CHAPTER I

INTRODUCTION

Of all the millions of creatures inhabiting this planet, the human being is unique as he alone possesses a sense of discretion which helps him to distinguish between right and wrong. Education, which is more an activity than a concept, certainly helps an individual human being in realising his full potential. It plays a very significant role in transforming the instinct-driven human being into a rational creature who can think logically. In other words, education is intended for the intellectual, moral and spiritual progress of human beings. In ancient times, only oral education was available and the teachers passed on their knowledge to their disciples orally. Gradually, education underwent many revolutionary changes in accordance with the needs of the society and reached the present system of scholastic education to serve the various purposes of present times. The status of education and the ever-growing demand for it even in the past necessitated careful financing of education. Based on this assumption, the whole period of Indian history can be divided into epochs like the Vedic Period, the Buddhist Period, the Post-Gupta Period, the Medieval Period, the British times and the post-independence era. The education during the Vedic Period was dependent on financial munificence of the ruling class. The teacher-priest did not collect any tuition fee from the disciples. During the Buddhist Period, the chief sources of finance were charities and donations from the rulers and noblemen. The pupils had to pay fees either in kind or in the form of service to the teacher during their stay in the educational centre. In the Post-Gupta Period, sources of educational income were almost the same as pointed out. Teachers were paid either in cash or kind. During the Medieval Period, a new source of income
towards education was the fees paid by students in addition to state's aid and endowments from noble persons. During the British Raj, the East India company realised its responsibility for financing education after a lapse of nearly 100 years. Consequent upon the Charter Act of 1813 and Charles Wood's Despatch of 1854, the Government's financial assistance to education increased steadily. In 1817, the responsibility of promoting education was transferred to the provinces by the Central Government. In the middle of the nineteenth century, grants-in-aid were sanctioned to the privately managed institutions provided these institutions charged fees and followed the norms laid down by the Government in this regard. However, the universities had to wait for about half a century to receive any grant regularly from the Government. The two economic depressions and the Second World War forced the provincial governments to impose cuts on educational expenditure.

In the constitutional scheme of division of functions between the centre and the states, education is a subject allotted to states. The major responsibility of promoting education, therefore, rests with the State Government. Presently, education is on the concurrent list. Although the residual responsibilities to finance educational programmes rest with the State Government, the Central Government has been entrusted with certain specific responsibilities. These include matters of national importance such as coordination of educational facilities, determination of standards of higher education, scientific and technical education, promoting linguistic research for the development of Indian languages etc. The Government of India determines educational priorities on a national scale and allocates resources to central and centrally sponsored sectors of education, apart from allocating resources for plan outlays to be
spent through State Governments. Several organisations are concerned with the provision of financial assistance to universities. There is no in-built mechanism of mutual consultation among these organisations. The University Grants Commission (UGC), the main instrument of the Central Government through which higher education in the country is being financed, has an extremely truncated responsibility. The State Government is generally guided by the UGC in the matter of extending financial assistance for the development and expansion programmes of universities. If there is no synchronisation between the priorities set down by the UGC and those of the State Government, many development and expansion programmes will have to be abandoned since the matching grant would not be forthcoming even if the UGC approves a particular scheme or course. In some instances, the university loses because of the reluctance of the UGC while in others because of that of the State Government. In the ultimate analysis, the development and expansion programmes of the university will be adversely affected because of the reluctance of both the UGC and the State Government. Such instances were not rare in the history of universities in the country. In India, in the post-independence period, the experiments in education, for the purpose of providing equal opportunities to all the citizens and to supply skilled manpower to the economy, have created a tremendous amount of pressure on both the educational system and the economy. These experiments, which aim at introducing certain specific measures to reform some aspects of the system, have necessitated larger allocation of finances for education. In view of these measures, it is necessary to conduct a critical evaluation of the sources and the use of scarce financial resources in higher education at the university level.
Financing of education in the planning era:

After independence, the education scene in India entered a new era. This was the era of promoting education in a planned manner. As India was an impoverished nation at the time of independence, development of education in a systematic and planned manner became imperative. With the exception of foreign aid, the sources of financing education in the planning period continued to be the same as in the pre-independence period. The foreign aid is received through the Government of India in the form of scholarships, equipment, personnel and development programmes in education. Since independence, Five Year Plans have advocated systematic distribution of financial resources and planning of human resources. Education was considered an important subject in all the Five Year Plans. The First Five Year Plan\(^1\) emphasised the universalisation of primary education and strengthening of secondary education. The Second Plan\(^2\) laid stress on basic education, expansion of elementary education, diversification of secondary education, improvement in the standards of college and university education and extension of facilities for technical and vocational education. The Third Plan placed emphasis\(^3\) on the requirement of trained manpower for the economy which was considered to be a major determinant of the measure of advance that could be achieved in different directions. Incorporating the recommendations of the Education Commission of 1964-66, the Fourth Five Year Plan\(^4\) aimed at providing free and compulsory education up to the age of 14. For secondary and higher stages of education, more emphasis was laid on consolidation and diversification so as to meet the diverse needs of trained manpower of requisite standard. The Fifth Five Year Plan\(^5\) laid emphasis on establishing closer links.
between the pattern of education and the needs of development and the employment market. It also laid stress on involving the academic community including students in the task of social and economic development. The Sixth Five Year Plan\(^6\) assigned the highest priority to the programmes of universalisation of elementary education and it proposed a ten-year strategy to realise this constitutional directive. The Seventh Five Year Plan\(^7\) accorded over-riding priority to the improvement of the quality of education. Consolidation and optimum utilisation of existing infrastructural facilities, their upgradation and modernisation, identification of critical areas and creation of infrastructure in new areas of emerging technology, effective management of the overall system, and linkage between technical education and other development sectors at institutional level were considered during the Seventh Five Year Plan. The universalisation of elementary education, eradication of illiteracy among people belonging to the age group of 15-35 years and strengthening of vocational education so as to realise the emerging needs of the urban and rural settings are the major thrust areas of the Eighth Five Year Plan\(^8\).

