

Economics of Education

A Trend Report

J. L. AZAD

M. MUKHOPADHYAY

The integral relationship between education and economic development has received conceptual recognition since the times of the Classical Economists. Attempts to quantify this relationship have, however, been of recent origin. In India, researches in this area gathered momentum particularly after the publication of the Report of the Education Commission (1964-66). The basic assumption in relating education to economic growth is the potentiality of education to contribute to the national economy. This would mean a deflection from the 'residual approach' to purposefully utilising education as an instrument of economic growth. In the former case, it is incidental in character, whereas in the latter it is goal-oriented and motivated. Further, in the former context, the approach to understand education in the context of economic growth is *ex-post facto*, in the latter case, it is *pre-facto* and experimental. Implicit in this approach is the recognition that education and economy are mutually dependent sectors of national life.

The interdependence of these two sectors — education and economic growth in national as well as individual's life — has brought to fore the academic issue of economics of education. It is being increasingly recognised that expenditure on education is not merely of a consumption character. It is also instrumental in giving a spurt to the overall growth of national economy as also to individual earnings, besides ensuring a more balanced personal income distribution. In other words, it contributes to human capital formation by increasing the human capabilities and skills. Application of the concept to the economic model would mean that expenditure on education is an investment, no less important than the traditional factors of production.

As a branch of study, the economics of education is comparatively of recent origin both in India and abroad. The earliest study in India in the present group, which could be classified under this category, was conducted in 1959. But this field has fast grown. As Blaug (1966 a & b) records in the international

context, there were only 108 studies upto 1956, whereas during the next two five year periods the production of such literature was 200 and 500 respectively. In India also, the growth has been tremendous. Kothari and Panchamukhi (1975) recorded a total of 280 items, which include published and unpublished seminar papers, articles, research reports, doctoral theses, reports of committees and commissions, etc., pertaining to Indian education, while the beginning was only in the late 50s. Looking into the overall importance and the fast growing character of this field of study, it seems essential to make periodic analysis of the trends of research and develop guidelines for planned research in the field.

The first such attempt was made by Mukherjee and Mukhopadhyay (1974) who classified the thirteen studies at doctoral and institutional levels into three main categories, namely, financing, education and productivity, and costs of education. Kothari and Panchamukhi (1975) discussed "the important works in Economics of Education by the Indian authors and by the foreign authors about Indian Problem" under several heads, namely, the concept of human capital, education and economic development, investment in education, returns to education, manpower planning approach to education, measurements of costs of education, financing of education, the labour market for the educated persons, internal efficiency of education, and economic issues in educational policy. The scope of this review has been more wide and emphasis has been placed on published work. The present chapter is an effort in the similar direction but in a different perspective. In this chapter, the emphasis is solely on doctoral and major institutional researches whether published or unpublished.

The studies at the doctoral as well as institutional levels form a few broad clusters depending upon the subject matter of the study. These clusters are :

- (i) Financing of Education

- (ii) Educational Expenditure and Educational Growth in Indian Provinces
- (iii) Education and Productivity
- (iv) Costs of Education

I. FINANCING OF EDUCATION

Financing of education as an area of study seems to have arisen out of several questions on aspects like patterns and processes of resource allocation, locating and mobilising resources for education, with special reference to the total national economy and intra-educational sectors. These basic questions have thus been rightly reflected in the doctoral as well as major institutional works compiled here. These studies can be analysed mainly in two ways — the studies characteristically encompassing macro systems versus micro systems, and studies having historical versus cross-sectional character.

In the first category, studies have been conducted on financing in less developed countries and individual Indian provinces through India as a whole; another feature has been the analysis of financing of education as a single unit to analysing it stagewise, like, higher education, elementary education, etc. In the second category, certain studies have been more of historical nature, whereas certain other studies have been somewhat problem oriented.

Quite a good number of agencies and individuals have worked on various dimensions of the problem of financing. They are : Azad (1972, 1975), Committees and Commissions on education, Jha (1974), Mathew (1974), Mathur (1968), Misra (1959), Mukerji (1974), Naik (1965a and 1965b), Nair and Pillai (1962), Nanjundappa (1975), Nigam (1974), Panchamukhi (1970, 1974), Pandit (1972), Rizvi (1960) and Shah (1969).

In this group of studies, a few prominent trends are discernible. The first and the foremost is the financing of Indian education as the unit. A major group of contributors to this issue are the Committees and Commissions on education. While ignoring the historical elements of financing as an official policy and procedural issues since 1813, one cannot fail to take note of the documents immediately preceding (Sargent Report, 1944) and succeeding (Kher Committee, 1950) the country's independence. The Sargent Report, among other things, dealt with the issue of financing in terms of costs of junior and senior basic schooling, secondary education, university education, technical, commercial and art education, adult education, teacher training, school medical service,

education of the handicapped, recreative and social activities, employment bureaux, and administration. The Kher Committee's major task had been to find out ways and means of financing educational development in India. Education Commission (1966) has dealt with the problem more elaborately. It has devoted an exclusive chapter to this issue in addition to supplementary notes. The works of the Task Force on Educational Finances of the Education Commission (1966) are also worth noting. Misra (1959) dealt with the problem in a historical perspective ranging over a total period of 1698 to 1959. Shah (1969) studied the financial resources, allocation of funds to various levels and types of education, the financing by private and public sectors and such other issues between 1950-51 and 1960-61. Mathur's (1968) study was in the same direction and for the same years. The contribution of fees as related to overall educational expenditure has been studied by Panchamukhi (1970). Pandit (1972) also studied the financing of Indian education in the first three plan periods for its effectiveness. Nair and Pillai's (1962) study stood out of this trend. They studied the problem of finance in the same texture but only at the state level — Kerala. The main problems of the study were the procedures of educational finance, sources of finance, and financial responsibilities of central, state, local and private agencies.

The second trend in this area is to deal with the problem of finance at different educational levels but in all-India perspective. Naik and Lawler (1965) studied the financing of elementary education. The main objective of their study was to develop the procedures of financing on the principles of equalisation. They came out with a formula for central aid per pupil. The second study, pertaining to primary education, has been done by Pathak (1967). Pathak's study has, however, been more of a theory testing, namely, the testing of the Naik-Lawler formula to be applied in case of financing to Zilla Parishads in U.P. Except for the reports of the Commissions like Secondary Education Commission (1952) and Education Commission (1966), the financing of secondary education has not been studied either at the doctoral or at the institutional levels separately. Problem of financing of higher education was studied by Rizvi (1960) in less developed countries. Azad (1972) studied the financing of higher education in independent India rather critically. His main concern has been analysis of the patterns — both aggregative as well as institutional — in terms of central and state government roles and functions, and certain basic policy issues pertaining to financing of higher educa-

tion. In a second study, Azad (1975) studied the patterns, procedures and policies of government grants to institutions of higher education.

The third group of studies is the financing of universities sponsored by the ICSSR. In all there are six studies in this group. The six universities that have been studied are Bombay (Panchamukhi, 1974) Calcutta (Mukerji, 1974), Karnataka (Nanjundappa, 1975), Kerala (Mathew, 1974), Patna (Jha, 1974) and Rajasthan (Nigam, 1974). These studies have major focus on sources of finance and their relative importance, the steadiness and adequacy of the finance, expenditure by heads, and the difficulties faced by the different universities due to financial inadequacy. It may be noted that in these studies, affiliating universities were selected except for Patna. One major feature of university finances is that while state government has been the biggest source for many universities, the fees, especially for examinations, have been the largest resource for Calcutta University and to a great extent for Kerala University.

Endowments play a considerable role in financing the Universities of Bombay and Calcutta. So far as expenditure is concerned there has been a phenomenal rise; a special feature in this regard is the huge expenditure on administration as compared to that on academic purposes. Another notable feature is that the trend of expenditure which was weighted more towards academic items than that on administration has been reversed (Mukerji, 1974).

