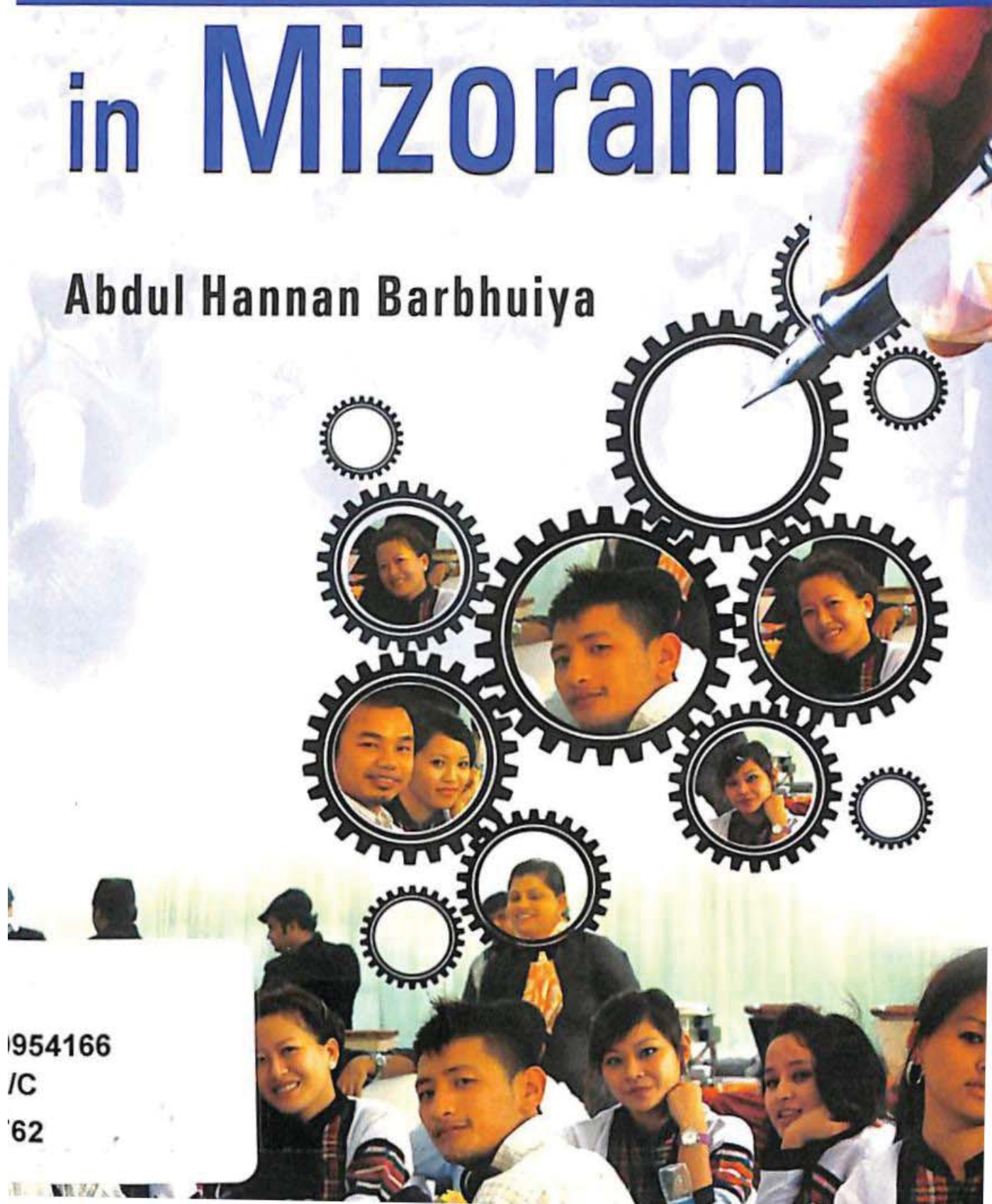


Cost and Finance of Higher Education

in Mizoram

Abdul Hannan Barbhuiya



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For a positive change in the society and sustained economic growth education plays a pivotal role. Expenditure on education is now viewed as investment expenditure as it brings in economic returns to the individuals as well as to the society. Financing of education has, thus, emerged as an important area of concern for researchers and economists.

The present book examines the growth of higher education in Mizoram and the trend of public expenditure on it. More emphatically, it deals with the estimation of per unit public cost and private cost of higher education in the state along with an analysis of the various sources of finance for education. Determination of optimum enrolment size in various types of higher educational institutions has also been tried.

About the Author

Abdul Hannan Barbhuiya is presently working as an Assistant Professor and Head in the Department of Economics, Kamalanagar College, Chawngte, Mizoram. He completed his MA (Economics) from the North Eastern Hill University, Shillong, in 1999 and LLB from Mizoram University, Aizawl, in 2005. After completing his M.Phil (Economics) from Madurai Kamaraj University, Madurai, T.N. in 2008, he obtained his Doctoral Degree in Economics from the Mizoram University, Aizawl in 2011.

