made between 'general' and 'specific' training. 'General' training refers to training that provides valuable knowledge and skills to workers usable both within the present employment (where training takes place) and in other reemploysments. On the other hand, 'specific' training has value only within the current employment and is totally irrelevant for the workers productivity in other firms. In the first instance the theory predicts that the worker will be willing to pay for general training and the employer will be willing to pay the worker a higher wage following training.

(b) Taxonomy of Educational Benefits: Shults (1963) in his outstanding book, 'The Economic Value of Education' lists a number of categories of educational benefits. These include the benefits the economy obtained from educational research, the cultivation and discovery of talent, increased 'capability of people to adjust to change in job opportunities', the preparation of teachers and the provision
of manpower for sustained economic growth. In addition, schooling provides for better citizenship, the ability to appreciate and recognize a wider range of cultural and other services, reduced reliance on the market for such services as the filing of income tax returns and a chance to give the next generation better education and therefore, a better future.

(c) Consumption and Investment Components: The benefits that education bestows on an individual can conveniently be classified into 'consumption' and 'investment'. A product or service is considered to belong to the consumption category when it yields satisfaction in a single period only. It would be a pure investment good when it is expected to yield satisfaction in future periods only. In between we have goods and services that are both consumption and investment goods, that is they yield satisfaction now and expect to yield some satisfaction in the future as well. Education is a product that is best characterized by the 'in-between classification'. It yield satisfaction to the students at the time the education is given, and it also provides for increased utility overtime in the form of increased productivity, greater capacity to enjoy things and so on.

(d) Private and Social Benefits: Educational benefits may be further classified according to the incidence of the benefits. 'Private' benefits are those benefits that are retained by the individual being educated. Social benefits, on the other hand also include benefits that the individual cannot appropriate and that are therefore absorbed by other members of society. Generally, since the person being educated is a member of society, the private benefits are included in the social benefits. The social benefits, then, are the sum of the private benefits and other benefits (which
the individual cannot capture). There are basically two types of benefits that belong to the social but not to the private domain. They include (i) Tax payments associated with the educational benefit i.e., income taxes paid out of one’s lifetime income and (ii) External benefits which are those benefits that are due to the educational investment but that the individual cannot capture (Woodhall, M., 1983).

(e) Intergeneration Effects: In addition to the various direct or indirect returns, one must consider possible educational benefits that will be felt only a generation later. The alleged intergenerational effects of education stem mainly from studies showing that persons are more likely to complete a given level of education if their parents are more highly educated. The intergenerational effect is the increment in a person’s education that can be ascribed to the incremental education of the parent. Increased education also results in increased potential income. Hence, we could trace some of the higher expected earnings of the children back to their origin in the increased educational investment by the parents. Therefore, if we confine our investigation of the benefits of education to the parents only, some under-estimation of benefits would result. One needs to guard however, against the possibility that double counting on a persons educational benefits will take place – once in the calculation of one’s own educational investment and then once more in calculating intergenerational benefits.

1.1.8 Ability to Pay and Benefit Approach

In order to examine more closely the way in which social wants are satisfied through the budget of the allocation branch and how this related to the
adjustment in distribution prescribed by the distribution branch we have to study two distinct points of view. One may be referred to as the Ability to pay approach and the second the benefit approach. In the benefit approach, the relation of taxpayer and government is seen as J.S. Mill (1971) puts it, “in quid pro quo terms” (favour in return for something). Since the relation is one of exchange, the rules of the public household are taken to be more or less the same as those in the market. In the ability to pay approach the proper contribution to public services is treated as an independent problem, quite separate from that of benefits received. Taxes are seen as compulsory payments and the revenue expenditure process is viewed as a planning problem not subject to solution by the automatic functioning of the market.