A comparatively related problem to educational financing is the grant-in-aid system. Since 1854, when the grant-in-aid system was introduced, this has grown in size and complexity. In independent India, this has been the main procedure of financing at all stages. Naik (1965a) made a comparative study of rules relating to grant-in-aid to colleges of arts and science, and secondary schools. The problem of grant-in-aid in higher education was further studied by Azad (1975) with special reference to patterns, procedures and policies.

The studies on financing have been mostly of historical and descriptive nature. Document analysis has been the common method of data collection except for a few where other methods of social sciences research have been utilized. Questionnaire as an instrument was used by Nair and Pillai (1962), Shah (1969), Panchamukhi (1970), Azad (1972, 1975), and Jha (1974). Naik and Lawlers' (1965) study was rather akin to modelling and Pathak's (1967) was of theory testing. While most of the studies have

been either historical or descriptive, the works of the commissions on education have made efforts to project the future expenditure on education. The methods of analyses and presentation of the data have been mainly in terms of total expenditure at current prices, or in a few cases as percentages. The basic difficulty arising out of presenting the data in current prices is the comparability of effective amount over the years for the purposes of studying the growth of educational expenditure.

Financing of education has been the major area of research in economics of education. But the above review indicates the inadequacy in certain respects. If the purpose of research on financing can be considered to be not only description, but providing the basis for financial planning also, the cited researches are far too inadequate. Moreover, the treatment has usually been at global level. In that case also, the finance has been mainly shown on the basis of plan outlays. The non plan budget, which is much larger than the plan budget both at the central and the state levels needs to be studied. Further, whether at macro or micro levels, the behaviours of revenue sources and expenditure heads need to be studied in depth. The Indian universities today, in very large number, are running with huge deficits. An organisation like that of a university will not stop functioning for this reason at any stage. This would mean, at one stage or the other, this problem is ought to be solved. It would, hence, be essential to draw out this problem from the shelves in order to reduce the stress on quality and functioning of universities. Researches need to be carried out scientifically to study the causes of such deficits. Education has been the most vulnerable sector so far as the budget allocation is concerned, so much so that the five year plan budgeting has been only notional in character, education being subjected to frequent cuts. The effect of such cuts at the central and state levels on educational growth and efficiency needs to be studied. Last, but not the least important, is the near absence of research on programme modelling which is essential for a sound educational planning. Kothari and Panchamukhi (1975) reviewed three such models. But the absence of such an important area for doctoral research is rather conspicuous.

II. EXPENDITURE AND EDUCATIONAL GROWTH

Expenditure and educational growth are not only interrelated but rather interdependent phenomena. Educational growth depends upon the availability of certain minimum facilities or resources. Simultane-

ously, the growth of expenditure depends upon the need arising out of the growth of the educational sector. Considering the interdependence, the expenditure on education can well be considered as an investment. This investment concept brings in the question of efficiency both in terms of quantitative and qualitative growth. A few studies have been conducted on these problems. These are by Karnik (1967), Panchamukhi (1967), Pandit (1972), Sharma (1973) and Sinha (1967).

Panchamukhi (1967) studied the effect of public expenditure on public education and health during the period 1948-49 to 1960-61. This study was carried out on an all India basis. Pandit (1972) studied the effectiveness of educational financing in India during the first three five year plan periods. In this study, the effectiveness was measured in terms of growth in educational expenditure, and private and social rates of return. Karnik (1967), Sharma (1973) and Sinha (1967) studied the educational expenditure vis-a-vis educational growth during the five year plan periods in Gujarat, Madhya Pradesh and Bihar respectively. In Gujarat, the educational development was remarkable during the first three plan periods. The educational developments at all stages were far too short of mark in Bihar in spite of overall increase in the expenditure to a considerable extent. Sharma's (1973) study was also in the same line except for an added dimension of studying the regional inequalities within the state of Madhya Pradesh.

These studies depended mainly on documents as the sources of data. These documents are usually the reports available with the government departments. The findings of these studies would be valid to the extent of the reliability and validity of the data presented in the source material utilized for the purpose. Opinion survey was, however, used to supplement the data in Sinha's (1967) study. The analysis of the data has been usually in the form of percentage calculations or presenting the data in raw numerical forms. The growth of expenditure has been presented in absolute terms rather than in relative terms. Panchamukhi's (1967) study adopted multiple data analysis techniques, which included the use of regression analysis, factor analysis and input-output model. Pandit's (1972) study was based on three hypotheses. But, by its nature, it could not be a hypothesis testing study in strict sense of the term.

Relating educational growth to expenditure in cause and effect relationship seems to be rather over simplification of the issue. Educational development in the countries, which shook off their bonds of

slavery recently, has broader social base. It has to reckon with century old social stratification and political oppression which had resulted into complete denial of educational facilities to large segments of population. The plan outlays as well as nonplan budgets are far too inadequate to explain fully the pace of educational development in the country or, for that matter, in any state. The issue becomes rather complicated under the present conditions, where private enterprise in education has assumed a pre-eminent place in the development of education in certain sectors like secondary schools and colleges of arts, science and commerce. Research on effect of public expenditure on educational growth is an important dimension. It should be preferable to conduct such research at micro-levels of smaller educational units. Further, the research design in this case ought to identify other variables that may also contribute to the educational development. Finding the actual contribution of public expenditure on educational growth may have to involve appropriate research designs using factor analysis and covariance. Simultaneously, the qualitative aspect of research has to focus on the local conditions and forces that are responsible for the educational development.

III. EDUCATION AND PRODUCTIVITY

The relationship between education and productivity can be considered from several dimensions. It may mean the overall growth of production in any sector as a result of an impact of education. In its macro form, it would give rise to the basic issue of contribution of education to the growth of national income, which has been mentioned earlier. In the intermediary form, education may be examined as a contributory factor to some specific sector of national economy like agriculture, industry, trade, etc. In its micro form, education may be examined in terms of individual returns reckoned as life time earnings. In all these cases, education has to be assumed as a sector for investment, where the cost benefit and input-output models should be applicable. Further, education presumably contributes to the human capital formation, which in turn affects productivity.

The researches in this area indicate the absence of such exercise in the national context of overall growth of national economy due to education. Two studies, however, have focussed on agricultural and industrial productivity due to education of farm workers and industrial workers respectively. Chaudhri (1968) studied the relationship of agricultural productivity and pattern of agricultural input to education of the farmers. The study also tried to identify

how far caste structure and cultural factors intervene in educational impact on agricultural productivity. Singh (1965) studied the impact of workers' education scheme on the overall environment of the industries and productivity.

The research on educational returns at macro or micro levels are relatively few. Moreover, the returns need to be considered in individual as well as social context. Kothari and Panchamukhi (1975) reviewed eight studies on this problem. First such effort was by Harberger (1966) who studied the age-education earning structure of Indian high school leavers and university graduates. Nalla Gounden (1965, 1967) asserted that only 50 percent of the income is due to education. Similar studies are by Blaug et al. (1969) and Pandit (1972). Paul (1972) applied the cost-benefit analysis on management education. Mukherji and Rao (1966) and Kothari (1966) studied the returns to education at different levels and for different subject specialisations.

Studies in this area, especially Chaudhri (1968) and Singh (1965), adopted the survey method wherein data have been collected through questionnaires. Chaudhri used chi-square test and correlational techniques for data analysis. At the micro level, the methodology has been more of applying the cost-benefit analysis technique.

The researches in this comparatively important area are scanty. More researches need to be taken up at the institutional and doctoral levels on developing the age-earning profiles for various subject specialisations. The studies on rates of return have been largely limited to urban India. Depending upon the opportunity and social conditions the rates of return are likely to differ in non-urban area for even the similar investments and specialisations. The problem of human capital formation due to education has remained unexplored except for the singular effort of Nalla Gounden (1965). The differential capital formation due to differential educational investments needs to be studied.

IV. COSTS OF EDUCATION

The cost of education is a popular area of research in economics of education. Quite a few researchers have invested their efforts in measuring the cost of education. It also finds a logical place in the scheme of research in economics of education since studies in most other fields, as discussed in earlier sections are dependent on cost measurement. The cost of education is a composite measure comprising the social cost, institutional cost and private cost.

