Chapter – II

REVIEW OF LITERATURE
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2.1 INTRODUCTION

This part of the thesis is devoted to present reviews of some of the important theories and empirical studies related to the Present Study. This part of the study is devoted to present reviews of theories and empirical studies related to Human Capital approach of education and benefit incidence theory of Public expenditure.

2.2 THEORIES ON HUMAN CAPITAL

The concept that investment in human capital promoted economic growth actually dates back to the time of Adam Smith and the early classical economists, who emphasised the importance of investment in human skills (Kiker B.F 1968).

This view was very well established by Mincer (1958). He states that investment in training directly influences the life time earnings of individual's. Though the training takes time and the individuals earnings are postponed for another year, the training compensates for the cost of training in the present value of life time earnings.

This view was also established in a study made by Harberger (1959). His study finds that technical advances are the key factor in achieving rapid development and that additional expenditures to improve the quality of the labour force are of primary importance in attaining this end.

Schultz (1961) and Denison (1962) showed that education contributes directly to the growth of national income by improving the skills and productive capacities of the labour force. This important finding led to a flood of studies on the economic value of investment in education.
Initially, Schultz paved way for the analysis of investment in human capital from the point of view of economic growth. He contended that such investment in human capital accounts for most of the impressive rise in the real earnings per worker. The study made by him stressed that the differentials in education is highly reflected in differential in earnings.

This view was examined by Becker (1962). His study aimed to estimate the money rate of return to college and high school education in the United States. He found that investment in human capital raise the earning capacity.

Bowen (1963) has assessed the economic contribution of education using four major approaches.

1. Correlation approach (Correlating educational activity and Economic activity)
2. The residual approach (Input-Output approach)
3. The returns to education approach (Earnings-Education)
4. The Forecasting man-power needs approach.

These approaches were followed by few economists to measure the contribution of education to economic development. The early attempts to measure the contribution of education to economic growth were based either on the growth accounting approach used by Denison and others or on the rate of return to human capital, an approach adopted by Schultz and others. Growth accounting is based on the concept of an aggregate production function, which links Output(y) to the input of Physical Capital(K) and Labour(L). The simplest form of Production function, assumed in many of the studies is a linearly homogeneous Production function Y = F(K, L).
Schultz (1963) method of measuring the contribution of education to economic growth (that is, in terms of the rate of return to human capital, which he then compared with the rate of return to Physical Capital) led him to suggest, as Denison had, that a substantial proportion of the rate of growth of output in the United States was due to investment in education. This method has also been used to estimate the contribution of education to economic growth in developing countries including Ghana, Kenya, Nigeria, Malaysia and the Republic of Korea. He concluded that increased education of the labour force appears to explain a substantial part of the growth of output in both developed and developing countries. However, these estimates rest on a wide variety of theoretical assumption that have been challenged. In particular, it is assumed that the earnings of different groups of workers are a measure of their contribution of output, that the higher earnings of educated workers are a measure of their increased productivity; and therefore of their contribution of economic growth, and that the relationship between inputs and output is a fairly simple one, which can be analysed in terms of an aggregate Production function.

All these assumptions have been attacked in the literature on the economics of education and this opposition has helped to undermine the widespread belief that investment in education contributes to economic growth. Bowman and Anderson (1963) and Kaser (1966) certainly demonstrated a Correlation between level of per capita income and level of educational development. However, the fact that rich countries have higher levels of literacy and spend more on education than poor countries could mean that education has helped countries to become rich or it could mean that rich countries can afford to spend more on education.

It is evident that investment in human capital leads to higher earning capacity. To verify this fact, Kaser (1966) has pooled time-series data and cross-section observations for a dozen industrialised countries using real GNP per head and five different educational indicators.
1. Enrolment rates for three levels of education
2. The ratio of students in secondary and higher education to primary school children.
3. The Pupil/teacher ratio
4. Total money outlays per student in all three levels.
5. Teacher's salaries as a proportion of GNP per head at Current Prices.

Finally Kaser concluded that at similar levels of GNP per head, the more children there are now at schools, the higher the rate of growth of GNP during the following decade. Furthermore, neither outlays per student nor teacher's salaries are clearly associated with levels of GNP.