Dr. Barbhuiya is actively engaged in teaching and research works. He has participated and contributed a number of research papers in various international, national, regional and state level seminars, workshops and conferences. He is a life member of the North Eastern Economic Association (NEEA) and Mizoram Economic Association (MEA).

Cost and Finance of Higher Education in Mizoram



Abdul Hannan Barbhuiya

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Foreword

It is my pleasure to write the foreword of a book viz., "Cost and Finance of Higher Education in Mizoram" by Dr. Abdul Hannan Barbhuiya. The subject 'cost of education' is not only important but also contemporary. It is especially relevant for Mizoram which happens to be the third highest literate state in India. In the absence of adequate physical resources, the only option is to depend on human resources for economic development through a planned development of education.

Important areas of research in this field may broadly be identified as contribution of education to economic growth and financial aspects of educational systems. The present book is an authentic work by the author on the cost and finance of higher education in the state of Mizoram. It is based on extensive field study and empirical research, which will provide first-hand information to the readers. The first two chapters of the book deal with the introduction of the study and the geographical and administrative set-up of the study area. Chapter three gives a thorough review of the existing literatures on the subject. Educational profile of the state and an account of the public expenditure on education are examined in the fourth chapter. Fifth chapter constitutes the core of the study, which devotes to the estimation and analysis of the per unit public and private cost of higher education. It discusses the related issues and components of recurring and non-recurring costs, subsidization of higher education, determination of optimum enrolment size in various institutions etc., at length. Chapter six enumerates the sources of fund for higher

education and shows their relative importance. Finally, in the seventh chapter major findings are summarized which, if taken care of by the appropriate authority, will go a long way in solving the resource crisis of higher educational sector of the state.

I congratulate the author for his hard work. I hope the present work opens up new challenges and inspire further research while it answers old ones, enriching the available scanty literature on this emerging issue.

Aizawl

The 2nd June, 2012

Prof. Tlanglawma (Retd.)
Mizoram University, Aizawl

Preface

Education is an important factor in forming and sustaining human resources. This aspect of education has been given due importance since the second half of the last century. Like other factors, education is not costless. With the increase in population, mass consciousness, and all other kinds of advancement of society the demand for education has been ever increasing. This quantitative expansion of the education sector, along with the consideration of quality and equality, is bound to raise the demand for more funds and cause a greater entry of students at the tertiary level as higher education is viewed as the only means to augment the human resources.

With the increase in enrolment unless more resources are obtained, quality of education is sure to deteriorate. So, additional resource mobilization from public and private sources is inevitable. However, educational finance is of a distinct nature. Although public expenditure on education is seen to have been increasing, there are obvious restrictions on it. In this era of liberalization social sectors, including education, are being adversely affected. Moreover, emphasis is given more on the lower levels of education by the government and no exclusive mention is made of higher education as an independent sub-category. Further, under the new policy it is argued that higher education should be internalized and government should take care only of the elementary level, which in India is also a constitutional obligation. Thus, public expenditure on higher education is to be reduced. This indicates to the need of heavy reliance on private sources for higher educational finance, which is practically

a difficult task in poor countries like India. As to the issue of equality it is questioned as to why higher education should be subsidized for all students across the board.

The situation in the small hilly State of Mizoram is more serious. Mizoram has very little resources of its own and a relatively large government sector. Education sector, especially higher education, faces an acute setback. In the literature of economics of education, cost and finance are often synonymously used. Since provision of more finance is difficult in the present case, cost reduction seems to be the viable way. Hence, in the present study a humble attempt has been made to analyze the public and private cost of higher education in Mizoram. It also examines the sources of fund for higher education in the state with their relative importance. The subject matter of the present book is of immense importance to the whole society comprising the students, teachers, researchers and policy makers of today with definite implications for the future generations too.

In spite of my best efforts, some errors and omissions may be noticed by the readers. I accept the responsibility of any such flaws and welcome constructive comments and suggestions for further improvement of the book.

Aizawl
1st June, 2012

Abdul Hannan Barbhuiya

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All praise to Almighty, the most merciful, the most beneficent who showered me the blessings of mental faculty and sound health to complete this work.

I, then, express my sincere thanks to Prof. Tlanglawma, who has written the foreword of the book. He has taken the pain in going through all the manuscripts and enriched the same with valuable suggestions.

The preparation of this book would not have been possible without the cooperation of the respondents who supplied the primary data for it. So, I am very much grateful to all of them. My thanks are due to the Principals/Heads, students and the staff of different higher educational institutions of the state, who generously supplied me the required information for this study. I also gratefully acknowledge the help received from the friends and colleagues in course of collecting data for the study.

I am also grateful to the officials of the State and the Central Governments who generously appreciated and provided me an easy access to their official records, books and other materials from which indispensable secondary information for the book was generated. I express my appreciation to the authorities of Directorate of Higher and Technical Education, Directorate of School Education, Directorate of Economics and Statistics, Directorate of Information and Public Relations, Directorate of Census Operations, Department of Finance, Planning and Programme Implementation Department, Mizoram Assembly Secretariat, Mizoram University, Aizawl, State

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My special thanks are due to Dr. James L.T. Thanga, Senior Statistical Assistant, Department of Economics, Mizoram University, for his crucial help with statistical analyses as and when asked for.