Both approaches have something to contribute and both have serious defects. The benefit approach by its nature cannot solve the problem of distribution and stabilisation branches. However, in dealing with the allocation branch, this view has the great merit of tying the choice of public services to the preferences of the individual member of the community. Moreover, the benefit approach has the advantage of providing for a simultaneous determination of public services and tax shares, thus combining both sides of the budget process. This is an essential condition for any adequate theory of the public household. However, if we look at the benefit principle as an equity rule, there remains the vital question of just how benefits are to be determined. If we think of the benefit principle as implemented by a market mechanism, we must make the unrealistic assumption that the exclusion principles and the principle of voluntary exchange are applicable to the satisfaction of public wants. Moreover, such a solution overlooks the difficulty of determining the optimal output in the case of social
wants, even if true preferences are revealed. The ability to pay approach has the merit of recognizing the compulsory nature of taxation and viewing the termination of the public household as a planning problem. In this setting, the problems of all three branches can be included. However, the ability to pay approach does not tell us just how the tax burden is to be distributed. Worse still, it disregards the expenditure side of the problem or, at best, provides us with the decision that expenditures should be planned so as to maximize welfare. The ability to pay approach collapses completely if one accepts the hypothesis of the newer welfare economies that inter personal utility comparisons are admissible. Therefore some elements of both views can be drawn upon to construct a more satisfactory approach.

1.1.9 The Concept of Costs in Economics

The concept of cost comes into play in the production of economic goods or service, which is expressed in terms of money. The cost in production is referred to when the production of goods and services take place when the factors of production i.e. land, labour, capital and Organisation are hired by the entrepreneur from the owners at a certain supply cost. The cost of the owner is represented by his consumption foregone while the producer incurs expenditure (money cost) composed of rent, wages, interest etc. This charge is 'direct' production expenditure. But, Marshall has carried the distinction between 'real cost' and 'direct production cost' a long way (Hallak, 1969). The cost corresponds to the opportunity cost, it is simply because there is sacrifice and effort needed to produce the goods and services. A particular good or service is produced at the cost of another good or service. A choice of alternative has to be sacrificed in
order to achieve alternative so selected. The 'real cost' thus corresponds to the 'opportunity cost' of the alternative so opted against the alternative so sacrificed in the production of goods and services. In economics, therefore, it is assumed 'that through the economic life of any good there is always a choice of alternatives; and that the cost of any choice must be expressed in terms of the opportunity foregone to achieve the alternatives. The money cost to the consumer of the good or service is deemed to represent a certain equivalent in financial terms to the real cost to the seller.

1.1.10 Price Indices for Education

The price indices in education are important as their use will explain in the resources used in real terms and will also help the planners for future requirement of these resources. As Vazey (1972) observes "Price indices for the major items of expenditure (but especially for teachers) are needed. If possible, the amount and distribution of expenditures by end use should be given separately for private, public, urban, rural, large, small, old and new school at each level of education."

Budgetary allocations are made by the concerned authorities on the basis of the current purchasing power of money but, the purchasing power of the budgetary provision depreciates considerably as a result of inflation on the educational sector. Therefore, full allowance should be made in budget allocation to offset the depreciated purchasing power of money. In the absence of price adjustment for inflationary impact budgets are generally inflated resulting in misallocations and distortion of priorities of educational programmes. Therefore, it is desirable to construct price indices. However, they are not used for cost analysis.
1.1.11 The Concept of Factor Cost in Education

Hallak (1969) discusses the difficulties which create problem of calculation of factor cost of education products

a) The Production of Education: There are two types of concepts of costs i.e. producer cost or consumer costs. The quantity of education supplied or sold by the producer is not equal to the quantity acquired or brought by the consumer. Students who buy education i.e. skills, knowledge, modification of behaviour etc do not assimilate a body of knowledge equal to the transmitted one. Factor cost of education cannot be exactly put in the same fashion as treated in the case of firm or an industry. Transmission of knowledge, is quantified in terms of enrollment of the students and assimilation of knowledge in terms of the number of successes and scholastic performances.

b) Transactors of Education: The educational establishment i.e. school, college or university, the public authority, Directorate of Education or Ministry of Education, the teacher, families, private agencies, educational societies and educational trusts are the transactors of education. These agencies of education could be the producers as well as the consumers of it. For instance, families educate their children in an informal way at home becoming the producers of education and they send their children to school paying fees thus becoming the consumers of education. They also forego income of their family members by sending them to school which is termed as opportunity cost.

c) Education as a Public Service: Money outlay of the educational institutions are not their own money. Their educational activities are largely financed by the government and to some extent by the families or private agencies. Similarly the cost of education to families are again not full cost. The education is supplied at
the subsidized cost. Some families may not be the consumers of education at all or even equal to the taxes paid. Bringing precision in costing or equality consideration for pricing educational services supplied is complex. It is therefore more natural to treat educational services as public services as an amalgamation of producers and consumers. The national community is an economic transactor of education. This concept of cost means that all monetary and non-monetary effort which the national community devotes to education must be accounted for as inventories and resource inputs.