This further involves the estimation of the direct and indirect costs. The social cost would imply mainly the opportunity cost foregone by a student. This has, however, complications involved in it with respect to costs of leisure, foregone earning, employment probability, etc., etc. (Kothari and Panchamukhi, 1975). The institutional cost would mean the cost involved in running the educational plant. Thus it would necessarily include the capital expenditure as well as maintenance expenditure. The maintenance expenditure would further be direct and indirect. In the direct category, costs involved in maintenance of the plant and staff would be included. In the indirect category, costs of inspection, supervision, buildings, etc., would be included. The private cost would imply the cost or expenditure incurred by the student or his parents. This would have mainly two dimensions of accounting — tuition and non-tuition cost. In the exercise of costing, the unit may be individual as well as institutions, and even levelwise. The researchers, who have contributed to this area of research are Kamat (1968), Panchamukhi (1965), Shukla (1960), and Singh and Singh (1972). Besides, the commissions/committees on education have also calculated costs of education per head. The first study by Shukla (1960) estimated the per capita cost of education in basic and non-basic primary schools in 1957-58. The rest of the three studies calculated the costs of higher education. According to Kamat (1968), the cost per pupil for the four year period covering the pre-degree and three year degree courses in commerce, arts and science in the Poona University amounted to Rs. 1200.00, Rs. 1500.00 and Rs. 1800.00 respectively. This was, in fact, the institutional cost. Panchamukhi (1965) studied the maintenance cost of higher education in Bombay University in terms of auxiliary services, student aid expenditure, instruction and research, library, general and academic administration, plant operation and maintenance, etc. The costing was on the postgraduate departments for the years 1962-63 and 1963-64. Singh and Singh (1972) calculated the cost of science and non-science education at the Punjabi University. The costs were calculated for the years 1969-70 to 1971-72. The capital costs as well as current costs were calculated under direct and indirect costs.

The four studies mentioned above have mainly used the records as the sources of data. But they have differed in their methods of analyses. Kamat (1968) has utilised the total institutional cost and the number of students as the sole basis of unit costing. Panchamukhi (1965) studied only the recurrent cost dimensionwise. The studies were conducted in dif-

ferent years for different levels and at three different universities. In spite of these limitations, it is interesting to note the wide divergence of costs of higher education in different universities in India.

It can be observed that the studies on this important area are very scanty. In terms of levels and types, studies on costs of education for primary, secondary and various forms of vocational and professional education have not been attempted. To study the regional differences in costs of education, it would be necessary to calculate the costs at different levels. Further, in unit costing, research on costs on various heads like social cost, institutional cost and private cost are not available. For the system of education prevalent in India, the private cost, however less as compared to public cost especially at the higher educational level, makes an important dimension determining wastage. In a study Shah (1969) found that the non-tuition cost is more significant than tuition cost for students in Baroda city. This signifies the need to undertake detailed study of the private costs of education at different levels and its impact on educational growth. A further dimension of research which needs to be studied is whether cost of education is in anyway related to the quality of education and to find out the optimal cost for quality education.

Studies to compare the cost structure under the systems of formal and non-formal education also need to be undertaken. The construction of educational cost indices over a period of time would be necessary to study the real growth of educational expenditure with a view to neutralising the effect of overall monetary inflation.

TWO OTHER ISSUES

While reviewing the research studies on economics of education compiled in this volume, one can notice the absence of serious efforts to study two very important problems in the field. These are vocational education and vocationalisation of education, and educated unemployment.

Vocationalization of Education

With the rapid industrialization, India needed to produce more and more skilled manpower for different levels. Vocational courses were introduced in engineering colleges, and new vocational institutions were started. Lastly, recommendations have been made to vocationalize secondary education. This has tremendous economic implication. Researches, though few conducted on this problem focussed their attention on issues other than economic. These studies have been reviewed elsewhere in this volume. Re-

search needs on economic aspect of vocational education also have to be considered.

Educated Unemployment

Researches on education and productivity, costs of education, and returns of education have been gaining wider and wider recognition, while a very pertinently related and an interesting problem of study — educated unemployment — has remained unattended to by the doctoral researchers. However, the problem has been studied by Mark Blaug and his associates (1969) and V. K. R. V. Rao (1961). Besides these two studies, references can be made to the works of the Committee on Education and Total Employment (1972), Gaur (1955), Gupta (1955) and Huda (1974). Most of these works have treated the problem of unemployment in a rather global manner. Some of them have also touched upon the economic aspect of unemployment. With the increasing number of educated unemployed in India and elsewhere the problem is becoming widely recognised for consideration. The study on the economic implications of unemployment with various educational levels needs to be done. It will have direct bearing on costing of education, and productivity of education. The problem of underemployment also needs consideration.

CONCLUSION

The economics of education is a budding field of research. Till today, the researches at doctoral and institutional levels are only few in comparison to the total number of documents on Indian economics of education (Kothari and Panchamukhi, 1975). The studies at the doctoral and institutional levels have concentrated only on four aspects mentioned above. No attempts seem to have been made to study the theoretical aspects of economics of education, human capital formation, manpower planning, and education and national development. The inadequacies in the areas where studies have been conducted are already indicated. While exercises of this sort have to be repeated, what seems to be more essential is to adopt the strategies of planned research. For that matter, one would look forward to the departments in the universities which are specially designated for research in the economics of education. The Economics of Education Unit at the Bombay University, similar proposed unit at the M. S. University of Baroda, Gokhale Institute of Politics and Economics, etc., are some such institutions, which may take a lead in this direction. The planned approach to research on economics of education would essentially need planning at institutional as well as inter-institutional levels.

The major purpose of the planned research would be to strike the target directly rather than incidentally. The very basic foundation of this subject is to treat education as an investment for economic growth — from individual to national levels. Related issue pertaining to this is optimal utilisation of funds for education. This would bring in further issues of optimal cost, striking the balance between private and public cost, resource allocation, manpower planning, the optimal utilisation of the infrastructure, etc. This would create the need to develop programme models

for achieving optimal effectiveness of educational expenditure.

An essential pre-requisite of educational planning for economic growth is a sound empirical base. The researches on various aspects need to be taken up on priority basis. Besides the needed research in the above mentioned four fields, researches should also be undertaken on the extent of association among education, occupations and earnings, the manpower planning at micro levels, economics of equality of educational opportunity and economics of wastage and stagnation at different levels.

ABSTRACTS : 174-192

174. AZAD, J. L., *Government Grants for Higher Education : A Study of Patterns Procedures and Policies*, Planning Commission, New Delhi, 1975.

The objectives of the present study were : (i) to analyse the patterns, the procedures and the policies of financing of the institutions of higher education in India; (ii) to assess the adequacy or otherwise of the system of financial administration with a view to identifying its bottle necks; and (iii) to study certain basic issues of financial policy like purposes of central and state grants, fee policy, mechanism of student aid programme, respective responsibilities of the central and the state governments, etc.

The study was conducted in two stages. In the first stage, information about the patterns and procedures of grant-in-aid to institutions of higher education were collected from the state governments, tabulated and sent back for checking up and updating. In the second stage two questionnaires — one on patterns and procedures of state grant-in-aid and second on some policy issues on financing of institutions of higher education in India — were developed. The first questionnaire was mailed to 356 principals of affiliated colleges of arts, science, commerce, education, and engineering and technology representing ten percent of the private colleges in each state with some weightage given to women's colleges. The second questionnaire was mailed to vice-chancellors of eighty-nine universities and to fifty-four economists and educationists. However, the first questionnaire was responded by 144 college principals, while the second questionnaire was responded by twenty-five vice-chancellors and eleven experts only.