Turning to allocation of plan resources, we find that the plan expenditure on education recorded a rapid increase. For education, in the First Plan, Rs 170 crores were allocated vis-a-vis Rs 19,600 crores in the Eighth Plan (see Table 1.1). The amount spent on higher education increased from Rs 15 crores to Rs 1,516 crores during the same period. The outlays on education and higher education have multiplied by 115 times and 101 times in the Eighth Plan over the First Plan sequentially. There was a gradual increase in the public sector outlay on education in plan after plan in absolute figures except during the three annual plans. Here it is to be noted that the period is 3 years as
<table>
<thead>
<tr>
<th>Plan period</th>
<th>Plan outlay</th>
<th>Outlay on Education</th>
<th>Actual expenditure on Education</th>
<th>% of col (3) to col (2)</th>
<th>% of col (4) to col (3)</th>
<th>% of col (5) to col (3)</th>
<th>% of col (6) to col (4)</th>
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<tbody>
<tr>
<td>First Plan (1951-56)</td>
<td>2070</td>
<td>170</td>
<td>15</td>
<td>153</td>
<td>14</td>
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<td>8.82</td>
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<td>Second Plan (1956-61)</td>
<td>4800</td>
<td>277</td>
<td>47</td>
<td>273</td>
<td>48</td>
<td>5.77</td>
<td>16.97</td>
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<tr>
<td>Third Plan (1961-66)</td>
<td>7500</td>
<td>560</td>
<td>82</td>
<td>589</td>
<td>87</td>
<td>7.47</td>
<td>14.64</td>
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<td>331</td>
<td>74</td>
<td>323</td>
<td>77</td>
<td>5.00</td>
<td>22.36</td>
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<tr>
<td>Fourth Plan (1969-74)</td>
<td>15900</td>
<td>822</td>
<td>184</td>
<td>748</td>
<td>188</td>
<td>5.17</td>
<td>22.38</td>
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<td>Fifth Plan (1974-79)</td>
<td>37250</td>
<td>1285</td>
<td>292</td>
<td>1143</td>
<td>318</td>
<td>3.45</td>
<td>22.72</td>
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<tr>
<td>Sixth Plan (1980-85)</td>
<td>97500</td>
<td>2524</td>
<td>486</td>
<td>2618</td>
<td>560</td>
<td>2.58</td>
<td>19.26</td>
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<tr>
<td>Seventh Plan (1985-90)</td>
<td>180000</td>
<td>5457</td>
<td>961</td>
<td>7633</td>
<td>1092</td>
<td>3.03</td>
<td>17.61</td>
</tr>
<tr>
<td>Eighth Plan (1992-97)</td>
<td>434000</td>
<td>19600</td>
<td>1516</td>
<td>25414*</td>
<td>2361*</td>
<td>4.52</td>
<td>7.73</td>
</tr>
</tbody>
</table>

**Note**  
* Provisional

Ministry of Human Resource Development 1998, pp 11-18
against 5 years in the case of remaining plans. There are fluctuations in the rate of growth. The share of education in the plan outlay declined from 8.21 per cent during 1951-56 to 4.52 per cent during 1992-97 with relative ups and downs. Of all the plans, the Sixth Plan recorded the lowest growth at 2.5 per cent. The allocation was less than 5 per cent up to the Fourth Five Year Plan. The proportion of outlay on higher education in the overall outlay on education was 8.82 per cent during 1951-56 as compared to 7.73 per cent during 1992-97. In the meantime, fluctuations were highly considerable. In the three plans between 1966-69 and 1974-79, the proportion of outlay was more than 20 per cent and in the remaining cases, it was in the range of 14.64-19.26 per cent. The actual expenditure on education was Rs 7,633 crores in the Seventh Plan as against Rs 153 crores in the First Plan. On higher education, it was Rs 1,092 crores and Rs 14 crores in the former and the latter separately.

The provisional expenditure during Eighth Plan for education and higher education was Rs 25,414 crores and Rs 2,361 crores respectively. In the case of education, actual expenditure was below the target in all the plans excluding Third, Sixth, Seventh and Eighth plans, which formed 105.18 per cent, 103.72 per cent, 139.87 per cent and 129.60 per cent sequentially. In respect of higher education, a contrary picture exists except during the First Five Year Plan. The proportion of actual expenditure in the target was 93.33 per cent during 1951-56. In the rest of the cases, the share of actual expenditure in the amount proposed was in the range of 102.13-115.23 per cent.

Thus, a study of the progress of expenditure on education and higher education highlights the fact that the expenditure on higher education, in proportion to the overall expenditure on education, as well as plan outlay, had
been an increasing one. In general, actual expenditure surpassed the outlay originally planned. The plan outlay/expenditure on both education and higher education had not steadily increased. The resources allocated for education were usually cut down at various decision making stages in the planning process. Actual plan expenditure was much less than what was recommended by the expert 'working groups on education' and was usually less than the proposed plan outlay. Expansion of higher education was accorded a high priority up to the Fourth Five Year Plan. Since then, consolidation and improvement of higher education was on the priority list. Quantitative growth at lower levels and qualitative improvement at higher levels, both in the general and technical education, are noteworthy features of plan priorities since the beginning of the planning period. It can be summed up that, by and large, high priority was accorded to higher education as far as allotment of resources in the successive plans are concerned. It is not clear whether, even after getting some what preferential treatment in the allocation of resources, the funds made available to higher education are adequate to meet its legitimate needs.

The Education Commission recommended that 6 per cent of the gross national product (GNP) should be spent on education to realise plan targets of educational advancement by 1986. It is evident from Table 1.2 that the investment on education was much below the level recommended by the Education Commission. The expenditure on education was 1.3 per cent of GNP in 1951 as against 3.9 per cent in 1997. It can be observed that education in the scheme of plan priorities could not get as much attention as it was envisaged. Relatively smaller amounts were spent on education. This is a discouraging feature of plan allocation for education. The resources allotted for
education in the Five Year Plans were reduced at different stages. Further, though elementary education was recognised as crucial for national reconstruction, planning was sharply skewed in favour of higher education from the Second to the Seventh Plan. There is ample evidence from countries such as Japan, South Korea, etc., that the investment in primary education yields high returns both in terms of social development and economic growth. A UNICEF document\textsuperscript{10} pointed out that, in India, 55 per cent of Government spending on education was used to subsidise the best-educated 10 per cent.