1.1.12 Determinants of Educational Costs

Educational cost determinants could be classified in two categories:

A) Internal Determinants of Educational Costs

Coombs (1972) observes ‘Internal determinants are closely allowed to the technology employed by education and to the policies adopted especially regarding the payment, development and utilization of teachers’. The fact that education uses a highly labour intensive technology. It is common pattern that in the total expenditures the establishment cost-salaries of teachers and other supporting staff covers three fourth of expenditure almost in all country. It is easy to understand that any decision which reduces the class size and the pupil teacher ratio, upgrading the qualifications of teachers, improving the service conditions can send the unit costs per student going upward.

B) External Determinants of Educational Costs

The external determinants of educational costs could be enumerated as:

1) Inflation
2) Educational demand
3) Factor costs of education
4) Educational revenues
5) Foreign aid
6) Research and development programmes.

1.1.13 Concept of Unit Costs

For investment decision in educational project, the unit cost is a prerequisite. Unit cost denotes input cost per unit of production. The production unit in education may be expressed in terms of student graduated at a certain level. Unit cost is defined here in terms of real resources used upon the production of human capital (Pandit, 1976). Unit cost will measure the cost of annual flow of inputs in the form of teachers and students time, a amortised cost of buildings, equipment, books, and other materials of an educational plant, household cost of students spending on books, stationery, maintenance, living in hostels and cost of leisure foregone by the student. Unit costs are expressed in terms of per student enrolled or in other definable units such as per student graduated/passed, teachers, schools etc.

Taxonomy of Economic Costs

The major classification of the costs by incidence of burden are as follows:

I. Institutional Costs
   a. Current costs or recurring/operation costs
   b. Capital costs
II. Household or Private Costs
   a. Net Tuition Costs i.e. fee paid minus financial aid received by
      student.
   b. Non-tuition costs.

III. Social Costs
   a. Institutional Costs
      i. Current Costs
      ii. Capital Costs
   b. Private Costs
      i. Non-tuition costs
      ii. Earnings foregone.

1.1.14 The Concept of Cost Analysis in Education

The cost of education include the direct cost (the institutional costs,
students and parents costs) and indirect costs (earnings forgone). Thus the inputs
of education can be measured in terms of money or of the real resources that are
used in the educational process namely the time of teachers, students and other
staff and books, materials, equipment and buildings. All these resources have
alternative uses. If they were not used for educational purposes, they could be
devoted to some other activity and since resources are limited, this means that
alternative opportunities for using these resource must be sacrificed or forgone.
Opportunity cost of education include all the real resources that are devoted to the
educational process and where these cannot be measured directly in terms of
earnings forgone by students when they choose to enroll in education rather than seek employment.

Direct cost is classified into two types, i.e. capital costs and recurrent costs. Recurrent costs includes all expenditure on consumable goods (e.g. books, fuel, stationery etc) and services which brings immediate or short term benefits and have to be renewed. Capital costs include the purchase of durable assets such as buildings, equipments etc. which yields benefits for a long period. In cost analysis study mostly direct money costs is receiving the bulk of attention because not only statistics on direct costs are readily available but also the consequences of such costs are directly and strongly felt by tax payers. On analysing the cost of education, the expenditure incurred by all the agencies/bodies/individuals and spent on various items (of expenditure) are taken into consideration. Student/pupil is considered as the unit of study and accordingly cost analysis is done in various ways. Total unit costs (total expenditure per pupil) unit costs in terms of various heads of expenditure and sources of income (funding agencies) private unit cost etc. are calculated.

1.2 Higher Education in Goa: The Present Position

Goa is the smallest states in India having gained statehood in the year 1988. Goa was under rule of the Portuguese for many centuries until it was liberated in the year 1961. Prior to the liberation of the state from Portuguese rule there were no institutions of higher education in the state. It was only after liberation that many institutions of higher education began to spread out in the state. All these
institutions were affiliated to the Bombay University. It was only on the 1st June 1985 that the Goa University, a premier institution of higher education in the state of Goa was established. It was during this time that all the colleges/institutions which were affiliated to the Bombay University got affiliated to the Goa University.