I am obliged to my Principal, Dr. B. Vanlalruala and other faculty members, especially the ones from the Department of Economics, Kamalanagar College for their cooperation and encouragement throughout my period of study.

The untiring efforts and sacrifice of my parents from the very day one of my life till date made me see this moment of achievement. Words may fail to appreciate their endeavour, so I thank them from the innermost corner of my heart. I am extremely grateful to my mother-in-law for her untainted inspiration and ceaseless prayers. So also, I appreciate the well wishes of my elder brother and brother-in-law.

Throughout the preparation of this book my wife Abida and my kids Alvi and Ismat had to bear a lot. I deeply express my heartfelt gratefulness to them, especially to my wife for her level best efforts to spare me for the study.

I received inexpressible assistance from the faculty members and staff of the Department of Economics, Mizoram University. Sincere thanks are due to them.

Finally, I convey my appreciation to the far and near authors, scholars and researchers whose works have been consulted and drawn upon during the course of this research work.

Aizawl
1st June, 2012

Abdul Hannan Barbhuiya

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Introduction

Introduction

It is now generally believed that improvements in the quality of labour, acquired through education, training etc., can lead to higher rates of economic growth. In this sense, education happens to be the foremost factor of human capital formation and hence an important engine of economic growth. Along with its concept of human capital, economics of education has revolutionarised economic thinking and emerged as an independent discipline since the 1960s.

Economics of education has drawn for its own development heavily from Economics, and in turn influenced heavily the development of Economics and also the fast promising area of Development Studies (Tilak, 2008). Economics of education also broadened the scope of economic planning. The contributions in Economics of education during the last four and a half decades opened up new vistas in, and have influenced considerably and even expanded the boundaries of the theories of growth, labour market economics, public finance and development economics. Economics of education also entered the theories of social choice and even Welfare Economics. Further, it became an important area in public policy studies.

The subject matter of economics of education may broadly be categorized into: (i) education-development relationships, (ii) educational production function, and (iii) financing of education. In the present study, we concentrate on this third aspect, viz., the

financing of education, which covers the principles of allocation of resources, mobilization of resources, public and private finance, household investment in education, cost of education etc.

The different aspects of education which require a detailed probe relate to how much a government needs to spend on education and how this expenditure is to be financed; is education mainly 'investment' or mainly 'consumption'; if investment, how much is the yield compared to other forms of investment; if consumption, what are the determinants of the demand for education. However, it is important to assess which form of education would serve the needs of the economy.

There has been found a positive correlation between education and level of development in different countries during different periods. These calculations confirmed, though in a general way, that education is a form of investment.

However, a good number of economists are not at comfort about the concept of human capital. Schultz feels that this is on account of "our values and beliefs which inhibit us from looking upon human beings as capital goods, except in slavery, and this we abhor" (Schultz, 1961). To consider man as wealth or as a marketable asset would reduce man to a mere material component, to something akin to property. For man to look upon himself as capital may seem to debase him. H.G. Shaffer (1961) criticizes the concept of human capital on the following grounds:

- (a) Investment on man is essentially different from investment in non-human capital. A part of the expenditure for improvement of man is undertaken for reasons other than expectation of a monetary return, its effects on future output are uncertain and it satisfies wants directly. Further, it is inseparable from expenditure that may be termed as investment.
- (b) It is virtually impossible to allocate specific return to a specific investment in man. Aggregate expenditure on improvements in man's skill and abilities, it is accepted does have a positive influence of "indeterminate magnitude" on man's efficiency and hence on output.
- (c) Even if it were possible to separate consumption expenditure

from investment expenditure in man, and income from such investment could be computed, as a basis for public policy it would be of questionable value.

In the area of financing of education, the trends in India correspond with the global trends – high rates of growth in public expenditure on education in the 1960s, negative rates of growth in the 1970s, steady but slow positive growth in the 1980s, and declining growth in the 1990s that accompanied the ‘Structural Adjustment Policies’ (SAPs). A look into the impact of structural adjustment on educational financing would reveal that adjustment is associated with a decline in: (i) public financing of education, (ii) gross primary enrolment rates, (iii) teacher-student ratio, and (iv) the growth of teachers. Our concern, however, in this study is in the constraints to financing.

In the case of Mizoram, the state government adopted a policy of subsidizing higher education and provided liberal grants-in-aid, since statehood. However, around 1990, the system of state financing of higher education came under severe constraints and now education is being considered as a ‘merit good’ and privatization of higher education is being advocated. It has added yet another dimension to the problem under consideration.

The present study concentrates on the various aspects of cost and financing of higher education in Mizoram encompassing general, professional and technical education. The cases of primary and secondary education were taken up as and when necessary, which, however, are outside the purview of this study.

Education and Economic Development

The interrelationship between education and economic development can be traced back to the pen of Plato, much earlier than the formal birth of Economics as an independent branch of knowledge. Then, starting from Adam Smith, the father of Economics, a long tradition of classical and neo-classical economists emphasized the role of education in economic development. However, due attention was given to the area only since the second half of the twentieth century. The year 1960 marks the beginning of a new era when, in fact, a

formal area of study, viz., Economics of Education was born with the Presidential Address by Theodore W. Schultz to the American Economic Association in December 1960 on "Investment in Human Capital".