Table 1.2: Expenditure on Education as Percentage of GNP during 1952-97

<table>
<thead>
<tr>
<th>Year</th>
<th>% of GNP</th>
</tr>
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<tbody>
<tr>
<td>1952</td>
<td>1.3</td>
</tr>
<tr>
<td>1962</td>
<td>2.7</td>
</tr>
<tr>
<td>1972</td>
<td>3.3</td>
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<tr>
<td>1982</td>
<td>3.0</td>
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<tr>
<td>1992</td>
<td>3.4</td>
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<tr>
<td>1993</td>
<td>3.4</td>
</tr>
<tr>
<td>1994</td>
<td>3.5</td>
</tr>
<tr>
<td>1995</td>
<td>3.5</td>
</tr>
<tr>
<td>1996</td>
<td>3.8</td>
</tr>
<tr>
<td>1997</td>
<td>3.9</td>
</tr>
</tbody>
</table>

Note: From 1992, Government expenditure only


2 Review of literature:

In this section, earlier studies relating to the present theme are reviewed to find out the gaps in the existing literature. Goodwin\textsuperscript{11}, while covering a period from 1860 to 1933, traced out the relationship between the fees charged and
the economic cycle. His findings indicate that the movements in the level of tuition fees tend to lag somewhat behind the movement in whole-sale prices. Falling prices are not followed by reductions in fees in colleges but price increases are typically followed, after some delay, by increase in tuition fees. The chief adjustment of tuition fees to changes in whole-sale price level seems to be made in times of increasing price levels than in times of decreasing price levels. Tuition fees seem to be adjusted much more exactly to an index of wages than to an index of price levels, although the economic data on which Goodwin's study of relationship between fees and wage levels was made were not sufficiently comprehensive to draw definite conclusions. The Central Advisory Board of Education in its report of 1943 emphasised the need for university education but cautioned that the growth should be in proportion to the expansion of education facilities at the lower stages and subject to their introduction in a planned manner. The document provided the details of cost of education, sources of income and ways of bringing education into a meaningful relationship with national resources and expectations.

Rizvi reported that the public funds and fees were the mainstay of financing higher education. The proportion of funds allocated to higher education was small and below the optimum level of investment. The contribution of the state in financing education was largely based on value-judgement. He opined that since the aim of higher education is economic development, larger funds should be assigned to scientific and technical education, priority should be accorded to higher education in the union and state budgets, the system of financing higher education should be based on the sovereignty of the individual and not of the educational institutions, the support should be strictly made on an individual basis but not on an institutional basis.
as had been done so far, and the state should subsidise selected students for general education and advance loans to deserving students who wish to improve their economic productivity by acquiring technical education etc. The University Education Commission\(^4\), appointed by the Government of India during 1948 under the Chairmanship of S. Radhakrishnan, made the following recommendations: establishment of rural universities on the lines of Shantinikatan and Jamia Millia, increase of grants for scholarship and stipends so that the poor may not suffer, improvement of standards in the teaching profession, promotion of teachers from one category to another solely on the basis of merit, and elimination of denominational or sectarian and religious considerations in education.

Mishra\(^5\) made an intensive study of educational finances from 1698 to 1956 and assessed the policies, purposes and lapses involved in their handling by both the public and private agencies. He found that education was always considered an unimportant subject in the country's budget second to imperial needs. The Government subvention never crossed 50 per cent of the total expenditure on education. The assignment of local bodies was small for want of statutory obligation. Fees had been the main source and other sources declined with time. The administrative changes were not always conducive to higher expenditure on education. The economic conditions and natural calamities reduced the financial resources for it. The author suggested the following: the Central Government should help to resolve the disparities in education between different areas by reorganising private enterprise in education and evaluating its own effort from time to time, at the state level, educational administration should be decentralised. At least 20 per cent of the budget should be allocated to education, local bodies should levy education
cess and assign 40 per cent of their revenues for education, and private enterprise should be accorded a definite status in the field of education. The author emphasised the need for eliminating wastage in educational expenditure, advisability of giving general grants by the Centre, giving importance to research and organising education for social and emotional integration of the people.

The Education Commission, constituted under the Chairmanship of D S Kothari, opined that the situation in higher education was unsatisfactory and alarming. In certain areas, general standards had fallen and rapid expansion resulted in poor quality. This was supported by examination results, reports of Public Service Commissions, view of employees, assessment of teachers, results of research data etc. It was found that the share of expenditure on education in the national income was 4.1 per cent in 1976 as against 6 per cent in 1986. Further, while studying the linkage between university autonomy and finances, the Kothari Commission lamented that the flow of funds from the Government restricted academic freedom. It was pointed out that "University autonomy cannot become real and effective unless adequate provision was made to meet the financial requirements of universities and colleges". While the UGC was established to provide the necessary finances to universities without government control or interference, state universities had to depend, for maintenance grants and matching share on the funds provided by State Governments. This curbed the freedom of universities. This is obviously undesirable. In addition, while examining the pros and cons of 'block grant system' of funding universities, the Education Commission of 1964-66 recommended the following block grant should be fixed on a rolling basis, provision should be made for inevitable increase in expenditure during
the period of grant, special grants should be made for unforeseen developments, and a cushion against unforeseen eventualities must be provided. To do this a special contingency fund may be created whose utilisation will be left to the discretion of universities. The report warned that while enjoying autonomy, universities should be governed by one over-riding consideration, i.e., commitment to truth in all fields of activity. Its implementation has left much to be desired even now.

Vaizey and Sheehan\textsuperscript{17} have concluded that there has been a decline in fees in England since 1920. It was the result of a deliberate policy and the authors attributed the following reasons for it: Education was provided freely as part of a policy that families shall be no worse off because they have children than childless couples or bachelors and spinsters. Another cause was the policy makers felt that families with clever or abnormal children should not be unduly penalised by collecting more for education than families with ordinary children. Finally, it was felt that society needed educated citizens.\textsuperscript{11} Smith\textsuperscript{18} analysed the cost of further education in British colleges and made use of various definitions of marginal cost. Firstly, he defined marginal cost as the addition to total financial cost due to educating an additional student in an existing course. Secondly, he defined marginal cost as the addition to total financial cost of educating an additional student if a course had to be duplicated and had been accompanied by some improvements in efficiency. Smith found wide variations in marginal cost between courses and between definitions. But the financial cost under marginal cost concept was much lower than under the average cost concept.
Maynard, in his study, examined the cost per student across the institutions of varying sizes. The findings include a long-run cost function in the institutions of higher learning (IHL) was traditionally 'U' shaped, parabola is superior to a linear function for explaining IHL variations in the cost per student, size of the institution significantly explains the variation in the cost per student among similar students, planning for higher education was predicated on the belief that capital outlay was an enormous drain on the exchequer, and careful planning and location of large institutions was essential. The author suggests that more individual campuses might be a wise economic course for states to follow. If the argument is at all valid, it would suggest that states should look more carefully at assisting private institutions in having an economically viable size as a means of fulfilling their responsibilities in education. It seems to have been devoted primarily to non-economists and was written in an unusually felicitous style, a style not found frequently in economic treatises.