The Goa University is an affiliating cum-teaching University having facilities for higher education and research in a number of disciplines. Over the last sixteen years from the time of its establishment, there has been wide growth in its departments and affiliated institutions. There are now twenty-two teaching departments, four University Grants Commission (UGC) centres, one UGC Academic Staff College for in-service education of teachers, forty-three affiliated colleges (professional and non-professional) and six recognised institutions conducting research. However, till today, Goa University does not have P.G. Departments like Geography, Education, Psychology, Physical Education etc.

The detailed break-up of the number of colleges affiliated to the Goa University offering various courses in the general as well as the professional streams are shown in Table 1.2.1 and Table 1.2.2 respectively.

Table 1.2.1 : General Colleges (Arts, Science & Commerce) in Goa

<table>
<thead>
<tr>
<th>Colleges</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Science College</td>
<td>03</td>
</tr>
<tr>
<td>Arts &amp; Commerce College</td>
<td>06</td>
</tr>
<tr>
<td>Arts, Science &amp; Commerce Colleges</td>
<td>06</td>
</tr>
<tr>
<td>Commerce Colleges</td>
<td>05</td>
</tr>
<tr>
<td>College of Home Science</td>
<td>01</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
</tr>
</tbody>
</table>

Source: Annual Reports 2000-01, Goa University.
Table 1.2.2: Professional Colleges in Goa

<table>
<thead>
<tr>
<th>Colleges</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Law College</td>
<td>02</td>
</tr>
<tr>
<td>Institute of Nursing Education</td>
<td>01</td>
</tr>
<tr>
<td>College of Architecture</td>
<td>01</td>
</tr>
<tr>
<td>College of Teacher Education</td>
<td>02</td>
</tr>
<tr>
<td>College of Pharmacy</td>
<td>01</td>
</tr>
<tr>
<td>College of Engineering</td>
<td>02</td>
</tr>
<tr>
<td>College of Fine Art</td>
<td>01</td>
</tr>
<tr>
<td>College of Music</td>
<td>01</td>
</tr>
<tr>
<td>Dental College</td>
<td>01</td>
</tr>
<tr>
<td>Medical College</td>
<td>01</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
</tr>
</tbody>
</table>

Source: Annual Reports 2000-01, Goa University.

It was observed that so far as the enrolment in various courses in different colleges/institutions is concerned, there was steady growth during the period 1965-66 to 1995-96. But, after 1996-97 there was no increase in enrolment in different colleges/courses. This is evident from the data in Table 1.2.3.
Table 1.2.3: Enrolment in Various Courses in Different Colleges/Institutions during 1996-97 and 2000-01

<table>
<thead>
<tr>
<th>Year</th>
<th>Course/Degree</th>
<th>1996-97</th>
<th>2000-01</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B.A.</td>
<td>3879</td>
<td>3077</td>
</tr>
<tr>
<td></td>
<td>B.Sc.</td>
<td>3039</td>
<td>2516</td>
</tr>
<tr>
<td></td>
<td>B.Com.</td>
<td>6789</td>
<td>7357</td>
</tr>
<tr>
<td></td>
<td>B.Ed.</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>M.Ed.</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>B.Pharm.</td>
<td>141</td>
<td>167</td>
</tr>
<tr>
<td></td>
<td>M. Pharm</td>
<td>NA</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>B.E.</td>
<td>662</td>
<td>730</td>
</tr>
<tr>
<td></td>
<td>M.E.</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>B.F.A.</td>
<td>211</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>LL.B.</td>
<td>1019</td>
<td>864</td>
</tr>
<tr>
<td></td>
<td>B.D.S.</td>
<td>134</td>
<td>174</td>
</tr>
<tr>
<td></td>
<td>M.D.S.</td>
<td>NA</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>B.Arch</td>
<td>187</td>
<td>181</td>
</tr>
<tr>
<td></td>
<td>B.Music</td>
<td>39</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>B.Sc. (Nursing)</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>B.A.M.S.</td>
<td>116</td>
<td>193</td>
</tr>
<tr>
<td></td>
<td>M.B.B.S.</td>
<td>305</td>
<td>212</td>
</tr>
<tr>
<td></td>
<td>M.D., M.S. etc.</td>
<td>23</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>B.H.M.S.</td>
<td>NDA</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>M.H.S.</td>
<td>NDA</td>
<td>06</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>16768</td>
<td>16066</td>
</tr>
</tbody>
</table>

Notes:
1. NDA: No Data Available.
2. NA : Not Applicable.