The study revealed that : (i) there were large variations in the type and quantum of state grants — the maintenance grants ranged between 33¹/₃ and 100 percent of the approved expenditure; (ii) the system of deficit grant and the concept of approved expenditure were disfavoured by the respondents; (iii) a majority of the respondents felt the need to streamline the UGC, extending its jurisdiction to include all types of higher education, establish regional centres or state UGCs; (iv) the establishment of an informal committee of vice-chancellors to advise the state government in formulation of grant-in-aid rules and annual allocation of grants was favoured; (v) the affiliation should, according to the respondents, be the concern of the university; (vi) the respondents felt that there

was lack of coordination between the universities and the state governments in affiliating institutions and releasing grants; (vii) it was opined that the objectives of central and state grants were to equalise the level of facilities for higher education, regulate the spread of educational facilities, locate and help talent, and persuade private enterprise in education to help achieve nationally determined goals; (viii) it was felt by a majority of respondents that the central government should concentrate on qualitative improvement, and postgraduate education and research, while the responsibilities of the state governments should include undergraduate education, maintenance and development of collegiate institutions, encouragement of spread of education in backward areas and the development of the regional languages; (ix) half of the respondents thought it desirable to raise fees but only one-third supported it at this stage; (x) a large majority supported the idea of fixing standard fees with option to private institutions; (xi) private contribution was not much encouraged by the institutions — instead the proposal of enactment that private enterprise requiring technically trained manpower should contribute a portion of their profits for educational development was supported; and (xii) a combination of grant and loan to students to prosecute studies for higher education was favoured by respondents.

- *175. BHATTACHARJEE, D. K., *An Investigation into the Impact of Price-Rise upon the Educational Expenditure of Purulia District of West Bengal*, Ph.D. Edu., Kal. U., 1976.

The study was undertaken in order to identify (i) the 'state' or 'form' of the present position of the expenditure structure of school education of Purulia district in comparison to Burdwan district of West Bengal; (ii) the nature and intensity of economic force that emerges as a potential threat to its human and non-human components; (iii) the direction towards which the economic force is pushing the expenditure structure; and (iv) the impact of such changes.

The study was of a normative survey type. The recognised schools of the district under study during the period 1959-60 to 1969-70 formed the sample.

Some of the main findings of the study were as follows : (i) At all stages of school education (excluding preprimary) the expenditure incurred on teachers' salary had increased in Purulia district. The difference between the mean growth rates of expendi-

ture was larger in Purulia than in Burdwan. (ii) Trend values of real salary expenditure on teaching staff at all levels of school education were much lower in Purulia district than in Burdwan district. (iii) At higher secondary and high school levels, though the average and real salary per teacher and their annual growth rates were higher in Purulia district, the inflationary loss of real annual salary per teacher was greater in Purulia district. (iv) At middle, junior high, and senior basic school levels the average and real salary per teacher was lower in Purulia district. (v) At primary and junior basic school levels in Purulia district, though the annual growth rate of average annual salary was higher, the annual growth rate of real salary was lower. (vi) The magnitude of fall in real salary was highest at higher secondary and high school levels, moderate at middle, junior high and senior basic school levels and lowest at primary and junior basic school levels in Purulia district. (vii) The annual growth rate of per capita real national income was higher than that of the annual growth rate of per capita salary of the teachers in Purulia district. (viii) Growth rates of per capita national income (real), per capita state income (real) and per capita district income (real) were higher than those of the growth rates of real per capita salaries of teachers. (ix) While average annual earning of the factory workers and coal miners and loaders of West Bengal both at current and constant prices had increased considerably, the average annual earning of the school teachers (at all levels) of Purulia district had decreased substantially. (x) The enhancement in the salary of the teachers over a considerable period of time could not improve their socio-economic status, their teaching efficiency and their attitude towards their profession. (xi) Though the mean growth rates of building expenditure both at current and constant prices were higher in Purulia district the magnitude of erosion of intrinsic value of building expenditure due to price spiral was also higher in Purulia district. (xii) The difference between the mean growth rates of both the series of expenditure was larger in Purulia district. (xiii) At higher secondary and high school levels the annual growth rate of enrolments was much higher than that of the annual growth rate of real building expenditure in Purulia district. (xiv) The impact of price rise on equipment and apparatus revealed that though the mean growth rates of expenditure incurred on equipment and apparatus were higher in Purulia district the magnitude of erosion of the intrinsic value of expenditure was also higher. (xv) At all levels of education the expenditure incurred on miscellaneous items at current

prices had increased in Purulia district. (xvi) At higher secondary school level, the unit cost of operation both at current and constant prices was higher in Purulia district, but the findings were reverse in case of high, middle, junior high and basic school levels.

*176. BOSE, P. K., *Cost of Elementary Education in West Bengal, Dept. of Statistics, Cal. U., 1976. (NCERT financed)*

The objective of the present study was to determine components and differentials of the unit cost of elementary education in West Bengal. It was also intended to see a trend. The assumption behind the study was that the data coming out of such a survey would be useful for building up norms and for working out projections for unit cost of education and, as such, for educational planning in our country.

The total number of schools covered under the survey was 1588, out of which 1375 were primary schools and 213 junior basic schools. A questionnaire was used to collect data covering a wide range of information.

The average teacher-cost has been calculated for the four years from 1969-70 to 1972-73, while the average recurring cost per student on all other items has been presented only for the two years, 1969-70 and 1973-74. One may argue, however, that the average recurring cost per student on non-teacher items is not much and has not shown any remarkable increase over the years. Therefore, it can crudely be summed up to say that the average total recurring expenditure per student in an elementary school in West Bengal was Rs. 57.08 and Rs. 51.75 among schools in Calcutta, and in the remaining schools during 1969-70. The figures rose to Rs. 62.07 and Rs. 59.92, respectively, during 1972-73.

177. JHA, D., *A Study of the Finances of the Patna University, Dept. of Eco., Pat. U., 1974. (ICSSR financed)*

The major objectives of the investigation were : (i) to study the sources of income and their relative importance; (ii) to examine the steadiness and adequacy of the income; and (iii) to ascertain whether the university was under financial stresses and strains which adversely affected its operational efficiency. All these were with reference to Patna University.

The period 1952-53 to 1972-73 was selected for the purpose of inquiry. The sources of data were the annual budgets and audit reports, annual reports, minutes of the meetings of various bodies of the university, and the university handbooks and notifications. Besides, a questionnaire was also prepared and administered.

The study revealed that (i) the major sources of university finances were grants received from the state government and the UGC, and the fees and other charges realized from students; (ii) the grant from the state government increased from six percent in 1947-48 to fiftythree percent in 1952-53 and this further increased in recent years; (iii) income from examination fees was growing fast every year; (iv) when the university ceased to be an affiliating university after 1952 and became a teaching-cum-residential university the expenditure increased enormously; (v) development of new departments and modernisation of courses of study also entailed increase in expenditure; (vi) the rise in prices since 1962 had a very important influence on the university finances; (vii) the efforts to meet the revenue expenditure by diversion of funds from capital grants prevented the authorities to derive further capital grants which further added to the hardship of the university finances; (viii) from 1964-65, the university was running with increasing deficit budgets except in 1965-66 when there was a small surplus; (ix) during 1952 to 1974, due to large increase in enrolment at undergraduate and postgraduate levels, the university remained under constant pressure of increasing seats in all classes; and (x) the finance committee failed to function properly due to the absence of elaborate financial rules, lack of suitable conventions, and due to pressures exerted on them in the context of overall shortage of funds.

178. KOTHARI, V. N. & PANCHAMUKHI, P. R.,
*A Survey of Research in Economics of
Education in India, ICSSR, New Delhi, 1975.*

The survey attempted on reviewing mainly the published research works and discussion papers on economics of education, identifying the sources of data and the priority areas of research in this field.

The present work was based on 280 different Indian titles on economics of education. These studies were classified under suitable heads depending upon the nature of the work. The review of the papers is made under each heading. On the basis of the trends of research in economics of education and needs several priority areas were identified.