D Jha found in a study on Patna University that when it became a teaching-cum-residential university in 1952, the expenditure increased substantially. Government grants were the main source. There was a deficit of funds during 1964-65 itself. The Finance Committee failed to function properly due to the absence of a financial code. K Mukerji studied the finances of Calcutta University. The author concluded that the administrative expenditure was 30 per cent of the total expenditure between 1948-49 and 1969-70. During the same period, the salary of teachers was in the range of 13-12-18.76 per cent. The trust and endowment funds went a long way in sustaining the finances of the university.
Nanjundappa\textsuperscript{22} carried out a study on the finances of Karnataka University. He found that the share of state government in the income of the university was 54 per cent. The proportion of fees was 35 per cent. There was a decline in the per capita grants. The per capita expenditure was Rs 80 during 1950 as compared to Rs 3,306 during 1973. There was an enormous increase in expenditure especially in the academic departments. But the grants for teaching staff in the total grants constituted a mere 13 per cent. The share of expenditure on examinations increased from 19.8 per cent during 1950 to 27.4 per cent during 1973. He is of the view that the expenditure on auxiliary enterprises should be curtailed considerably because it is a potential source of input which could help augment income in the long-run. Finally, he concluded that there is an urgent need to curb rapidly increasing expenditure. In a report,\textsuperscript{43} it was pointed out that the responding institutions showed little enthusiasm while raising private contribution to higher education. Further, increasing taxation and spiralling inflation, particularly in the post-independence period, had seriously limited the capacity of the people in the lower and middle income groups to contribute to education. The tendency to leave as much to the government as possible is a direct cause of declining private contribution. It was also noted that, unlike in the pre-independence period, the call to 'national duty' fails to get an enthusiastic response from the public. It is feared that, if no special measures were initiated to stimulate private contribution, it could be written off in the not-too-distant future as a dependable source of financing university education.

Azad\textsuperscript{24} reviewed the trends in the financing of higher education in India in the post-independence era. The author observed that the increase in
expenditure on higher education was much faster than the increase in enrolment. There were wide variations in the allocation of financial resources amongst the different states in the country. The present policy of ad-hocism in government support should be replaced by rationally devised criteria. The agencies of financing should have an in-built mechanism of mutual consultation and coordination. All higher education should be placed under the control, supervision and administration of the UGC, whose working should be decentralised and membership enlarged. The states should have their own UGC's. Individuals and corporate sector contributing generously to private enterprise in the field of education should be exempted from income tax. The state should primarily develop under-graduate education and extend assistance liberally to private agencies for setting up of institutions of higher education. The author felt that it is necessary to adopt a policy of planned institutional spread so as to conserve the financial resources available for higher education. It appears necessary to adopt a bold and realistic policy of educational expansion under which the uneconomic units are closed down.

The author analysed the growth of expenditure on higher education in terms of national income for certain select years. To facilitate comparison during the period of study, he deflated the expenditure with the help of whole-sale price indices. Further, he felt that in view of the paucity of resources and the competing demands of 'core' areas like defence, it may not be possible to allocate a larger share of the national income to education. An optimum utilisation of available resources for education is an imperative under the present circumstances.
Panchamukhi made an attempt to evolve principles of resource mobilisation and utilisation in 'non-profit' institutions of higher education viz., Bombay University. The study observed that a major share of expenditure was claimed by administration, though non-salary component claimed a larger share in expenditure, expenditure on salary increased faster than non-salary expenditure, fee income played a minor role in meeting supply costs indicating that there is a higher degree of subsidisation to students and cost of students' assistance programme had substantially increased over a period of time. The author suggested that the university should make a serious effort to attract donations from private sources for financing development programmes, fee income has to be productively enhanced by formulating imaginative plans and widening the scope of extension courses, in the budgetary system, it is necessary to present details about opening balance, effect of budget and closing balance for the year, and even if the university is a non-profit making institution, the balance sheet is to be prepared in such a way as to give an idea of the magnitude of expenditure incurred on certain specific activities during the year.

Mathew conducted an enquiry into the finances of Kerala University. The period of the study was from 1947 to 1975. The author observed that a major share of plan grants was provided to departments of study and research. The proportion varied between 52 per cent and 99 per cent. As far as the overall revenue of the University is concerned, it registered an average annual rate of growth of 13.5 per cent. The grants from the State Government declined from 83 per cent in 1948 to a meagre 35 per cent in 1975. The plans are not based on a clear understanding of the needs of development but are...
characterised by ad-hocism. While formulating plan proposals, sufficient care was not exercised. Consequently, there is a wide gap between the proposals and response as far as the quantum of financial assistance is concerned. The author suggested that at the time of finalising plan proposals, the Syndicate should also take into account the resolution passed earlier by the Senate of the University regarding such matters as starting new departments of study and research, establishment of new university centres, additional facilities for students etc. There should be a clear understanding of the development needs of the university.

Kiranmayi\textsuperscript{27} compared the various sources of funds of three universities namely, Delhi, Andhra and Nagarjuna. The author stated that state universities were facing severe problems in securing funds from the State Government and the UGC whereas central universities were fortunate enough in securing around 90 per cent of their total requirements from the UGC. While commenting on expenditure, all the universities spent around 70 per cent of their expenditure on non-academic activities. The author underlined the need for scientific financial management for efficient and effective utilisation of funds and opined that unless the universities bestow their attention on managing the funds effectively, they cannot overcome the present financial crisis. Subramanyam\textsuperscript{28} reviewed the working of Andhra University for a period of 48 years. He used both the primary and secondary sources of data. The observations were as follows: commencing with 23 students during 1932, the University grew by leaps and bounds with 5,054 students during 1974. The Science and Engineering students accounted for over 50 per cent and the rest belonged to arts, commerce and law courses. The number of teachers had gone up from
6 to 489 during the period referred to. But this increase in the number of teachers was not found to be adequate due to the teacher-student ratio which increased from 1.4 during 1932 to 1.10 during 1974, and increase in student enrolment was matched by a proportionate increase in the teaching staff only in the case of Science and Technology courses. Among the university colleges, the Science College had a better teacher-student ratio, the income of the University had shown a tremendous increase of more than a hundred fold during the period of study, academic sources of income constituted 80 per cent of the total income while the non-academic sources constituted the rest, in the income, the State Government's share formed over 97 per cent, the expenditure on general administration was in the range of 20-30 per cent, the expenditure on teaching departments varied between 40 per cent and 69 per cent, and the expenditure on library was in the range of 2.58-9.12 per cent. The author suggested a method of providing for depreciation on the fixed assets of the University.