There was a very high growth in enrolment in different P.G. Departments in Goa University during the initial years of its establishment. However, slowly there was a declining trend in enrolment and the number of seats available in some of the departments remained vacant. The data in Table 1.2.4 show declining trend in actual enrolment from the year 1997-98 to 2000-01. As a result, during the last many years, Goa University has several times reduced the prescribed intake in different courses. Inspite of the reduction in the number of seats, today in many of
the departments especially in the Faculties of Languages and Social Sciences the actual enrolment is far below than the prescribed intake.

Table 1.2.4: Enrolment in Different Disciplines/Subjects in Different Post-Graduate Departments at Goa University during 1997-98 and 2000-01.

<table>
<thead>
<tr>
<th>Discipline/Subject</th>
<th>1997-98</th>
<th>2000-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>41</td>
<td>18</td>
</tr>
<tr>
<td>Hindi</td>
<td>58</td>
<td>43</td>
</tr>
<tr>
<td>Konkani</td>
<td>57</td>
<td>31</td>
</tr>
<tr>
<td>Marathi</td>
<td>34</td>
<td>15</td>
</tr>
<tr>
<td>Portuguese</td>
<td>05</td>
<td>05</td>
</tr>
<tr>
<td>French</td>
<td>05</td>
<td>03</td>
</tr>
<tr>
<td>Economics</td>
<td>54</td>
<td>44</td>
</tr>
<tr>
<td>Political Science</td>
<td>30</td>
<td>19</td>
</tr>
<tr>
<td>Sociology</td>
<td>21</td>
<td>24</td>
</tr>
<tr>
<td>History</td>
<td>35</td>
<td>29</td>
</tr>
<tr>
<td>Philosophy</td>
<td>09</td>
<td>08</td>
</tr>
<tr>
<td>Mathematics</td>
<td>45</td>
<td>21</td>
</tr>
<tr>
<td>Physics</td>
<td>34</td>
<td>35</td>
</tr>
<tr>
<td>Electronics</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>Chemistry</td>
<td>60</td>
<td>65</td>
</tr>
<tr>
<td>Geology</td>
<td>11</td>
<td>08</td>
</tr>
<tr>
<td>Computer Science</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Botany</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td>Zoology</td>
<td>30</td>
<td>10</td>
</tr>
<tr>
<td>Microbiology</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Marine Science</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Marine Biotechnology</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>Bio-Chemistry</td>
<td>12</td>
<td>--</td>
</tr>
<tr>
<td>M.Com.</td>
<td>154</td>
<td>60</td>
</tr>
<tr>
<td>M.B.A.</td>
<td>60</td>
<td>76</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>908</strong></td>
<td><strong>683</strong></td>
</tr>
</tbody>
</table>


1.3 Need and Significance of the Present Study

A study of unit cost in educational institutions is a tool for planning since it throws light on aspects like:

a) allocative efficiency of scarce resources;
b) economies of scale obtainable or testing the economic feasibility of expansion plans;
c) pattern of financing
d) incidence of burden on household
e) financial implications of any change brought in organisation, methods or curriculum in education
f) policy implications of grants-in-aid
g) reflections on the social choice of education (distributive efficiency of education)
h) effects on investment decisions in education, households and the state for future planning.

Cost analysis in education serves a variety of purposes in educational planning (IIEP, 1972) including testing, the economic feasibility of expansion to plans, proposals or targets, estimating the cost of alternative polices and of educational reforms or innovations, comparing alternative ways of achieving the same objectives in order to select the most efficient or economical one, comparing the profitability of alternative investment projects; improving the efficiency of resource utilization and projecting future levels of educational costs.