Role of Education in Economic Development

From theoretical viewpoint, there are at least three mechanisms through which education may affect economic growth. First, education increases the human capital inherent in the labour force, which increases labour productivity and thus transitional growth towards a higher equilibrium level of output. Second, education may increase the innovative capacity of the economy, and the new knowledge on technologies, products and processes, which promotes growth. Third, education may facilitate the diffusion and transmission of knowledge needed to understand and process new information and to successfully implement new technologies devised by others, which again promotes economic growth.

For a positive change in the society and sustained economic growth education plays a pivotal role. Primary education helps in removing stranglehold of traditions which characterize the society in under developed countries that are inimical to growth and development. Secondary education provides the base for higher and technical education. Higher education prepares the manpower for higher cadre posts both in the public and in the private sector. Thus, education breaks the vicious circle of ignorance, dogmatism and stagnation, and brings in productivity by way of enhancing scientific temper in students and inculcating in them the urge to innovate, to develop, to progress, all of which ensure a better standard of living.

Benefits of education may be direct and indirect, social or private, tangible or intangible. Generally speaking, direct benefits are private, i.e. they are enjoyed by the individuals in the form of higher earnings, occupational flexibility, better status, cultural refinement etc. Indirect benefits are enjoyed both by the individuals as well as by the society. An enlightened population willing to accept new ideas, new challenges, greater tolerance which goes to ease communal tensions, improvement in social and cultural levels, promotion of democratic values, positive thinking and behaviour of people, productive use

and enjoyment of leisure are some of the spill-over benefits to society which are at the same time enjoyed by the individuals as well. These intangible benefits, though not amenable to measurement, have a powerful effect on society and on the economy. It creates the right type of environment, which promotes development in the economy. In fact, it is these changes which bring out the difference between economic growth and economic development, since 'development' encompasses both 'growth' and 'change'.

Contribution of Education to Economic Development

There has been a revival of interest in the concept of investment in human capital which developed in the United States and the United Kingdom in the late 1950s and early 1960s that resulted into tremendous growth of research and publication concerning the question of the relationship between education and the economy.

An American economist, Edward F. Denison (1962) conducted a study in this regard and concluded his analysis that, increases in the level of education of the labour force accounted for as much as 23 per cent of the annual rate of growth of GNP in the United States between 1930 and 1960. Russian economist Strumillin (1925) estimated that, education at primary and elementary level resulted in as much as 79 per cent increase in the output and wage of a labourer in the erstwhile Soviet Union. Schultz (1961) analyzed the contribution of education to growth in national income in the United States from 1900 to 1956 and came to the conclusion that, investment in education contributed 3.5 times more to the increase in gross national income than investment in physical capital. A World Bank Study of 192 countries concluded that, "only 16 per cent of the growth is explained by physical capital (machinery, buildings and physical infrastructure), while 20 per cent comes from natural capital. But not less than 64 per cent can be attributed to human and social capital (HDR, 1966).

Thus, Mark Blaug (1972) rightly observed that, "The universality of this positive association between education and earnings is one of the most striking findings of modern social science. It is indeed one of the few safe generalizations that one can make about labour markets in all countries whether capitalist or communist."

Approaches to Education and Economic Development

Different attempts by different economists were made to estimate the contribution of education to economic development, which may broadly be classified into the following approaches:

Simple Correlation Approach

In this approach an attempt is made to correlate some index of educational activity with some index of the level of economic activity. The levels of literacy and per capita incomes of different countries may be compared with each other to find out that level of literacy which will help in achieving a high rate of growth. Similarly, any other index like percentage of GNP spent on education may be correlated to per capita GNP or level of education to per capita income. Names attached to this approach are: of Anderson and Bowman (1963), Harbison and Myers (1964), McClelland (1966), Lockheed (1987), Hicks (1987), Mukherjee and Rao (1967), Chaudhuri (1969) and Ansari (1987,1993).

Residual Approach

Increase in total national income of an economy over a given period of time is examined under this approach allowing for the contribution of measurable inputs, such as capital and labour, and concludes that the residual is attributable to the unspecified inputs. Among the unspecified inputs, education and advances in knowledge are the most important. E.F. Denison (1962), the chief exponent of this approach, used the Cobb-Douglas production function in calculating the value of the residual factor for U.S.A. for the period 1927 to 1957. The average growth rate during the period could not be accounted for by the contribution of the factors of production, namely land, labour and capital. The average growth rate worked out to be 2.9 per cent and the value of the residue was little more than 2 per cent, which according to him was on account of advancement of knowledge. This formed the basis of the 'residual approach' and along these lines other important contributors are Abramovitz (1957), Solow (1957), Kendrick (1961), and Schultz (1961).