Paramanand Singh highlighted the problems of financing of university education in Bihar. The author was of the view that the per capita expenditure on education was low. Despite increase in expenditure on education, there was a decline in relative terms after 1965. The percentage of fees decreased from 52.6 per cent during 1951 to 28.4 per cent during 1967. The contribution of local boards was almost nil and that of endowments insignificant. The author suggested that all available resources should be tapped to raise per student expenditure in Bihar universities, effective steps should be initiated to ensure that the funds sanctioned for construction of buildings are not diverted to other uses, the system of block grants should be continued but reorganised on the
lines suggested by the Education Commission of 1964-66, and attempts should be made to invite the attention of the potential donors to educational institutions. The author concluded that the universities are grossly under-financed in view of the tasks to be performed. More universities, more enrolment, more staff, better-paid staff, more equipment, more scholarship, more libraries, more extra-curricular facilities, more hostels and more buildings—all these are urgently required. All this means growing expenditure which can only be met by launching a campaign for tapping resources both from public and private sources. No doubt, the role of private sources is not unimportant but as things are, the public sector has to play the major role. In a planned economy, the state can no longer afford to remain a passive spectator. In a modern democratic socialist set up, there will have to be increasing participation of state in bearing the burden of ever-increasing expenditure on education, particularly university education. The state, therefore, should come forward with more funds and a well thought out effective policy of allocation for a balanced growth of university education throughout the country. Besides, the individuals, who are directly benefited by the university education, should also be made to pay more.

Clark examined how higher education was organised and governed in USA. The author opined that the power groups within the higher education system have the capacity not only to shape their immediate work environment but also to affect the world. Clark tries to analyse the basic structure of higher education system. To do this, he embarks upon a cross national perspective of higher education system by focussing attention on "five generic questions" about academic systems in largely post-industrial societies. His contention is
that the answers to these questions will lead towards systematic answers to issues like what determines access, how general education can be supported, how the integration of teaching and research can be maintained in systems of mass higher education etc. Clark then narrows down his findings and points out that all these issues are heavily conditioned by the structural bases of higher education system. His contribution to the theory of higher education is a major one. It needs further refinement and amplification through case studies in a variety of contexts before it can be applied in a meaningful framework to study higher education system in the Third World Countries. Specifically, a continuous underlying emphasis should be placed throughout any study on the strong and growing trend of state intervention in the field of education and an attempt to evolve a national system of higher education. This affects the democratisation of higher education. Clark is rightly aware of this but has not pursued this in his analysis to the extent that it deserves, particularly at this juncture of the development of higher education throughout the world.

Garg\textsuperscript{31} conducted a micro level study confined to Punjab University (PU). The author concluded that the finances of PU were inadequate and, at times, uncertain and ad-hoc. For instance, in 1984, non-plan budget showed a deficit of Rs 71.83 millions whereas in 1951, the university had a surplus of Rs 16.65 millions. It was also found that there are oscillations due to inflation, displacements in administration and organisations. Further, demand for higher education came mainly from the middle class households. So far as equality of access was concerned, subsidisation definitely helped the erstwhile underprivileged class, women and the rural poor. But in the case of professional education, access was slow due to selectivity. Therefore, the author
recommended that there was an urgent need to restructure the curriculum in favour of vocational courses, particularly in colleges located in mofussil areas, where there is a dire necessity to convert general faculties into professional ones. However, the author felt that a careful planning and pre-investment survey was necessary before the curriculum was restructured.

Sulochana analysed the financing of higher education with reference to Osmania University (OU) covering a period of 16 years starting from 1970. The author noted the increased dependence on Government assistance, diminishing contribution of fees and near extinction of endowments in the financing of university education in the country. The share of fees in the total income decreased from 8 per cent in 1971 to a meagre one per cent in 1986. The author advocated the need to charge cost-based fees while continuing granting of scholarships to the needy. The author is of the opinion that in view of the hard days ahead, university-industry collaboration is highly desirable and that it needs to be promoted. It was also pointed out that the OU authorities had not evinced any interest in clearing the long pending audit objections. Local fund audit was ineffective due to lack of punitive powers vested with the auditors. V Ramamurthy, in his study, evaluated the efforts of Delhi University in introducing computer system for financial management. Further, he analysed the financial performance of the University by working out the details of resource allocation, per student cost for different departments, percentage of expenditure under different heads like capital and revenue etc.

A UGC Committee, under the Chairmanship of A. Gnanam, suggested that corporate sector (both private and public) should be encouraged to support higher education. Establishment of irrevocable endowments for special chairs, research activities etc., could form part of such support. The author rightly
pointed out that there is little scope for meaningful analysis on the basis of financial data presently available from the universities. The available information does not reveal the true financial health of a university. The modern concepts of budgeting, which relate expenditure to the objectives of university, are lacking. The author opined that the expenditure on various activities of university outgrew its resource base due to lack of correlation between resources and expenditure. He advocated liberal tax exemptions for donations to institutions of higher education on a par with donations to scientific research by extending 100 per cent tax exemptions. He also recommended establishment of 4-5 regional offices of the UGC for effective implementation and monitoring of the funding of universities and colleges. Sharma made an indepth study of financial management in universities under different five-year plans. The following are some of his conclusions: the share of education in the GNP was far below 6 per cent, the growth in Government expenditure on education was insignificant, government grants to higher education are to be determined on the basis of expenditure incurred in the preceding base year and by adding 10 per cent for price rise, and internal income should not be deducted from expenditure while fixing grants-in-aid so as to provide incentives to university to generate more income and to help in improving its financial position. The author recommended the following measures for improvement of various methods of financial management in the universities: Adequate funds, flexibility in allocation, timely allotment and release of funds by the funding agencies and an efficient system of auditing should be ensured for smooth running of various departments, uniform grants-in-aid rules should be formulated for all types of university institutions in the country so that there are no varying standards for their financing, performance budgeting should be
implemented, accounts should be prepared on the basis of single entry system, and the balance sheet should be prepared only for commercial units. It should be attached to accounts as annexure.

The Punnayya Committee\textsuperscript{36} reported that the government cannot ignore its responsibilities in the field of higher education. It states that "the state must continue to accept the major responsibility for funding the essential maintenance and development requirements of universities" and although primary education is fundamental to the nation, higher education determines its entire development including academic and technological progress. While it is mandatory that the nation achieves universal elementary education and total literacy, at the same time, we cannot afford to neglect our quest to achieve global standards of higher education. However, the report laid stress on the need for the universities to raise their internal earnings within a lead period of 10 years, to about 25 per cent of its total resources. The World Bank\textsuperscript{37} document pointed out that "higher education also contributed to self-sustaining growth through the impact of graduates on the spread of knowledge." Institutions of higher education have the main responsibility for equipping individuals with the advanced knowledge and skills required for positions of responsibility in government, business and profession. These institutions produce new scientific and technical knowledge through research and advanced training and serve as conduits for the transfer, adoption and dissemination of knowledge generated elsewhere in the world. Estimated social rate of return of 10 per cent or more in many low and middle-income countries indicates that investments in higher education contribute to increase in labour productivity and to higher long-term growth."
UNESCO\textsuperscript{38} in a policy paper maintains that there is a well established correlation between investment in higher education and the level of social, economic and cultural development of a country. It expresses concern over the observed trend towards a reduction in state contribution to higher education and reallocating these funds to primary and secondary levels of education. The report states that "state and society must perceive higher education not as a burden on federal budget but as a long term domestic investment, in order to increase economic competitiveness, cultural development and social cohesion". This UNESCO policy paper concludes that public support to higher education is essential in order to ensure its educational, social and institutional mission. Further, providing people access to higher education and to the broad range of services it can render to society. The support from the public should be part and parcel of any sustainable development programme in which high-level human expertise and professional skill are required.