Moreover, the importance of cost analysis in education has been realised by many scholars from time to time, considering the resource crunch most of the developing countries face today. In the words of Fielden and Pearson (1978), "In the current economic climate, resources for education and training are becoming scarcer. There will be increasing pressure from policy makers for cost reduction
and increased efficiency and there is likely to be more resistance to providing extra resources for educational projects. Educational staff will therefore need even more than before, to make the best use of the resources available, to examine carefully the full resource implications of any proposed new schemes and to support their arguments with qualitative data whenever possible. Cost analysis can be a powerful aid to achieving these aims”. In India several studies (Kamat, 1965; Panchamukhi, 1968; Chandrakant et al, 1975; Gogate, 1979; Ramanajan et al, 1978; Shah Inamdar, 1980; Garg, 1980; Sharma, 1980; Pandey, 1980; Somaiha, 1980; chalam, 1981; Sharma & Mridula, 1982; Ramachandran, 1981; Singh, 1986, Gupta, 1988; Ansari, 1989; Hebbare, 1989; Gupta 1990; Kurup and Thatte, 1991; Mridula, 1991) have been conducted so far. These studies were limited to either one university or a few selected courses or a particular mode of education. Moreso, in recent years no such studies have been reported. In Goa, no researchers have so far made cost analysis of higher education in the state.

Considering the uniqueness of the state in terms of its socio-economic, political and demographic characteristics compared to other states of the union of India, studies conducted in other parts of the country cannot be generalised to the state. Also scholars in the field are of the opinion that cost analysis studies should be conducted at micro level.

Therefore, keeping in mind the facts stated above, the researcher decided to conduct the present study. The present study would provide answers to several questions of concrete policy making in higher education in the state of Goa like what are the aggregate costs of higher education of different types and levels? Who bear these costs? What are the sources of meeting these costs? What are the determinants of these costs? What should be the optimum size of different
educational institutions, faculties on the basis of educational costs? And so on. This study will also bring light the internal efficiency of different institutions of higher education and this knowledge may help in proper utilization of the resources in the sector of higher education by the concerned authorities. Moreover, understanding of regional variations, variations by sex, stay during study, variation by course, variation by management etc. of private costs of higher education may provide very useful basis for evolving the policy of expansion of higher education and also for scholarship and student assistance policy in the state of Goa.

1.4 Specification of the Problem

1.4.1 Statement of the Problem

The present study intended to find out the various source of income and the main components of institutional costs of different types of institutions of higher education in Goa. It is concerned with finding out the institutional unit costs in relation to types of institutions, type of courses and levels of education as well as private unit costs of higher education in Goa in relation to types of courses, levels of education (Bachelor's versus Master's degrees), place of residence (of students), gender and types of institutions. Moreover, the study aimed at finding out whether family economic status of students influence the private unit costs, types of courses the student study and levels of higher education.
1.4.2 Objectives of the Study

The study was conducted with the following objectives in mind:

1. To find out the various sources of income of different institutions of higher education offering different courses in the state of Goa.

2. To find out the main components of institutional costs of different institutions of higher education offering different courses in the state of Goa.

3. (i) To find out the actual institutional unit costs (overall) of Bachelor’s and Master’s degrees in different courses/subjects in the state of Goa.

(ii) To find out the difference, if any, in actual institutional unit cost between:

(a) B.A. and M.A. degrees

(b) B.Com. and M.Com. degrees

(c) B.Sc. and M.Sc. degrees

4. To find out the expected institutional unit cost of Bachelor’s and Master’s degrees in different disciplines/courses in the state of Goa.

5. To find out the difference, if any, between the actual institutional unit cost and expected institutional unit cost of Bachelor’s degrees and Master’s degrees in each of the courses/disciplines/subjects.

6. To find out the difference, if any, in the actual institutional unit cost of BA, B.Sc., and B.Com. degrees between government and private institution offering the same courses.

7. To find out the difference, if any, in expected institutional unit cost of B.A., B.Sc., B.Com. degrees between government and private institutions offering the same courses.

8. To find out the inter-institutional differences, if any, in the actual institutional unit costs in B.A., B.Sc. and B.Com. degrees.
9. To find out the difference, if any, in actual institutional unit cost of B.Com. degrees between institutions having Commerce Stream and institutions having Commerce & Arts and/or Science Streams.

10. To find out the private unit cost of Bachelor’s and Master’s degrees in different disciplines/courses in the state of Goa.