The survey revealed that the research in economics of education pertained mainly to ten areas. These areas were : (i) concept of human capital; (ii) education and economic development; (iii) investment in education; (iv) returns to education; (v) manpower planning approach to education; (vi) measurements of costs of education; (vii) financing of education; (viii) the labour market for educated persons; (ix)

internal efficiency of education; and (x) economic issues in educational policy. The survey identified certain areas of research priorities. These were study of (i) private rates of return as related to socio-economic class, (ii) identification and measurement of intangible benefits of education, (iii) education occupation correspondence, (iv) manpower estimates at the firm level, (v) distribution of educational facilities among different socio-economic classes and determinants of the participation in education, (vi) decision processes of nonprofit institutions like schools and colleges and analytical model to depict the behaviour of educational sector as a whole, (vii) socio-economic background of college and university students and high school students, (viii) causes of dropouts after the matriculation, (ix) social audit of attendance and registration at the primary schools, (x) standardisation of educational statistics, (xi) children attending the school, (xii) educated unemployment, (xiii) dimensions of over-qualification, (xiv) earnings structure of educated persons, (xv) life history of graduates, (xvi) impact of education on agricultural productivity, and (xvii) impact of education on economically significant attitudes.

*179. MALAIYA, K. C., *Secondary School Finance in Madhya Pradesh, Ph.D. Edu., Jab. U., 1977.*

The purposes of the study were : (i) to study the financing of secondary schools and their organisation in Madhya Pradesh; (ii) to study the control and administration of secondary school finances in Madhya Pradesh; (iii) to examine the sources and objects of expenditure in secondary schools of Madhya Pradesh; (iv) to identify the existing trends and problems in financing of secondary schools; and (v) to make suggestions for putting secondary school finances on sound basis. The study was limited to the following aspects only : (i) study of total expenditure of higher secondary schools; (ii) comparative study of different sources of income, such as, grant-in-aid, fees, donations and subscriptions, and other sources; (iii) comparative study of the various items of expenditure in different regions and in different types of secondary schools; and (iv) financial powers of the principals and the managing committee or other superior controlling officers of secondary schools.

The population of the study consisted of 348 boys' and 72 girls' higher secondary schools in Madhya Pradesh in 1960. A systematic random sample of 176 boys' and 37 girls' higher secondary schools was chosen for the study. Out of these schools 57 boys' and 13 girls' higher secondary schools responded.

This was the final sample on which the study was conducted. The data were collected through school records, publications of Government of Madhya Pradesh, meetings with school principals, and through a questionnaire sent to school principals. The questionnaire consisted of sixtyfive questions representing six aspects, namely, (i) factual information about the nature of school, (ii) total expenditure during the years 1957 to 1961, (iii) source of income, (iv) itemwise expenditure during the years mentioned, (v) income and expenditure on hostels, playgrounds, and creche, and (vi) financial powers of the school principal and other authorities. The descriptive statistical techniques like mean, standard deviation, percentage, and chi-square were employed to analyse the data.

The following were the major findings of the study : (i) The socio-economic and the geographical conditions demanded more financial inputs in the school education. (ii) The trend in financing secondary schools had been towards shifting local burden on the State Government by allowing more fee concessions and scholarships, by taking over more non-government schools, and by allowing increased grant-in-aid. (iii) The principals prepared school budgets and they did not provide for funds to be spent at their discretion. (iv) The principals of privately managed schools and government schools enjoyed different types and levels of financial powers. (v) The per capita cost in local bodies and privately managed higher secondary schools was much less than that of government higher secondary schools. (vi) The increase of total expenditure was 49.8 percent during the five years for all types of schools but it was still more when only girls' schools were taken into consideration. (vii) There was a trend of increased central aid for schools of Madhya Pradesh and there was a tendency of centralisation of finances. (viii) Expenditure on rents, taxes and insurance was more in non-government higher secondary schools than their counterparts. (ix) The schools of Madhya Pradesh had spent very less money on purchase of books, maps, equipments for games and sports, medical services, mid-day meals, transportation and holiday camps. (x) Fee formed the main source of income; the other sources of income such as endowments, contributions from managing committees, donations, etc., were not properly tapped.

180. *MATHEW, E. T., A Study of Kerala University Finances, Dept. of Eco., Ker. U., 1974. (ICSSR financed)*

The major aims of the study were : (i) to find out the main sources of income in terms of their rela-

tive importance; (ii) to examine whether the income derived was steady and adequate, and (iii) to ascertain whether the university was subject to any financial stresses and strains which adversely affected its operational efficiency.

The period under study was 1947-48 to 1970-71, and within this period finances in 1970-71 were subjected to detailed study. The data were collected from the budget and audit reports, records of meetings of the various bodies of the university and the university handbooks and notifications. Analyses were done in terms of main trends in financing.

The study revealed that (i) the university derived revenues from university departments, grants from the state government, the UGC, the government of India and from other sources; (ii) the conducting of examination happened to be the single largest source and lately became a major concern for heavy outlay; (iii) till 1954-55, the state government was the main financier of the university, afterwards government of India came into picture and the UGC started financing from 1957-58; (iv) there had been a rapid expansion of expenditure in the university, frequent pay revision and fast expansion of number of employees being the suggested reasons; (v) more money was spent on examination than teaching and research; (vi) the expenditure in study and research in science departments was nearly the double of the funds spent in humanities; (vii) the overall expenditure of the university increased by seventeen percent per year; (viii) the expenditure on general administration increased from seven percent in 1947-48 to nineteen percent in 1970-71; (ix) the teaching and research department ranked somewhat low on expenditure pattern of the university; (x) the budget estimates largely remained the same over the period 1970-71 to 1973-74; and (xi) in terms of finances, the university was entering a period of stringency.

181. *MUKERJI, K. M., Study of Calcutta University Finances, Dept. of Com., Cal. U., 1974. (ICSSR financed)*

The present investigation aimed at (i) studying the sources of finance of Calcutta University with relative importance on each source; (ii) examining the relationships between the state and the central authorities and the university regarding university finances; and (iii) ascertaining if the university had been under financial stresses and strains with the consequences thereof.

Methodologically, it was a descriptive and analytical survey. While the detailed study was restricted only to the year 1970-71, the total period of study

was from 1947-48 to 1971-72. The data were collected from the budget and audit records, annual reports, minutes of the finance committee meetings and various notifications. Analysis of the data was done by categorising the receipts and payments under broad categories and subsequently breaking them down into subsidiary categories.

The study revealed that (i) the undergraduate examination fees by themselves, or the total examination fees, constituted the largest single source of receipt for the university; the next in order were grants from the state government, and individual small items like other fees, income from capital funds, etc.; (ii) the administrative expenditure remained stable around thirtythree percent between 1948-49 and 1969-70, but the salaries of teachers after reaching a peak of 33.12 percent in 1951-52 fell gradually to 18.76 percent in 1969-70, and miscellaneous expenditures remained stable around eighteen percent, though there were large fluctuations during the intervening years; (iii) the financial arrangements under which the university operated did not provide for any procedure by which a physical programme was considered and translated into financial terms; (iv) expenditure on academic aspects was often delayed due to redtapism; (v) there was found no departmental working plans with a reasonable synthesis between teaching, nonteaching and material inputs; (vi) the university did not have any formal legal support from the government in respect of financial liabilities although the institutional grant was becoming increasingly more important; and (vii) the trusts and endowments funds went a long way in the past to sustain the finances of the University of Calcutta.

182. *NALLA GOUNDEN, A. M., Education and Economic Development: A Study in Human Capital Formation and its Role in Economic Development in India, 1950-51 — 1960-61, Ph.D. Edu., Kur. U., 1965.*

The study attempted to assess the contribution of education to India's economic growth during the brief period of ten years from 1950-51 to 1960-61. The objectives of the study were: (i) to estimate the growth of human capital being intended to denote formal education embodied in labour force; and (ii) to estimate the rate of return to education.

The research is of library-cum-descriptive type. The sources were mainly newspapers, bulletins, articles, journals and publications on economic development in India related to the years from 1950-51 to 1960-61.