Swaminadhan\textsuperscript{39} reported that the higher and technical education systems have done a commendable job in largely fulfilling the roles assigned to them despite certain limitations. The author opined that universities should interact with industrial as well as research and development organisations. The author had recognised the institution of corpus fund as an appropriate mechanism to achieve the objective of self-reliance. Rao\textsuperscript{40} made a general study of higher education from 1947 to 1996. The author opined that in a country like India with so much cultural, geographic and linguistic diversity, education is a key factor for development. Education can perform this role only if high standards are maintained at all levels. Since education is on the concurrent list, planning is essential in the setting up of new institutions. We have to adopt different strategies for the development of educational
To make higher education effective, there is a need to introduce innovative methods. The study of functioning of institutions of higher education needs to be updated so that decisions can be taken quickly. To achieve these goals, it should be ensured that economic development fulfills social policy objectives. The author concluded that institutions of higher education should think in terms of generating their own resources so as to reduce dependence on state funding. Swaminarayan studied the growth and expansion of higher education and at times the conflicting roles of main agencies such as the government, private sector etc. His suggestion of leaving day-to-day administration to institutions is timely. Further, he lamented that current infrastructure is inadequate to meet the needs of the education sector in the 21st century.

Deshmukh arrived at the conclusion that there is a tremendous explosion of knowledge in India but that it has not reached world standards. One of the deficiencies of higher education in India is its narrow focus and its not being properly integrated with the other levels of education. Besides, the knowledge sought to be imparted through higher education is also not up to date. Another major deficiency is inability to maintain requisite standards in the level of intellectual skills to be attained by the learner. Yet another deficiency is the lack of commitment to ensuring excellence in the chosen field by the learner. Absence of a stated objective for the institution is another major drawback. Because of this, there is no common goal for the teachers and students to achieve. It is held that there is a need for a bold, visionary and innovative leadership in the university system in this era of globalisation and new trends emerging in the field of education.
Gupta concluded that the managements of universities should constantly monitor the efficiency of university system, especially its financial management. Financial management is directly related to academic and administrative functioning vis-a-vis the use of resources drawn from the state exchequer, philanthropists etc. Finally, the author felt that if universities manage their financial resources properly, they can hope to achieve their objectives. Tilak dealt with the emerging trends, the recent reforms and their impact on higher education in India. It is stated that some of the reforms are necessary to improve the efficiency of higher education. And some of the attempts to reform higher education seem to go against well-cherished functions of higher education. Further, he argues that focus is laid on financial efficiency measured in terms of resource generation rather than academic excellence. The author points out that there is a need to maintain a balance between the functions of higher education and its resource requirements. The public good and social value of higher education on the one hand, and the needs of new globalised Indian economy on the other, should be kept in mind while formulating policies for the development of higher education.

Tilak found that the philosophy of giving loans to students does not recognise the commitment of higher education to promotion of 'individual' and public welfare. It treats higher education like any other private good. That higher education is an indispensable intellectual social investment is no more regarded as a valid argument. The author concluded that the concept of giving loans to students to enable them to join institutions of higher education has inherent weaknesses because it does not recognise the basic character of higher education. Hence, this philosophy is dangerous to society. The gains
it is supposed to provide are imaginary and the assumptions behind it are unrealistic. Empirically, it has not proved to be a feasible solution to the problem of inadequate resources for higher education nor an antidote to the regressive effects of increases in fees. It may indeed be a deterrent to the growth of higher education.

3 Need for the study

Though there are quite a few studies on higher education concerning student-teacher ratio, economics of education, administration, organisational structure, contribution to socio-economic development, impact on society, resource mobilisation, cost-analysis etc., studies related to management of finance in universities are limited in number. Though the SVU came into being some 45 years ago and grew numerically in terms of number of departments, students, teachers, non-teachers, strength of affiliated institutions, courses offered, research projects undertaken etc., there is no specific study even on its functioning as far as this researcher's knowledge is concerned. For that matter, no research study has been undertaken to determine how the resources of SVU are generated and utilised. Thus, a micro-level study of this unexplored area, namely, finances of SVU, and a reference to related studies, can throw light on the way this university is being administered. Public interest and government concern seem to have increased in the matter of the proper functioning of SVU. An in-depth analysis of the sources of its funds and their uses may reveal certain areas of weakness and may help suggest ways to overcome these deficiencies. Apart from this, the researcher has chosen the present theme of the finances of SVU since he has been associated with SVU for the past 10 years as a student. The researcher is familiar with men and
matters of SVU in general and its finances in particular. It is felt desirable to go into the finances of SVU to have a close look at its functioning. Therefore, there is an urgent need to carry out a detailed study of the finances of SVU. In addition, the present study can fill the gap in the existing literature as already pointed out. A modest attempt is made in this direction by analysing structure, pattern and trends in the sources of income and the pattern and magnitude of expenditure. The researcher has also made an attempt to know how funds are obtained from public and private sources, revenue and capital receipts, faculty and department wise expenditure, cost per student, transfer of funds from SVU to Government/agencies, generation of surplus, and debts, deposits, advances and investments.

4 Present study

A synoptic view of this study is presented in the following section.

4.1 Objectives The specific objectives of the study are

i. to review the progress of SVU,

ii. to examine the financial administration of SVU,

iii. to analyse the trends in the income of SVU,

iv. to assess the expenditure of SVU in terms of objects, patterns, magnitude and growth, and

v. to study the unit cost of education, surplus and debts, deposits, advances and investments.

4.2 Data collection The present investigation is carried out on the basis of documentary evidence. First hand information has been collected from the officials of SVU through interviews. Secondary data has been collected from
books, journals, periodicals, annual accounts, budgets and audit reports of SVU, publications of the UGC, AIU, Government of India and Andhra Pradesh

4 3 Use of deflators The revenue, expenditure, surplus, debts, deposits, advance etc., of SVU are analysed at constant prices. Money costs increased due to phenomenal increase in prices. Hence, it is desirable to measure them in real terms. This has to be carried out with the help of price-deflators. It is unfortunate that in spite of a long-felt need, no specialised index numbers of prices for activities other than the general economic situation and consumer’s welfare are available for the whole of India, much less for a part of the country. Particularly, no indices are available which take into account the ‘relevant weights’ and price-factors for university inputs. Thus, if there is an increase in revenue and expenditure of a university, it will be only due to inflation, which is a world-wide phenomenon. The following studies have employed index numbers in analysing and interpreting the data. Azad applied whole-sale price indices (WPIs) while deflating educational expenditure of India. In the case of Punjab University, Garg employed WPIs for capital expenditure and consumer’s price indices (CPIs) of urban non-manual employees for revenue expenditure. Mukerji deflated the financial data of Calcutta University with the help of Calcutta City CPIs. Panchamukhi deflated the expenditure of Bombay University by adopting WPIs. Atmanand Mishra deflated direct expenditure on education in India by using CPIs.