11. To find out the social unit cost of different Bachelor’s degrees and Master’s degrees.

12. To find out the difference between actual institutional unit cost and private unit cost of different Bachelor’s and Master’s degrees.

13. To find out the difference, if any, in the actual non-salary institutional unit cost of the Bachelor’s and Master’s degrees between different disciplines/courses/subjects.

14. To find out the difference, if any, in private unit cost between:
   a. B.A., B.Sc., B.Com. & B.Sc.(Home Science) degrees
   b. M.A., M.Sc. and M.Com. degrees
   c. Different professional Bachelor’s degrees

15. To find out the difference, if any, in private unit cost between:
   a. B.A. and M.A. degrees
   b. B.Sc. and M.Sc. degrees
   c. B.Com. and M.Com. degrees

16. To find out the difference, if any, in average (mean) expenditure incurred during study leading to Bachelor’s degrees between:
   a. Rural and Urban Students
   b. Boys and Girls
   c. Hostelites and Day scholars
d. Students studying in Government managed and Private (Government aided) institutions (i) all courses combined, as well as (ii) each course separately.

17. To find out the difference, if any, in average (mean) expenditure incurred during study leading to Master's degrees between:
   a. Rural and Urban Students
   b. Boys and Girls
   c. Hostelites and Day-Scholars
      (i) all courses combined, as well as (ii) each course separately.

18. To find out the correlation between family economic status and private unit cost in higher education.

19. To find out the correlation between monthly income of the family and the pocket expenses of the students.

20. To study the difference, if any, in family economic status between the students studying in:
   a. General stream and professional courses (overall)
   b. Arts, Science and Commerce streams at the Bachelors degree level.
   c. Different professional courses at Bachelor's degree level.
   d. Bachelor's degree and Master's degree level in general stream (Arts, Science and Commerce streams).

21. To study the difference, if any, in family economic status between the students studying in Bachelor's degree level and Master's degree level in
   a. Arts,
   b. Science &
   c. Commerce Streams.
1.4.3 Hypotheses of the Study

To realize the objective nos. 14 (a & b), 15, 16, 17, 18, 19, 20 and 21, the following hypothesis were formulated and tested.

1. There is no significant difference in private unit cost between:
   a. B.A., B.Sc. and B.Com. degrees

2. There is no significant difference in the private unit cost between
   a. B.A. and M.A. degrees
   b. B.Sc. and M.Sc. degrees
   c. B.Com. and M.Com. degrees

3. There is no significant difference in average (mean) expenditure incurred during study leading to Bachelor’s degrees between:
   a. Rural and Urban Students
   b. Boys and Girls
   c. Hostelites and Day Scholars
   d. Students studying in Government managed and Government aided institutions (i) for all courses combined, and (ii) each course separately.

4. There is no significant difference in average (mean) expenditure incurred during study leading to Master’s degrees between:
   a. Rural and Urban Students
   b. Boys and Girls
   c. Hostelites and Day scholars
      i. all courses combined
      ii. in Arts, Science and Commerce streams separately.
5. There is no significant correlation between the family economic status and private unit cost of higher education.

6. There is no significant correlation between monthly income of the family and the pocket expenses of the students.

7. There is no significant difference in the family economic status between the students studying in
   a. General stream and professional courses at the Bachelor's degree level.
   b. Arts, Science and Commerce streams at the Bachelor's degree level.
   c. Different professional courses.

8. There is no significant difference in family economic status between the students studying at Bachelor's degree and Master's degree levels in general stream (Arts, Science and Commerce considered together).

9. There is no significant difference in the family economic status between the students studying at Bachelor's degree level and Master's degree level in
   a. Arts
   b. Science
   c. Commerce.