The study revealed the following facts: (i) The cost of primary education was financed more by the public than by students. (ii) Gross investment in education and physical facilities in education as percentage of adjusted national income was 8.9. (iii) Gross (physical) capital formation in 1960-61 at current prices came to Rs. 0.2871 crores. (iv) Gross investment in education formed 44.1 percent of gross physical capital formation. (v) The internal rate of return to collegiate education compared with matriculation was between seven and eight percent. (vi) Both the cost and productivity of education received from better schools and colleges would be higher than those of education from poor ones. (vii) The stock of human capital in 1950-51 was worth of Rs. 4956.45 crores of which Rs. 2028.63 crores were embodied in rural population and Rs. 2927.82 in urban population, while in 1960-67, of the total, Rs. 3103.62 crores of human capital was embodied in rural population and the remaining Rs. 4230.70 crores in urban population. (viii) During the decade the percentage of distribution changed in favour of rural areas. (ix) Growth of human capital over the period from 1950-51 to 1960-61 amounted to Rs. 0.1355 crores. (x) The rate of return to education was 15.9 percent for literate, 15.3 percent for primary and middle, 12.1 percent for matric, 8.9 percent for degree and 9.6 percent for professional degree.

183. *NANJUNDAPPA, D. M., A Study of University Finance, Dept. of Eco., Kar. U., 1975. (ICSSR financed)*

The main objective of the investigation was to study the working of university finances with reference to (a) growth of revenue and behaviour of components of revenue; (b) growth of expenditure and behaviour of components of expenditure; (c) allocation of available funds among the different activities and disciplines; and (d) financial relations between the university and the UGC and that between the government and the university.

The finances of Karnataka University since its inception in 1949 to 1972-73 were studied. The data were collected from the university records.

The major findings were: (i) the total revenue increased from Rs. 1.45 lakhs (1949-50) to Rs. 177.85 lakhs (1972-73) showing an average annual growth of fortytwo percent; (ii) the per capita revenue grew from Rs. 928 (1949-50) to Rs. 6910 (1959-60) and Rs. 2819 (1972-73); (iii) the state government financed upto fiftyfour percent, the income from fees shared thirtyfive percent and the UGC

shared four to five percent; (iv) there was a decline in the per capita grants indicating the comparative decline of university finances when compared to increased enrolment; (v) the total expenditure increased from Rs. 33,036 in 1949-50 to 2.23 crores of rupees in 1972-73; (vi) the change in the per capita expenditure was from Rs. 80.00 (1949-50) to Rs. 5401 (1958-59) and Rs. 3306 (1972-73); (vii) the rises in the per capita expenditure between 1949-50 and 1972-73 were from Rs. 261 to Rs. 275 in case of library, Re. 1 to Rs. 8 in student facilities, Rs. 46 to Rs. 70 in case of fellowships, Rs. 28 to Rs. 92 for hostels, Rs. 4 to Rs. 103 in case of examinations, Rs. 74 to Rs. 1500 for academic departments and Rs. 6 to Rs. 58 for administration; (viii) the cost of education of an individual amounted to Rs. 5372 of which net academic cost (public cost) came to Rs. 3242 and private cost to Rs. 2130; (ix) the physical facilities available during 1961-62 declined in the later years; (x) the establishment of UGC and its introduction of four tier pattern of grants was a boon and a life saver to the university — the larger share of UGC grants in approved schemes helped the university to reduce reliance on the state government; (xi) over the four plan periods the proportion of grants for teaching staff was only thirteen percent; and (xii) the economic-cum-functional classification showed that there was a non-optimal allocation of funds among the different items of expenditure indicating the utmost economy of expenditure to be imposed on general services.

184. NIGAM, M. S., *A Study of the Finances of the University of Rajasthan, Dept. of Eco., Raj. U., 1974. (ICSSR financed)*

The major objectives of the study were : (i) to find out the sources of income of the University of Rajasthan; (ii) to study the relative importance of these sources of income; (iii) to examine the steadiness and adequacy of the income; and (iv) to ascertain whether the university was subjected to financial stress that affected its operational efficiency and independence.

Out of the twentyfive years of its existence a slice of eleven years from 1960-61 to 1970-71 was selected for the study of finances. The data were collected from the following sources, namely, (i) published annual budgets of the university, (ii) annual reports of the university, (iii) minutes of the meetings of the various bodies of the university published from time to time and university handbooks and notifications. The financial position of the university was

analysed in the context of autonomy, adequacy and flexibility.

The study revealed that (i) the different sources of finances were the fees from students, the grants received from the state government and the UGC; (ii) due to the phenomenal development of the university since 1962, there had been huge and recurring deficit in the budget of the university, the government grant was found to be inadequate; (iii) the method of ad hoc grants to cover deficit was found to be unsatisfactory; and (iv) the fixing of nonplan maintenance grant was a welcome measure, but the accompanying conditions curtailed the university autonomy of maneuvering of the fund to reallocate for their optimal use. It was opined that (a) a state level body in the pattern of UGC would help in settling the financial issues better; (b) within the university, selective allocation of funds to different departments would promote better settlement; and (c) the per capita material and educational facilities should be stabilised.

185. PANCHAMUKHI, P. R., *Operating Cost of Higher Education in the Bombay University, Centre of Advanced Study in Public Finance and Industrial Economics, Bom. U., 1965.*

The objective of the study was to estimate the recurring cost of higher education of the Bombay University.

The major sources of the data for the study were the official publications of the university, namely, the budgets of the university, annual reports, etc. The modus operandi of the study was analysing the current account classified under following heads, namely, auxiliary enterprises and services, student aid expenditures, educational and general, administrative and general, instruction and research, the library account, plant operation and maintenance. The study did not include capital costs and opportunity costs of education. The per student cost on each of these heads had been calculated by dividing the total current expenditure (1963-64) by the total number of students and other members (staff) benefited and affected by the respective head. Further, in the study, the postgraduate departments of economics, chemical technology, applied psychology, sociology, civics and politics, management studies, statistics, law, Sanskrit, English and mathematics, and undergraduate arts and science colleges, undergraduate science colleges, undergraduate and postgraduate commerce colleges, engineering, medical, dental and training colleges were included.

The costs were calculated for the years 1962-63 and 1963-64.

The study revealed that (i) the expenditure per student on (a) academic and general administration was Rs. 17.16 (1962-63) and Rs. 18.26 (1963-64), (b) physical culture and student welfare was Rs. 2.61 (1962-63) and Rs. 2.77 (1963-64), (c) university press was Rs. 9.43 (1962-63) and Rs. 10.20 (1963-64), (d) library (per reader) was Rs. 79.10 (1962-63) and Rs. 71.52 (1963-64), (e) plant operation and maintenance was Rs. 2.80 (1962-63) and Rs. 2.69 (1963-64), and (f) instructions for hostel dwellers was Rs. 317.46 (1962-63); (ii) the recurring expenditure in science and technical education was higher than that in arts and social sciences; (iii) in the collegiate education, per student cost of commerce education was found to be nearly doubled in the course of ten years; (iv) for law, arts and science education the increase was marginal, for training colleges it had remained the same and it was slightly higher in case of engineering education; the costs grew two to three times more in case of medical and dental education; (v) the expenditure on personal emoluments to teaching and technical staff as a percentage of total recurring expenditure was found to vary between thirty percent and sixty percent for different subjects of postgraduate education; (vi) the instructional expenditure as percentage of total recurring expenditure was generally low (around thirty percent) for commerce, law, arts and science undergraduate education; for technical, medical and science subjects it was generally at forty percent to fifty percent; and (vii) the per student expenditure was found to vary inversely with the institutional size, namely, the number of students.

186. PANCHAMUKHI, P. R., *Measurement of Effects of Public Expenditures with special reference to Public Education and Health Expenditures in India, Ph.D. Eco., Bom. U., 1967.*

The objective of the present study was to suggest the methods of identifying and measuring the cost and benefit aspects of the social development activities especially carried out by the public sector in health and education.

In order to find out the relationship between health and education, and productivity and income, regression analysis was used. Factor analysis was used for measuring and constructing indices of educational and health levels in Indian economy. Input-output technique was used for estimating the inter-industry effects of public expenditures. A flow chart

was drawn in order to outline the sequence of generation — programme and process outputs of educational and health expenditures. The opportunity costs of health and education were also calculated.

It was found that efficiency of expenditures on education was on the decline during 1948-49 to 1960-61. A close relationship was found between human capital generating factors like education and health on the one hand and output on the other.