By taking all the relevant factors into account, revenue, expenditure, surplus, debts, deposits, advances, investments etc., at current prices are converted into constant prices. The average index of whole-sale prices is adjusted for the base year 1981 as 100. The WPIs for 1987 stood at 133.90.
In other words, if we deflate factors such as revenue mentioned earlier by this price-deflator, then their real level will be reduced by 33.90 per cent in 1987 at constant price (1981=100) The indices are furnished in Annexure I. Another important consideration in the conversion of monetary figures from current prices to constant prices was the selection of base year, which measures price effect. Generally, it should be a normal year. In the present investigation, 1981 is taken as base year. There are two reasons for it. SVU prior to this year was experiencing a period of consolidation. Consequently, this may be regarded as a development period. Therefore, the period prior to that year cannot be taken into account while computing real estimates. Although price-level started rising after the war with China i.e. in 1962, it was held that price effect after 1962 was mild and that it did not affect university costs in monetary terms significantly. But post-emergency period i.e. the period after 1977, experienced sharp price increase. By considering the aforesaid factors, WPIs are employed to deflate the financial data of SVU.

4.4 Statistical tools of analysis. In the present research study, various statistical tools such as coefficient of variation (CV), compound growth rate (CGR), Student's t-test for the significant difference between two CGRs, student's t-test for the significant difference between two sample means, Analysis of Variance (ANOVA) for one way classified data and income elasticity were applied to analyse the empirical data on receipts and expenditure of SVU for the period 1987-96. The time series data on receipts and expenditure are deflated with the help of WPIs for the corresponding years.
4.4.1 Coefficient of variation

Coefficient of variance (CV) is employed to measure dispersion between two or more series of data. It is defined as

\[ CV = \frac{\sigma}{\bar{X}} \times 100 \]

where \( \bar{X} = \frac{\sum X}{n} \) - Arithmetic mean

\[ \sigma = \sqrt{\frac{\sum X^2}{n}} - (\bar{X})^2 \] - Standard deviation

Here, \( \sum X \) Sum of 'n' observations in the data,
\( \sum X^2 \) Sum of squares of 'n' observations in the data

4.4.2 Statistical estimation of CGR

Under statistical method of estimation, we first fit an exponential model to the given time series data. Later, the CGR may be computed by using the estimates of the parameters of the model.

Suppose the values of a study variable (y) at time periods \( t_1, t_2, \ldots, t_n \) be \( y_1, y_2, \ldots, y_n \) respectively, we denote the coded time variable by \( x \) with the starting period as 1 and subsequent periods by 2, 3, \ldots, \( n \). Now, the time series data may be represented as

<table>
<thead>
<tr>
<th>Time (t)</th>
<th>( t_1 )</th>
<th>( t_2 )</th>
<th>( t_n )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coded time (x)</td>
<td>1</td>
<td>2</td>
<td>( n )</td>
</tr>
<tr>
<td>Study variable (y)</td>
<td>( y_1 )</td>
<td>( y_2 )</td>
<td>( y_n )</td>
</tr>
</tbody>
</table>

Let there be an exponential functional relationship between \( y \) and \( x \) as

\[ y_i = ab^{x_i} e^{e_i} \quad i = 1, 2, \ldots, n \]

or simply \( y = ab^x e^e \)
where \( y \) Dependent variable (receipts or expenditure), 
\( X \) Independent variable (coded time variable), 
\( \varepsilon \) Error variable 
\( a, b \) are the parameters of the model

Since direct fitting of an exponential model involves several difficulties, we generally transform the model into a log-linear form and then it may be fitted to the data. The logarithmic transformation of the model is given by

\[
\log y = \log a + X \log b + \varepsilon \text{ or}
\]

\[
Y = A + BX + \varepsilon \text{ which is a linear model}
\]

where, \( Y = \log y \), \( A = \log a \), \( B = \log b \)

The least squares estimates of \( A \) and \( B \) are given by

\[
\hat{A} = \frac{\sum X \sum Y - (\sum X) (\sum Y)}{n \sum X^2 - (\sum X)^2}
\]

\[
\hat{B} = \frac{\sum Y - \hat{A} \sum X}{n}
\]

Here, \( \bar{X} = \frac{\sum X}{n}, \bar{Y} = \frac{\sum Y}{n} \)

The estimated linear model is given by

\[
\hat{Y} = \hat{A} + \hat{B} X
\]

An estimate of original parameter \( b \) is given by

\[
\hat{b} = \text{Anti log} (\hat{B})
\]

Thus, an estimate of CGR is given by

\[
\text{CGR} = \frac{\hat{b} - 1}{100}
\]

**4.4.2.1 Test of significance of CGR** To test the significance of CGR, we use the following student's t-test statistic
We compare the calculated value of \(|t|\) with its critical value for \((n-2)\) degrees of freedom at an appropriate level of significance and draw the inference accordingly. If the calculated value of \(|t|\) is greater than its critical value, then the CGR is said to be significant at an appropriate level of significance, otherwise, it is said to be insignificant.

### 4.4.2.2 t-test for the significant difference between the CGRs of two series of data

Suppose \(\hat{B}_1\) and \(\hat{B}_2\) are the estimates of the slope parameters of the log-linear models, which may yield the CGRs of the two series of data respectively, to test the significant difference between the two CGRs, we use the following student's t-test statistic

\[
t = \frac{\hat{B}_1 - \hat{B}_2}{\sqrt{\frac{SE(B_1)^2}{n_1} + \frac{SE(B_2)^2}{n_2}}}
\]

Where,

\[
SE(\hat{B}_1) = \sqrt{\frac{\hat{\sigma}_1^2}{\Sigma X_1^2 - \frac{\Sigma X_1^2}{n_1}}} = \text{standard error of } \hat{B}_1
\]

\[
SE(\hat{B}_2) = \sqrt{\frac{\hat{\sigma}_2^2}{\Sigma X_2^2 - \frac{\Sigma X_2^2}{n_2}}} = \text{standard error of } \hat{B}_2
\]
Here, $X_1$ and $X_2$ are the coded time variables for the two series of data respectively,

$Y_1$ and $Y_2$ are the study variables for the two series of data separately, and $n_1$ and $n_2$ are the number of time periods for the two series of data sequentially.