Returns to Education Approach

Returns to education may be direct and indirect, the former being quantifiable and the latter are not amenable to measurement. Generally, direct monetary returns are taken into account in the calculation of rates of returns to education. Indirect returns may be in the form of an enlightened electorate, greater tolerance among people, hence fewer frictions, and therefore, an amicable and conducive environment in which development can take place. It has been found that education yields a high rate of return on investment. The monetary returns in the form of lifetime earnings to the individual far exceed the cost of education. The rate of return approach is of use in assessing the contribution of education to economic growth. It is equally useful in determining how much is to be invested in education *vis-à-vis* other sectors of the economy. This approach though theoretically sound has been criticized on the grounds of considering non-economic intangible benefits of education and the difficulty in obtaining accurate data to calculate the returns attributable to education. Economists using this approach are Becker (1975), Hauthakker (1959), Psacharopolos (1981), Hussain (1967), Panchemukhi (1969) and Tilak (1987).

Manpower Planning Approach

For economic development modern economies require a wide range of human skills and knowledge acquired by manpower. In fact, it is impossible to utilize efficiently many of the complex forms of physical capital in the absence of a relatively high level of human skills. Manpower Planning Approach tries to give a rough estimate of the future requirements of educated and skilled manpower of an economy for different productive sectors. Some of the techniques and methods adopted for projecting manpower requirements include. (a) estimation on the basis of the employers' opinion about their future manpower requirements; (b) extrapolation of the past employment trends into the future (Harbison and Myers, 1974); (c) inter-country comparisons (OECD, 1962); (d) on the basis of Development Plans and Projects, and (e) on the basis of productivity of labour and future output (Parnes,

1964). Some important contributors to this approach are Correa-Tinbergen-Bos (1964), Leyard and Saigal (1966), Stone (1966), Ramanujan (1969), Shri Prakash (1971, 1977), Prakash and Radhakrishnan (1973) and Lawma (1990).

Linkage Between Education and Economic Development

That Education and Economic Development are positively related is a known fact. The association between the two can be seen under the following linkages:

Quantitative Linkage

Adult literacy rates or school enrolment ratios were taken as proxies for the human capital of an economy in the early days. Then the shift was on average years of schooling. Finally, Barro and Lee (1993) provided for internationally comparable data on average years of schooling. In essence, more schooling is associated with higher individual earnings. However, social returns could be either above or below the private returns. The most common argument is that, the social returns will exceed the private returns because of the positive effects of education on crime, health, fertility and on growth and productivity of the economy as a whole.

Qualitative Linkage

Ignoring quality differences significantly distorts the picture about the relationship between education and economic outcomes. Much of the discussion of quality has identified cognitive skills, such as mathematics and science, as the important dimension. Hanushek and Kim find a statistically and economically significant positive effect of the quality of education on economic growth. They, in a study observe that, immigrants who were schooled in countries that have higher scores in the international mathematics and science examinations earn more in the United States. Thus, it is not simply the quality of education, rather quality education which contributes more to economic growth and development.

Institutional Linkage

The effect of educational quality on economic growth may differ depending on the economic institution of a country. The pace of economic growth depends to a great extent upon the availability and quality of economic institutions. It is hard to have a strongly growing economy without complementary institutions in the labour and product markets, without openness to trade and investment and without effective systems of laws and property rights. Deficiencies in the institutional environment result into misuse of cognitive skills rendering the average effect of education on growth negligible.

Financial Linkage

Since cost of education is considered to be investment expenditure rather than consumption expenditure, adequate financing of this strategically important sector can only lead to a faster growth and lasting development of an economy. In the area of financing of education, the trends in India correspond with the global trends – high rates of growth in public expenditure on education in the 1960s, negative rates of growth in the 1970s, steady but slow positive growth in the 1980s and declining growth in the 1990s that accompanied the adjustment policies.

To sum up, the mutually reinforcing relationship between education and economic development can be witnessed both at macro and micro levels. At macro level, nations with illiterate and less educated masses cannot progress or increase their output substantially and as a result remain at low standards of living. At the micro level, illiterate and less educated individuals or households are less productive, join less paying occupations, thus earn less and remain at very low levels of living, mostly below poverty line. As to the efficacy of education, APJ Abdul Kalam rightly states that, “Education is the engine of economic growth and social change. It creates motivation for progress and brings revolution in the ideas necessary for the progress of the country. It teaches honesty, inspires patriotism, enhances social prestige and promotes economic development. When people are educated, we not only get teachers, professionals and executives but more importantly citizens who are aware, sensitive

and responsible. It makes people place social good above personal gains. Not only this, it transforms a human being into a whole sole whole, a noble soul and an asset to the universe.”

Importance of the Study

During the last five decades or so the priority which was earlier given to investment in physical capital for effecting economic growth has changed and emphasis is now on human capital, which constitutes human resources capable of yielding economic returns over their life span. Investment in human capital may take several forms, the most important being investment in education.

Like other producing units, educational institutions transform inputs into outputs, incurring costs in the process. The inputs of educational plants consist of both the human and physical resources. These factor inputs comprise the services of teachers and other non-teaching staff as human inputs, inputs of students' time and services as raw-materials, services of the means of transportation and communications and services of such material goods as books, stationery and uniforms, buildings, laboratory and other equipments as physical inputs of the educational production. The identification of the unit of output in education is a typical problem. Enrolments are generally taken as the output of education in order to estimate unit cost of education. The output of education may be said to be the “knowledge added” or “educational value added” which consist of the knowledge acquired and capabilities developed by the students at each stage of their education. Total enrolment is taken as gross output and the number of passed-out or graduates may be regarded as net output (Prakash, 1996).