Investment in Human Capital (in the form of education) leads to higher earning capacity was also verified and accepted by Blaug (1968). He asserts that it comes as a great surprise to learn that there is a significant relationship between incomes per head in different countries and the proportion of highly educated people in the labour force. This is a much stronger test of the hypothesis that providing education is investment than that provided by Correlations between income and enrolments, in as much as labour force participation rates differ significantly between countries. In short, additional education can be more or less confidently expected to raise life time earnings and in this sense, acquisition of education is of the nature of a Private investment decision geared to future returns.

To substantiate his argument, Blaug selected four sample countries, two rich and two poor countries. Finally he found that the higher the educational attainment, higher the earnings and it leads to higher demand for education. Hence, education remains a type of investment not only for the individual but for society as a whole.
Psacharopolous and Woodhall (1985) in their study estimated the contribution of investment in education and income. They also stressed that the evaluation of educational investment should take into account the demand for education.

Tilak (1990) has attempted to measure the earnings function to Indian data in order to examine the influence of education and experience on individual earnings of women in comparison with those of men. He found that education and experience explain more than thirty per cent of variance in income.

It is clear from the above studies that investment in human capital leads to economic growth in general and maximize the individual's welfare in particular. In addition to examine the distribution of benefits of government expenditure on education, the study aims to know the demand for education among the households. There is no doubt that education is a 'merit good' provided by the government through their budget. But it is not availed by all the households because it has some time and budget constraint. In order to know such aspects, the demand for education among households in the study area is also considered as relevant. As one of the objectives of the study is to know the factors influencing demand for education, it requires the review of theories and empirical studies on demand for education.

2.2.1 DEMAND FOR EDUCATION

We can trace three broad approaches in the development of the study of demand for Education. They are (1) Pre-1960 approach, (2) Human capital approach and (3) Household economics approach (or Household Production Function).

According to the traditional Pre-1960 approach education was treated as Consumption, Public expenditure on education as social service and as such the demand for education as consumption depends on family incomes, and the price of schooling in the
form of tuition. It neglected the important component of the private cost of schooling viz., earnings foregone and ignored the systematic forward-looking view of earning prospects in the labour market.

The human capital approach views education as investment rather than consumption, whether undertaken by an individual or by government. The human capital theorists emphasize the private benefits and costs associated with personal investments in education. Individuals or families acting on behalf of their children, are thought to choose that level of education for which the present net value of expected future income is positive. The reason why some individuals get more education than others, according to human capital theory, is that persons differ in their ability to benefit from education than others or in the costs they must pay to acquire the education, or in both.

Some of the major studies made in the field of demand for education are:
1. Campbell and Siegel (1967); 2. Hoenack (1968, 1971); 3. Hoenack and Feldman (1969); 4. Freeman (1971); 5. Corrazzini, Dugan, Grabowski (1972); 6. John F. Crean (1973); 7. Redner and Miller (1972, 1974); 8. Kohn, Manski and Mundell (1974); 9. Hoenack and Weiler (1975, 1979); and 10. Barbara Redman (1976). All the studies under human capital approach except Barbara Redman (1976) and Crean (1973) are studies on demand for higher education. Moreover, their approach is from the student (individual) and not household's point of view. As the present study is based on the concept of New Theory of Consumer Behaviour, we do not make detailed review of the human capital approach.

2.2.2 NEW HOUSEHOLD ECONOMICS

Before understanding the conceptual framework of the New Theory of Consumer Behaviour (New Household Economics), we can look into some of the important features of the New Theory. Some of the special features of the household economic theory are (1) the family is the unit of analysis; (2) The family is not only a consuming unit but also a
producing unit of basic household commodities which enter into the household utility function such as, nutritious food, health, entertainment and so on; (3) The head of the household maximises the utility of the household subject to resource (time of members of the family, full income of the family) and Price constraints; (4) The time resource of the individuals in household can be allocated between various activities such as market work, household work, investment in human resources and leisure. It is contrast to the traditional consumer theory which allocates human time only to market work and leisure; (5) In terms of economic analysis, the family as a decision making unit with respect to household production is viewed as an application of the theory of the firm in traditional economic theory.