187. PANCHAMUKHI, P. R., *Economics of University Finances, Dept. of Eco., Bom. U., 1974. (ICSSR financed)*

The project was an attempt to lay down the principles of economics of university finances with the Bombay University as a case in point. The specific objectives of the study were: (i) to define the objective function of the university in an operational sense; (ii) to analyse how the university attempted to attain its objective through raising and using resources; (iii) to inquire into the economic behaviour of the sources which contributed to the university; and (iv) to examine the resource-using activity as well as resource-getting activity of the university.

The study was a survey of university finances. The sources of data were the official records and published documents of different universities in general and Bombay University in particular. In analysing economics of university finances three principles were expounded, namely, the principles of raising resources, resource use, and financial soundness. On the whole, these three principles dealt with economic considerations that were kept in view in order to strengthen the financial basis of the university and make it function better. In respect of financial soundness of the university, autonomy, adequacy and built-in flexibility were the three criteria that had to be satisfied by the university before its financial position could be considered to be sound.

The following were some of the significant conclusions of the study: (i) Regarding the sources of finance the Bombay University needed to rationalize its attitude towards fee policy, endowments, extension services and publication. Raising tuition and examination fees, better efforts for more donations, more planned efforts at extension programme and rationalisation in pricing of university publications might prove to be more productive sources of revenue for the university. (ii) The university could start more auxiliary enterprises of its own to increase its general fund. (iii) There was much ad-hocism in the entire grant-in-aid policy to the university. While

the state grants had, by and large, covered some of the revenue needs, the UGC grants met partially the capital needs of the university. (iv) Income elasticity of expenditures was fairly high and it was rising over time. Maximum percentage share in expenditures was claimed by administration. (v) The financial position of the Bombay University could not be considered to be very satisfactory on the basis of the principles of financial soundness and in comparison with other universities. (vi) Increase in the basic infrastructure might prove to be a crucial factor in raising the functional efficiency of the university.

188. PANDIT, H. N., *Effectiveness and Financing of Investment in Indian Education, 1950-51 to 1965-66*, Ph.D. Eco., Del. U., 1972.

The aim of the present investigation was to study the financing and effectiveness of Indian education during the first three five year plans (1951-1966). It also envisaged to test the investment hypotheses with reference to the first three plans. The hypotheses formulated were : (i) variation in the growth of total resources in the economy and pressures from other sectors on public expenditure would not hold back the growth in educational expenditure; (ii) the private and public sources would be going hand in hand in the financing of education; (iii) investment within education would be optimally allocated between different stages and types of education; and (iv) there would be no divergence between private and social rates of return from education.

To test the above stated hypotheses different types of data were collected. These were : (i) national income and related data from time series data on national income, national consumption expenditure, etc.; (ii) educational and budgetary expenditure from the central and state sources; (iii) education-age-earnings data from annual earnings classified by age and educational level; and (iv) data from official surveys. After clarifying the theoretical framework of cost benefit analysis as applied to the study of investment effectiveness and financing of education, hypotheses (i) and (ii) were tested on the basis of budgetary expenditure on education and real expenditure data. These two hypotheses were also tested on the basis of cost estimates prepared for the period of 1950-51 to 1965-66. Cost and earning profiles by thirteen levels of education were estimated for 1964-65. These cost and earning profiles by levels and types of education were utilised to test the hypotheses (iii) and (iv).

The study revealed that (i) the educational expenditure in relation to the total resources of the

economy did not hold back in spite of slow growth of gross domestic product; (ii) despite decentralisation of administrative set up of education there was a definite trend towards centralisation and state control in the financing of education; (iii) overtime burden of financing education was being shifted to the state and private participation was on the decline; (iv) education was found to be taking an increasing share of the total resources of the economy; (v) adjustment due to stagnation raised the private unit cost for different levels of education from sixteen to twentyseven percent; (vi) adjustments due to wastage led to an increase in social unit cost of different levels of education from 19.6 to 38.4 percent; (vii) the secondary and higher stages of education appeared decidedly unprofitable; (viii) there were poor returns for vocational skills developed through formal education; (ix) the rate of return for an illiterate to become literate was 18.8 percent; (x) social and private rates of return diminished with an increase in the level of education; (xi) the returns of middle education were the highest followed by primary education and those for the higher education were the least; (xii) within the higher education, professional and technical education had an edge over the general education in science and arts; and (xiii) higher education had reached a stage when both students and society did not find it a profitable area to invest.

189. PATHAK, R. S., *Equalisation of Educational Finance in Uttar Pradesh*, SIE, Allahabad, 1967. (Directorate of Education, U.P. financed)

The major objectives of the investigation were : (i) to study the formula (suggested by J. P. Naik and E. S. Lawler for equalisation of educational finance in India), viz.,

$$\text{Central Aid per pupil} = \frac{X(1 - K \cdot \text{PO})}{\text{PM}} \quad (\text{where,})$$

X = amount guaranteed per pupil in the minimum programme, K = proportion for the programme to be derived from the state which has been assumed to be 2/3, PO = contribution per pupil of any given state, and PM = contribution per pupil of the average state), and (ii) to examine its applicability and suggest alternatives if possible, in keeping with the principle of equalisation of finance between the Zilla Parishads of Uttar Pradesh.

As an evaluative study, it took off on a few basic assumptions, namely, the multiple source financing of elementary education to be continued, better deal for primary teachers in future, increase in the

nonteacher cost and overall cost of elementary education per child (to the extent of doubling it at constant price). The study analysed the basic features of Naik-Lawler formula. The data on total income, enrolment, number of teachers — both trained and untrained, were collected from fortyfive Zilla Parishads by furnishing two proformas, and records of U.P. Secretariat at Lucknow and from the Director, Economic Intelligence and Statistics, Lucknow (for the years 1961-62 and partly of 1960-61).

It was found that Naik-Lawler formula would not be applicable to U.P. because (a) in U.P., a wide range of contributions were made by Zilla Parishads (three percent to twentyeight percent), (b) U.P. had the largest number of habitations with a population of less than 300, (c) in U.P., scheduled caste population was the highest in the country (nearly twenty percent), (d) about eightyseven percent of the population was rural, and (e) affected by the above factors, the cost per pupil would be above Rs. 40 instead of Rs. 33 as suggested in Naik-Lawler formula. Considering these practical difficulties a formula was suggested for the regulation of educational grant from the state to the Zilla Parishads in U.P. This was, State

$$8 C N - TIZP$$

$$\text{Grant} = \frac{\quad}{8} \quad (\text{where, } C = \text{cost per}$$

pupil in the minimum guaranteed programme, $N =$ total enrolment in classes I to VIII, and $TIZP =$ total income of Zilla Parishads including all sources but excluding government grants). This formula ensured maximum state grant when TIZP was zero and it decreased with the increase in TIZP. This also ensured higher grant to the Zilla Parishad having higher enrolment but with equal total income. Thus it ensured equalisation of finance between the Zilla Parishads in the state of U.P. By giving effect to this formula an additional amount of one hundred million rupees would be required which meant an increase of Rs. 1.50 per capita during the Fourth Plan.

*190. PRAKASH, G. M., *Secondary Education in Uttar Pradesh with Special Reference to Educational Finance*, Ph.D. Edu. All. U., 1975.

The objective of the study was to examine the major developments in the field of secondary education in Uttar Pradesh with special reference to financial aspect.

The study was carried out by survey method and covered the secondary schools of Uttar Pradesh. The aspects dealt with covered the modern period upto

1972. Questionnaire was used as the main tool for data collection. The study included the major areas as : (i) foundation, growth and development in secondary education against the socio-economic background, (ii) trends and features of educational financing, (iii) problems of quantity and quality with their financial implications, (iv) assessment of the need for addition of funds for future development (upto 1989), (v) increasing resources and improving the financial administration of education, and (vi) backwardness of girls' education, vocationalisation, grant-in-aid, etc.