The services of the factor inputs of education are purchased from different markets. The size of the markets of individual input may be spread from purely local to international and their structures may be approximated from pure competition to near perfect monopoly. However, most of the markets are highly specialized oligopolistic markets with widely differentiated products. The educational institutions which buy the factor services has to pay fixed prices set by the public authority in case of academic and non-academic staff while the services of other physical inputs at the prevailing market

prices. In centrally planned economies, prices are fixed by government while prices are the result of the interplay of the forces of demand and supply in market economies (Prakash, 1996). Estimation and analysis of factor cost of education is done by classifying these factor inputs into different components, which enables the assessment of their level of utilization.

The economic significance of education has led to the allocation of a large proportion of public fund to the development of education, especially in developing countries. In India, like many other developing countries, national commitment was made in the field of education after Independence. Tremendous growth of education sector is seen in India because of consistent effort made under Five Year Plans. In the sphere of higher education, there were 25 university level institutions, 700 colleges, 15,000 teachers and 1,00,000 students in 1950, which has increased to 431 university level institutions, 20,677 colleges, 5,05,000 teachers, and 1,16,12,000 students by the year 2008 (Reddy, 2009). Thus, there is an ever expanding demand for education. India has the third largest higher education system in the world after China and the United States.

The magnificent growth of educational sector in the country absorbs a considerable amount of the national investible resources resulting in a serious resource crunch due to its limited share in public budget and a competition for resources with other sectors of the economy. Higher education in the pre-Independence days was largely supported by private charity. However, the role of government gradually increased in its financing after Independence, and public expenditure on education is seen to increase rapidly and steadily over the period. It increased from ₹ 114 crores in 1950-51 to ₹ 41978.21 crores in 2008-09, measured in current prices (Shaikh, 2009). This shows that expenditure incurred by public authorities has risen by nearly 368 times during the said period. In case of Mizoram, the budget expenditure on higher education has increased by 3.6 times, i.e. from ₹ 1161.88 lakhs in 1999-2000 to ₹ 4122.05 lakhs in 2008-09 (Table 4.9). However, the ratio of higher educational expenditure to the state budget and the Net State Domestic Product (NSDP) remained at 1.5 – 2.60 per cent and 0.82 – 2.03 per cent, respectively during the same period (Table 4.10). As to the sources of finance, the contribution of public sources increased from 87.3 per cent to 91.6 per

cent during the period 1976-77 to 2007-08, while the share of private sources came down from 12.7 per cent to 8.4 per cent during the same period (Table 6.7). This implies a heavier burden on the shoulder of the government.

In fact, the public authority will find it difficult to earmark more of its revenue resources for the development of education, particularly higher education as the factors like increase in population, urbanization, improvement in economic standard, social and cultural consciousness etc., are pushing up the demand for education. In order to meet this increasing demand for education with the available limited resources, planners and policy makers will have to evolve methods for lowering the costs of education for a given level of output or increase the productivity of given inputs.

To devise effective strategies for achieving higher educational goals with limited resources it is necessary to have thorough studies on the various aspects of educational finance. Often in the study of financing of education 'cost' is taken synonymous to 'financing' on the assumption that financing is attempted to defray the costs. Analysis of costs is an integral part of educational management. Not only does it give us an idea of the total requirement of funds in the educational sector, it also gives us the extent of burden of educational expenditure on the government, how we can justify this expenditure in a poor country like India where many areas are in want of government's attention. Is it possible or desirable to shift a part of the burden to individuals? If so, how much of the burden can be shifted? These are relevant aspects which need to be examined. Besides this, unit cost can also be calculated. Educational costs per student or per course or per institution is required to work out financial allocations and costing of educational schemes to study the efficiency level of an institution, to improve the optimum utilization of resources and to evaluate the input-output design (Natarajan, 1990). Unit cost estimation has much practical significance in the field of educational planning. It serves as an important technique of evaluating the internal and external efficiency of resources invested in education.

The financing of education has been an area of attraction to the researchers and policy makers all over the world. Quite a few studies on financing of higher education at the national, state and micro level have been done in India by individual researchers, commissions and

committees. To the best of our knowledge, except the one, "Higher Education in North-East India" by Vanlalchhawna in 2006, no other systematic study has been conducted in this field. The present study is an earnest attempt to analyze and examine the important aspects of financing higher education in Mizoram.

Objectives of the Study

Being the apex of entire educational structure, higher education plays an important part in the educational system of a country or a region. At the same time, it produces efficient manpower and promotes economic development. Higher educational history of Mizoram begins with the year 1958 when the first college was established in the state, with a substantial financial donation from the then philanthropist, Pu Pachhunga. During the decades of 1970s and 1990s there has been a rapid growth of higher educational institutions in the state. Initially, colleges were established basing on needs, but later on political considerations resulted into mushroom growth of colleges. This not only deteriorates the quality of higher education (as these institutions lack adequate infrastructural facilities) but also implies a greater financial burden on the state government. Therefore, the following objectives were set in the present study to make it not only of academic interest but also of practical utility:

1. To examine the growth of higher education in Mizoram with inter-district analysis.
2. To study the trend and pattern of public expenditure on education in the state.
3. To estimate per unit public and private cost of higher education in the study area.
4. To determine the optimum enrolment size in the higher educational institutions of Mizoram.
5. To analyze the sources of finance for higher education with their relative importance.