There is an assumption that the welfare of each member of the family is integrated with a unified family welfare function. In this model shadow price is given a role. In that both time and goods shadow price is recognised. Since Children's time is also an important input in the education of children, Mincer emphasizes foregone earnings as a major component of education. Many studies used some form of price variable at least implicitly or by proxies. A list of such studies has been given by Birdsall (1982). In addition to money and time cost, environmental variables also play a role in the household in the production of goods and investment in education.

This framework is much more flexible than the traditional consumer behaviour theory. It can be used to analyse human behaviour not only in market but also in households which are traditionally considered as outside economics.

2.2.3 REVIEW OF EMPIRICAL STUDIES ON DEMAND FOR EDUCATION

From the above discussion, we have traced the development of Household economics in the analysis of demand for education. Now, we shall review the major empirical works so far made within this theoretical framework.
The development of household economics is a very recent one. Yet within the last 20 years attempts have been made to use this framework to analyse fertility behaviour, schooling of children, labour force participation etc. We confine our review of empirical literature to the studies on schooling of children. Some of the major studies reported on the demand for Education are Edwards L.N. (1975), Evenson and Rosenzweigh (1975), Zabara (1977), Rosenzweigh (1977), Evenson and Banskota (1978), Makhija (1980), Chernichovsky (1981), Paqueo (1981), Birdsall (1982), Arumugam (1983), Linda (1987), Rice (1987), Kodde and Ritzen (1988), Prakash and Sumitra (1992), Sreenivasan (1996).

Edwards (1975) attempted to explain the significance of economic factors in state level variations in teen-age school enrolment rates. The author has used U.S. data for the year 1960. In this study the proportion of enrolment of 14-17 years age group children according to race and sex was taken as dependant variable. Median annual income of males aged 35-54, educational attainment of males and females aged 35-54, unemployment rate, per pupil education expenditure were taken as independent variable. He found that economic factors are playing significant role in demand for education.

Evenson and Rosenzweigh (1975) have studied the demand for primary education. Using the Indian district level census data for the year 1961, they have examined the associated decisions of the family size, Schooling and child labour force participation. The percent of 5-14 age children in school - sex wise - was used as the dependent variable in a two-stage least-square model. The other household variables and daily wages of males and females were used as independent variables. Finally he concluded that socioeconomic variables of the household especially income plays a major role in demand for education.

Rosenzweigh's (1977) study used the U.S. State level data about farm and non-farm population for estimating the demand for secondary level of education (15-18 years age). In this study, the author has accepted the role of education in
agricultural production assuming that the productivity of children can be augmented by increasing either quantity or quality of schooling. He has also investigated the school enrolment and expenditure behaviour of farm and non-farm population using ordinary least-square method.

Zabara (1977) has analysed demand for education among children of school age in Brazil using the household data collected by a village survey. A simple ordinary least-square model was formed with percentage of children enrolled in school as the dependent variable and the household characteristics according to the type of ownership of land as the independent variable by the author. Using the above model she has investigated the factors affecting the demand for education. She found that economic status relatively influences the demand for education.

Evenson and Banskota (1978) have estimated the enrolment demand for education. To know the effect of socio-economic variation on the jointly determining variables like number of children, investment in children and leisure. They have used the primary household survey data conducted in 1963 and resurveyed in 1977 in Philippines. Using ordinary least-square model, they have attempted to estimate the influence of the variables like infant death, parents education, wages of father and mother, index of home management, number of children and full income of the household on the completed years of education of the sons and daughters.

Makhija (1980) has attempted to find the causal link between new variety of crops and schooling of children, number of children and adult labour force participation. In the above process, the author has also estimated the demand for primary and secondary level of education. The author has analysed the data collected from farms which applied high-yielding varieties (1970-71) in India. The author has used the two stage least-square model with the level of schooling of the child in school as the dependent variable.
The other variables used for the estimation of demand for education were parents education, employment opportunity, crop pattern, fraction of adults work for wages etc.