We compare the calculated value of $|l|$ with its critical value for $(n_1 + n_2 - 4)$ degrees of freedom at an appropriate level of significance and draw the inference accordingly.

It should be noted that $n_1 = n_2 = n = 10$ for the present study.

4.4.3 t-test for the significant difference between the two samples means

Suppose $\bar{x}_1$ and $\bar{x}_2$ are the arithmetic means of two random samples of $n_1$ and $n_2$ observations respectively, to test the significant difference between the means of these two samples, we use the following student's t-test statistic

$$t = \frac{\bar{x}_1 - \bar{x}_2}{S'\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$$

where $S'^2 = \frac{n_1 s_1^2 + n_2 s_2^2}{n_1 + n_2 - 2}$
We compare the calculated value of $|t|$ with its critical value for $(n_1 + n_2 - 2)$ degrees of freedom at an appropriate level of significance and draw the inference accordingly.

The t-test statistic is used throughout the present study. This test is based on the assumptions of normality and independence of the random sample observations in the data. Generally, these assumptions may be hard to justify in the case of time series data. However, many statisticians proved that t-test is a robust test even in the absence of these assumptions (see Annexure II).

### 4.4.4 Analysis of variance (ANOVA) for one way classified data

Suppose a one way classified data consists of $K$ groups (samples) of $n_1, n_2, \ldots, n_k$ observations respectively and is represented by

<table>
<thead>
<tr>
<th>Data</th>
<th>Group (sample)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>$y_{11}$</td>
<td>$y_{12}$</td>
</tr>
<tr>
<td>$y_{1n_1}$</td>
<td>$y_{2n_2}$</td>
</tr>
<tr>
<td>Total</td>
<td>$T_1$</td>
</tr>
<tr>
<td>$(\text{Total})^2$/sample size</td>
<td>$T_1^2/n_1$</td>
</tr>
</tbody>
</table>
where, y's are the observations in the data,
T's are the sample totals,
G is the grand total

The various steps involved in the ANOVA technique are given by

Step (1) We first compute correction factor (cf) as
\[
\text{cf} = \frac{G^2}{n}
\]
where, \(n = n_1 + n_2 + \ldots + n_k\) = total sample size

Step (2) The sum of squares between samples (BSS) may be computed as
\[
\text{BSS} = \sum(T_i^2/n_i) - \text{(cf)}
\]

Step (3) We calculate the total sum of squares (TSS) as
\[
\text{TSS} = \sum y^2 - \text{cf}
\]
Here, \(\sum y^2\) = sum of squares of all 'n' individual observations in the data

Step (4) The sum of squares within samples or error sum of squares (ESS) may be calculated as
\[
\text{ESS} = \text{TSS} - \text{BSS}
\]

Step (5) To test the significant difference among the means of K samples, we construct the following table known as ANOVA for one way classified data

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Degrees of freedom (df)</th>
<th>Sum of squares (SS)</th>
<th>Mean sum of squares (MSS)</th>
<th>Calculated value of F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>k-1</td>
<td>BSS</td>
<td>BSS/k-1=M</td>
<td>(F_{cal} = M/E)</td>
</tr>
<tr>
<td>Error</td>
<td>n-k</td>
<td>ESS</td>
<td>ESS/n-k=E</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>n-1</td>
<td>TSS</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
We compare the calculated value of $F$ statistic with its critical value for $(k-1, n-k)$ degrees of freedom at an appropriate level of significance and draw the inference accordingly.

### 4.4.5 Statistical estimation of income elasticity

Income elasticity of expenditure is defined as the ratio of the proportionate change in expenditure to the proportionate change in income. Suppose $Y = f(x)$ is the expenditure function, where $Y$ denotes expenditure and $X$ denotes income. Mathematically, the elasticity of expenditure with respect to income is defined as

$$\eta_x = \frac{d \log f(x)}{d \log x}$$

The present study proposes expenditure function as

$$y = a x^b e^\epsilon$$

Where, $y = \text{Expenditure}$

$x = \text{Income}$

$\epsilon = \text{Error variable}$

$a$ and $b$ are the parameters.

The logarithmic transformation of the above model is given by

$$\log y = \log a + b \log x + \epsilon$$

This gives

$$\frac{d \log y}{d \log x} = b$$

In other words, $b$ gives a measure of income elasticity. We write the logarithmic equation as

$$Y = A + b X + \epsilon$$
where, \( Y = \log y \)

\[ X = \log x \]

and \( A = \log a \)

The least squares estimate of \( b \) is given by

\[
\hat{b} = \frac{\Sigma XY - (\Sigma X)(\Sigma Y)}{n \Sigma X^2 - (\Sigma X)^2/n}
\]

Here, \( n \) = Number of years

Thus, \( \hat{b} \) gives an estimate of income elasticity with respect to expenditure.

It can be interpreted that 1\% increase or decrease in income will result in \( \hat{b}\% \) increase or decrease in expenditure. The significance of income elasticity can be tested by using student’s t-test statistic as employed in the case of CGR.

4.5 Reference period  Since 45 years is a fairly long period, a period of 10 years, commencing from 1987, is chosen as a period of study.

4.6 Scope and limitations  The study has made use of available data only. The core area of the study is restricted to SVU as financial analysis needs to be carried out at micro-level. Hence, we could not consider all the administrative aspects of SVU. The issues concerning sources and uses of funds are primarily taken up for study. An attempt is made to examine these on a general plane and to illustrate the ideas developed with the help of basic data. Hence, we propose to consider the study not only as presentation of facts about the finances of SVU but also to treat it as a study of economics of university finances with specific reference to SVU.
Chapter outline  The thesis is organised into seven chapters. The first chapter is introductory in nature while the last one contains a summary of findings and conclusions. The middle five chapters analyse the finances of SVU in terms of specific themes of study. The core issue, running through all the five chapters, is financial administration at institutional level. The first chapter deals with the research design and methodology of the study including review of available literature concerning the theme of enquiry as discussed earlier. The second chapter describes the profile and progress of SVU since its inception. The financial administration of SVU in terms of organisational structure, budgeting, accounting, auditing etc, are discussed in the third chapter. The sources, growth, trends etc, in the income of SVU are analysed in the fourth chapter. The fifth chapter evaluates the objects, pattern, magnitude and progress of expenditure of SVU. The unit cost of education, surplus, debts, deposits, advances and investments of SVU are provided in the penultimate chapter. Summary and conclusions are incorporated in the last chapter. The issues for further research in future are also covered.

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