Some of the important findings were as follows : (i) The relative standing of secondary education in Uttar Pradesh went down during 1966 and 1974. This was mainly because of the backwardness of the girls' education. The ratio of girls' and boys' enrolment in rural area was 1 : 56 in 1966-67 as compared to 1 : 8 or more in other states. (ii) The expenditure per pupil at the lower and higher secondary stages was comparatively lower than that in all but three states. The same was the case of governmental expenditure. (iii) The expenditure in successive five-year plans showed a decline from the Second to the Fourth Plan period. Also the private efforts had been found to be diminishing. School fee, at the secondary school, shared about half the total expenditure. (iv) The system of maintainable grant-in-aid for higher secondary schools had undergone a drastic change since 1971. Excepting half a dozen, these schools had opted out of the grant-in-aid list. (v) On the basis of the present trend of expansion in enrolments at lower and higher secondary stages, the cost of secondary education in 1988-89 was estimated to be Rs. 284 crores while the funds available for the purpose were expected to be Rs. 200 crores only.

191. SHARMA, R. R., *Economics of Education with special reference to Educational Development of Madhya Pradesh*, Ph.D. Eco., Indore U., 1973.

The major objectives of the study were : (i) to study the development of education in Madhya Pradesh during the different five year plan periods in order to estimate the proportion of achievement in respect of the expenditure; and (ii) to study the regional inequalities of education in the state.

The data for the study were collected from the reports of the various education commissions, reports of the five year plans, offices of the Directorate of Public Instruction — Madhya Pradesh, Labour and

Employment Division — Madhya Pradesh, Planning Commission — New Delhi, Census and Survey Division and Publication Division of the Government of India.

It was found that (i) country spent 149 crores, 273 crores and 596 crores of rupees in three consecutive plan periods on education; out of this total of 1018 crores of rupees spent on education, 35.3 percent was spent on primary education, on secondary and higher education were spent 17.1 percent and 14.6 percent respectively and the rest (thirtythree percent) was spent on other educational schemes; (ii) during the three annual plans (1966-67, 1967-68 and 1968-69) a total sum of 6,756.50 crores of rupees was spent against an estimate of Rs. 6,665.02 crores; a total of 4.70 percent of the total budget was spent on education during the three yearly plans; during this period the expenditure on higher education was raised to 27.5 percent and 72.5 percent was spent on the rest; (iii) the state of Madhya Pradesh spent 11.89 crores of rupees on general education during the First Five Year Plan; out of 11.89 crores, 65.11 percent was spent on direct items and the rest on indirect items; expenditure per student for the university education was Rs. 341.20 and that for others was Rs. 31.60; in the Second Plan the total expenditure for the state was raised to Rs. 14.78 crores; the expenditure per student at university education ranged between Rs. 388.30 and Rs. 662.70 and at other levels between Rs. 39.50 and Rs. 42.20; in the Third Plan period 27.4 crores of rupees were spent on education. The per capita expenditure on university education varied between Rs. 700.90 and Rs. 763.40 and nonuniversity education between Rs. 57.30 and Rs. 64.10; (iv) during the periods 1966-67, 1967-68, 1968-69, the number of institutions increased from 43,822 to 45,215, the student enrolment shot up from 39.81 lakhs to 42.35 lakhs — the increase in the high schools and secondary schools was 12.8 percent, in upper basic schools 12.7 percent and in primary schools 3.2 percent, the number of teachers in high and higher secondary schools increased from 22,810 to 23,842, in middle and basic schools from 35,153 to 36,309 and in lower basic and primary schools from 77,334 to 78,984; (v) during the period 1961-1971, the percentage of literacy increased from 17.17 to 22.12, the female literacy increased from 6.73 percent to 10.84 percent, male literacy from 27.03 percent to 32.76 percent; the highest and lowest levels of male literacy were in Indore (55.75 percent) and Jhabua (11.27 percent) respectively, those for female were in Indore (31.42 percent) and in Sidhi (2.60 percent) respectively; (vi) the net

wastage upto class V was found to be 69.30 percent and that upto standard XI was 91.08 percent taking 1959-60 as the base year; and (vii) the results of the examination at the end of the middle school were 72.9 percent (1956-57), 79.2 percent (1961-62) and 79.5 percent (1968-69); the same for secondary school leaving stage were 50.5 percent (1956-57), 55.4 percent (1961-62) and 78.7 percent (1968-69); similar trends of results were also found in graduate and postgraduate level examinations.

*192. SINGH, B. P., *Educational Progress and Economy Research Unit, Dept. of Eco., Punjabi University, 1974.*

The main thesis that has been assayed in this study is that the content of education is much more important than the linear growth of the system and that all schooling is not investment; proper education in a proper socio-economic setting combined with a judicious amount of physical capital formation, can certainly help speed up economic growth.

Educational progress and economic development of Punjab, before and after reorganisation of the state in 1966, has been surveyed and analysed in the study. Data have been collected from the different official sources of the state, viz., Statistical Bureau, Economic and Statistical Organisation (Evaluation, and State Income Section), National Sample Survey, Punjab Education Department, and District Education Officer, Ludhiana. Analysis of the data has been done in the light of the views of the authorities in the field of economics of education.

The general conclusions about the progress of education in Punjab were as follows: (i) With thirty-three percent literacy Punjab ranked fifth among the states of India in 1971. Female literacy grew by forty-eight percent during 1961-71, the second highest rate in the country. (ii) At the primary stage the proportion of school going children actually attending schools showed a decline in spite of increased total enrolment, facilities provided by the government in primary education were not being optimally utilised. (iii) At the middle stage, the Government of India target of enrolment was reached by Punjab two years ahead of time. At the high school level too, the annual rate of increase of enrolment showed an increasing trend. (iv) The college level education in arts and sciences was dominated by private enterprise. In any case there was an open door policy in the field of higher education as in the case of school education. (v) Enrolment at the graduate and postgraduate levels had

been rising faster than at lower levels. Punjab had the highest proportion of graduate and postgraduate students. (vi) The number of institutes of technical education had been static for several years, but the turnout of medical and agricultural graduates showed an increasing trend. (vii) School level and diploma level professional and technical education showed a decline both in terms of intake capacity and turnout. (viii) The per capita expenditure on education had been increasing at the rate of 8.7 percent per year. (ix) Of the total direct and indirect expenditure on education, higher education had taken the largest share, of which seventy percent was taken up by universities and colleges of general education, technical and professional colleges absorbing less than thirty percent. (x) Opportunity costs formed fiftythree percent of the total costs of education of the state. (xi) Government responsibility in respect of expenditure on education had been far greater than that of the private bodies. (xii) In general, average annual cost per student at different levels showed an increasing trend. The following conclusions were drawn in respect of economic development of Punjab : (i) The net domestic product and per capita income showed marked increase specially after reorganisation. (ii) In terms of investment and capital formation Punjab was not doing as good as many other states. A significant part of the state's increased incomes was going to consumption expenditure. (iii) Within the agricultural sector improved techniques and mechanised farming were gaining ground. The percentage of agricultural workers to total workers had increased over the years. (iv) The potential and actual surpluses of

the agricultural sector were not at all being effectively utilised for promoting the development of the non-agricultural sectors. The following were some of the general inferences with regard to the progress of education and economic growth in the state : (i) Education in the state had grown in absolute numbers; more students were there at each level of education. But the growth of numbers being larger at higher levels, the overall system that had emerged was highly imbalanced. (ii) Agricultural education and research had been boosted with the result of a marked growth in yield per acre of major food crops, but per individual productivity in agriculture had not advanced significantly. (iii) Technical education and skill formation were generally regarded as basic requirements of industrial growth, but the state plans seemed to have always neglected the industrial sector. (iv) There had been a significant growth in general education in terms of institutions, enrolment and teachers, as also in financial terms, but educated unemployment had increased over the years and one could not assert that attitudes to life and work had radically changed. (v) The growth in education had somehow served to shake the conservative rural sector, but the qualities like dignity of labour, the spirit of adventure and enterprise still remained to be inculcated through the education system of the state. (vi) In general, the educational system in Punjab was yet largely unproductive; it carried a considerable amount of miseducation and misdirection of resources, and it created an excess capacity which could be utilised at a marginal cost for further development of the system.