Hypotheses

The following hypotheses were postulated for empirical verification in the study:

1. There is an inverse relationship between unit cost and enrolment size.
2. Public cost per unit is higher than per unit private cost of higher education.
3. Higher education is highly subsidized in Mizoram.

Methodology and Database

In the present study, financing of higher education is analyzed by categorizing the higher educational institutions of Mizoram into three groups, viz. (1) general degree colleges, (2) professional colleges, and (3) technical institutions. In the absence of any technical institution offering degree courses and due to the joint management of higher and technical education by the same department of the state government, the two Polytechnics were included in the third group as 'technical institutions'. Data were also collected from Mizoram University and ICFAI University, Mizoram for post-graduate level of study. Apart from these, data were collected from several published as well as unpublished records of the government departments and other relevant secondary sources.

The unit cost of higher education in Mizoram is analyzed under two heads: (a) public cost, and (b) private cost. In the general discussion on public cost Mizoram University, and ICFAI University were not included since these two universities are still at their formative stage. Due to heavy capital expenditure and small student population, unit costs per student, in these universities worked out to be very high and hence are treated as statistical out layers. However, in the calculation of private cost of education the two universities were not excluded since only the expenditures directly borne by the students and their parents were taken into account in this case.

Composition and trend of unit cost of higher education were analyzed for the period 1997-98 to 2007-08. Analysis of the pattern and structure of per unit public cost of higher education for Mizoram followed by the pattern and structure of the same for the three types of higher educational institutions separately were provided in the study. As for the private cost of higher education, it was analyzed for the academic year 2007-08.

In the analysis of data, simple statistics like percentage, means,

standard deviation (SD), coefficient of variation (CV) and regression analysis were used. Proportionate or percentage shares of expenditure on individual items in the total cost were used in the analysis of public cost of higher education. Mean, standard deviation, maxima and minima were employed in analyzing the components of private cost. Coefficient of variation has been applied for showing the variation and variability of private cost of education.

For studying the relationship between unit cost and enrolment the former has been regressed on the latter using the Ordinary Least Square (OLS) method. The linear equation used is:

$$Y = b_0 + b_1X \quad (1.1)$$

where Y = Unit Cost of Higher Education; and X = Enrolment. In the regression equation ' b_0 ' is Y intercept and ' b_1 ' is the regression coefficient which shows the rate of change in the cost per student for a unit change in enrolment. The strength of the relationship between the dependent variable Y and the independent variable X has been measured by the coefficient of determination (R^2).

Quadratic function had been fitted to the cost-enrolment data in order to determine the optimum enrolment size and the minimum cost corresponding to it. The second degree polynomial function used is:

$$Y = b_0 + b_1X + b_2X^2 \quad (1.2)$$

where Y = Unit Cost of Higher Education; X = Enrolment; and b_0 , b_1 and b_2 are the constants of the function. The optimum enrolment or the minimum unit cost was determined by following the simple optimization techniques of calculus as follows:

$$\text{First Order Condition: } dy/dx = 0 \quad (1.3)$$

$$\text{Second Order Condition: } d^2y/dx^2 > 0; \text{ Minimum} \quad (1.4)$$

$$< 0; \text{ Maximum}$$

Calculation of Public Cost

Public cost of higher education (PBC) is the sum total of the

expenditure on recurring (RC) and non-recurring (NRC) heads incurred by the public authority.

$$PBC = RC + NRC \quad (1.5)$$

Per unit public cost (PBUC) is obtained by dividing the public cost (PBC) by the number of students enrolled (N).

$$PBUC = PBC/N \quad (1.6)$$

Recurring cost (RC) has again been classified into the expenditure on salary, DA, etc., (SD), building (repairs etc.) (BD), maintenance of furniture (FR), library maintenance (LB), scholarship (SC), laboratory (LT), student activities (SA), telephone/internet (TI), travelling allowances (TA), and other stuff (OS).

$$RC = SD + BD + FR + LB + SC + LT + SA + TI + TA + OS \quad (1.7)$$

Likewise, non-recurring cost (NRC) consists of expenditure on library (new addition to or asset creation in) (LB), construction (CN), equipment (EQ), furniture (new addition) (FR), and other items (OI).

$$NRC = LB + CN + EQ + FR + OI \quad (1.8)$$

Net public cost per unit (NPBUC) is calculated by deducting the admission fee, tuition fee and other non-refundable fees (FE) from the total public cost (PBC) divided by the number of students enrolled (N).