1.4.4 Definitions of Terms

a) Higher Education: In the present study higher education is defined as the education available in the state of Goa after 10+2 stage. It includes education in the general stream i.e. Arts, Science and Commerce streams as well as professional and technical education such as Education, Law, Management, Architecture & Nursing available in different colleges/institutions and in Goa University. It includes both Bachelor's and Master's degree courses.
b) **Cost**: The monetary value of all resources used/expenses incurred for producing goods and services is known as cost. The cost of education in the present study include the direct recurring expenses incurred calculated in terms of monetary value for producing graduates or post-graduates i.e. the amount directly spent on education by the institution as well as the students themselves and/or the students’ families. All costs were calculated at the current price.

c) **Unit Cost**: It is the average cost incurred in producing a graduate or a post-graduate (Master’s degree) in any particular course/discipline/subject.

d) **Actual Institutional Unit Cost**: It is the average recurrent cost actually incurred by educational institutions in producing a graduate or a post-graduate (Master’s degree) in any particular course/discipline/subject. Actual Institutional Unit Cost of a particular degree was calculated at three levels: (i) Overall i.e. in the state of Goa as a whole by considering all the Institutions offering the same course in the state together; (ii) in a particular type/category of Institutions (wherever applicable); and (iii) in an individual institution.

e) **Expected Institutional Unit Cost**: It is the average recurring cost that an educational institution is supposed to have had incurred if it had enrolled the adequate number of students (total seats available in a particular course/subjects) in producing a graduate or a post-graduate (Master’s degree) in any particular course/discipline/subject.
f) Private Unit Cost: It is the average cost incurred by a student and/or his/her family in obtaining a Bachelor's or Master's degree in any course/discipline/subject.

g) Social Unit Cost: Sum total of the actual institutional unit cost and the private unit cost of a particular degree is considered as social unit cost of the said degree in the present study.

h) Salary Unit Cost: It is the average cost per student incurred by an educational institution for the payment of salaries to both the teaching and non-teaching staff. Salary includes basic pay, dearness allowance, house rent allowance, city compensatory allowance, interim relief, traveling allowance, leave travel concessions, medical allowance/reimbursement, children's educational allowance and Bonus to non-teaching staff.

i) Non-Salary Unit Cost: It is the average cost per student incurred by an educational institution under non-salary heads of expenditure. The non-salary heads of expenditure includes maintenance of infrastructure, stationery, co-curricular activities, consumable chemicals, equipment etc. for laboratories, books/journals, in-service education of teachers etc.

j) Government Institutions: The institutions/colleges of higher education which are owned and managed by the Government of Goa are called Government Institutions.
k) **Private Institutions (Government Aided Institutions):** Those institutions of higher education which are owned and managed by private bodies/individuals/organizations but receive grant-in-aid from the Government of Goa.

l) **Rural and Urban Students:** The students who reside in rural areas are considered as rural students, a rural area so defined in the 1991 census report for the state of Goa. On the other hand, the students who reside in urban areas are considered as urban students, an urban area so defined in the 1991 census report for the state of Goa.

m) **Hostelites and Day-Scholars:** The students who were residing in hostels or as paying guests or in-students' mess during the period of their study were considered as hostelites. On the other hand, the students who were residing with their parents/guardians during the period of their study were considered as dayscholars.

n) **Family Economic Status:** The total monthly income of the family and the total property/assets owned by the family converted in rupees were considered as the indicators of Economic Status of a Family in the present study.

### 1.4.5 Scope and Delimitations of the Study

Considering the time constraints and the non-cooperation of the concerned authorities of some of the institutions of higher education, the researcher delimited the study in different aspects as follows:
i. The institutional unit costs of B.A., B.Sc., B.Com., B.Sc.(Home Science), B.Sc. (Nursing), LL.B., B. Arch., B.Ed., M.A. (Languages), M.A. (Social Science), M.Sc., M.B.A., M.Com., M.Ed. and M.C.A. degrees were studied.

ii. The professional courses such as Pharmacy, Engineering, Medicine, Music, Fine Arts & Dental Sciences were not covered in the study.

iii. Only the private unit cost of B.A., B.Sc., B.Com., B.Sc. (Home Science), LL.B., B.Sc.(Nursing), B.Arch., B.Ed., M.A., M.Sc. & M.Com. degrees were studied.

iv. The unit costs of different degrees were limited to those students who graduated in the year 2000.

1.4.6 Limitations of the Study

i. The institutional unit costs of B.A., B.Com. & B.Sc. degrees were based on the data obtained from 08 colleges only.

ii. The findings relating to sources of income and heads of expenditure (components of institutional cost) were based on the data collected only for three academic years (the average of the three years income and expenditure were considered).

iii. The students of Management responded only to the Economic Status Questionnaire.

iv. The amount in Rupees considered in the study are the approximate figures.