$$NPBUC = (PBC - FE)/N \quad (1.9)$$

Calculation of Private Cost

Private cost of higher education (PVC) is calculated by adding up the expenditures borne directly by the students and their parents on admission, tuition and other non-refundable fees (FE), books, stationery, internet etc. (BS), accommodation (AM), food including tiffin (FD), conveyance (CY), and personal maintenance such as healthcare sports etc. (PM).

$$PVC = FE + BS + AM + FD + CY + PM \quad (1.10)$$

Per unit private cost (PVUC) is calculated by dividing the private cost (PVC) by the number of students enrolled (N).

$$PVUC = PVC/N \quad (1.11)$$

Net private cost per unit (NPVUC) was found out by subtracting the amount of scholarship received by each student (SC/N) from the per unit private cost (PVUC).

$$NPVUC = PVUC - SC/N \quad (1.12)$$

Sample Size and Selection of Sample Units

In the process of generating empirical data for this study multi-stage (two-stage) sampling was adopted. In the first stage, 15 out of 22 general degree colleges were selected. Colleges were selected in such a way that— (i) both rural and urban areas are represented, (ii) colleges with high, low and medium size of enrolment are included, and (iii) at least one college from each district is covered. As for the professional colleges, 1 out of 3, located in Aizawl city, was taken as the sample. As the other two colleges impart training mostly to the employees, Mizoram Law College was selected as the sample. Regarding technical institutions, both the Polytechnics of the state were selected, one each from Aizawl and Lunglei district. For the cost of post-graduate level of education, the sole central university, i.e. Mizoram University and the sole private university, i.e. ICFAI University, Mizoram were taken as the sample.

In the second stage, students were stratified course-wise from the sample institutions and then selected, at random, from each stratum. Number of students selected randomly from each course was as follows: 84 from BA, 36 from B.Sc., 18 from B.Com., 10 from LLB, 24 from technical courses, 12 from MA, 14 from M.Sc., 6 from M.Com., 4 from BE, 3 from MBA, 3 from BBA, 3 from BCA, and 3 from BHTM. In all, 220 students out of the total enrolment of 7254, representing 3.03 per cent, were selected to constitute the sample.

Procedure of Data Collection

Data for the present study were collected both from the primary and the secondary sources. However, for cost analysis, the required data were mainly collected from primary sources. For this purpose three sets of questionnaires were prepared and administered.

The first set consists of the Questionnaire to the Directorate of Higher and Technical Education. General information on colleges and technical institutions with enrolment and financial aspects at the state level was collected through this questionnaire.

Questionnaires to the Higher Educational/Technical Institutions were the second set, through which data were collected on institutional details like personnel strength, student strength, examination performance, and more emphatically on costs – recurring and non-recurring, and the various sources of finance.

The third set of questionnaires was the once designed to obtain information from the students. For private cost of education this was the only means, which collected the students' personal, socio-economic, expenditure related, income related and borrowing related data.

Secondary data were also collected from published and unpublished sources of government departments like Directorate of Census Operations, Directorate of Economics and Statistics, Planning and Programme Implementation Department, Finance Department of Mizoram and various websites of the state government, central government and international organizations.

Cost of Higher Education at Current and Constant Prices

Finally, the time series data on cost of higher education at (market) current prices of our present study were converted into constant prices using the Wholesale Price Index (WPI) with the base year 1993-94 (=100). In doing so, the WPI figure for 'All Commodities' were taken into consideration.

Limitations of the Study

Against lofty blue-prints researchers usually come across several

constraints and barriers. The present work is also not an exception. The main limitations of the study are:

- (i) The opportunity cost of education could not be estimated. In the absence of opportunity cost or income foregone by the students, total cost of education consists of public cost and direct private cost.
- (ii) Expenditure on direction and administration at the Directorate and Secretariat level were not included in the estimation of cost of education at the undergraduate level. However, the administrative costs were included in the case of post graduate level of study.
- (iii) Data on public cost could practically be collected for only ten years in spite of the fact that questionnaires for this purpose were designed for twenty years. Similarly, in the process of collecting data on private cost from the students a good number of questionnaires had to be rejected on the ground of incomplete and dubious response.
- (iv) All aspects relating to the financing of higher education in the state could not be covered in the present study leaving scope for further research in the field.

Scheme of Chapters

The present study is divided into the following seven chapters:

- Chapter 1 deals with a brief introduction of the topics, interrelationship between education and economic development, scope and objectives, importance of the study, limitations, hypotheses, methodology and scheme of chapters.
- Chapter 2 provides a brief profile of the State including its location and area, topography and climate, resource base, flora and fauna, socio-cultural background, administrative set-up, population profile, political history and economic scene.
- Chapter 3 presents a brief review of literatures on the subject at local, regional, national and international levels.

- Chapter 4 examines the profile of educational development in Mizoram with inter-district comparisons and growth trend of public expenditure on education, in general and higher education, in particular.
- Chapter 5 analyses the estimates of per unit public and private costs with their components, and the estimates of net and total cost of higher education in Mizoram. It also shows the relationship between unit cost and enrolment, and attempts to determine the optimum enrolment size for different types of institutions.
- Chapter 6 discusses the different sources of finance for higher education in the State with their relative significance.
- Chapter 7 finally presents the summary of major findings and conclusion.

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