Chernichovsky (1981) has estimated the demand for primary and secondary levels of education using primary household data for Botswana (two types of data were collected (1) Level of education (2) Regularity of attendance). He has attempted to find the impact of household demographic and socio-economic characteristics on the demand for primary and secondary levels of education using the ordinary least-square method. The variables used in the study are the level of schooling, child in school, child specific characteristics, household characteristics and ownership of the property. He found that among the socio-economic factors, income, size of the family were relatively influencing the demand for education.

Paqueo (1981) has analysed the factors which make the use of education process at optimal and sub-optimal level using a multipurpose household survey data for Bicol in 1978. He has used the child in school as the dichotamus dependent variable in his probit analysis. The self selectivity bias was tested using child specific, household and community variables.

Birdsall (1982) has attempted to estimate the demand for primary and secondary level of education. The author has also attempted to study the effect of differences in the availability and quality of schooling on children's schooling attainment in Brazil by combining the household data with measures of school availability and quality. The measures are based on the number and education of school teachers in each area of the country. In this study a one percent household census data of Brazil was used. In an OLS model, the impact of household, child specific and area level variables on the years of schooling of children in primary and secondary level was estimated.
Arumugam (1983) has studied the demand for secondary level of education in Tamil Nadu using household survey data. In his analysis, he has used the proportion of enrolment of children and age-eligible children among the households as the dependent variable and estimated the demand for education using ordinary least-square model. He has taken the household characteristics and environmental factors as the explanatory variables. With respect to the demand for education, his study concluded that mother's education and number of hours the mother works, occupation of the father are the important determinants of the demand for secondary level of education. But the number of hours the mother works was negatively related with the demand for education which confirms the mother's hometime hypothesis of Becker.

Linda (1987) has attempted to estimate the family and school background and school achievement among low income blacks. The author has taken the socio-economic status of the parents as independent variable and school achievements as the dependant variable. In this study he found that family background, behaviour and attitudes have greater significance in the school achievements of the children.

Rice (1987) has studied the demand for education in U.K. He has studied the determinants of demand for education using socio-economic variables. He found that income and educational maintenance allowance were considered significant factors on demand for education.

Kodde and Ritzen (1988) have studied the impact of parental education level, family income, earnings and employment on the demand for higher education in Netherlands. In this study the wald or distance test has been used to discriminate between direct and indirect effects of the parental education level and other background variables on the demand for higher education. He found that there was substantial impact of parental education level on educational choices.
Study made by Prakash and Sumitra (1992) analyses whether the educational system is in equilibrium using the simultaneous equation model. The authors have constructed a model to differentiate the demand for education from the general concept of demand. They have identified educational demand as demand for the right of an individual to attend an educational institution at a specific location to acquire knowledge. They have analysed the determinants of demand for education from the point of view of education as investment and education as consumption. After careful consideration of these two aspects they have taken demand as independent variable and total private expenditure on education, private disposable income and total age-specific population as the independent variable. In this model they have used probability model and Logit model to know the demand for education. They have found in their model that the demand price (private cost) and per capita disposable income are the determinants of educational demand. Three alternative models, viz, linear probabilistic model, Exponential Probabilistic model and Logit model have been formulated and tested for the purpose of estimation.

Another important study made my Richard and others (1994) sought to analyse factors affecting the drop in demand for agriculture and natural resource science education. In their study two time-series pooled models were employed: a household production function variant (HPF) and a mincerian human capital form. Most of the empirical studies have used cross-sectional data to study demand for education. But this study has made use time-series data. Instead of taking enrolment of students, as dependent variable, the study has taken degree holders in each year. This study has developed an empirical model adopted from Kodde and Ritzen and Becker's household production approach. The author has inferred that apart from the socioeconomic background of the students, the reason for decrease in demand for education was noncompetitive salary and higher direct cost, of education.
Majumdar and Vaidyanathan's (1994) study on access to Education in India has examined the educational status of different income groups both at the all India and state levels. The study has been made primarily on the National sample survey data. The basic questions, the authors had raised in their study were, what are the sections that consume educational services and who are unable to benefit from the social expenditure on education? What is the nature and severity of constraints that impair their educational progress? How wide is the gap between the educational attainment of the rich and the poor? Does economic insecurity in variably lead to educational backwardness?. In that event, what are the non-economic determinants of educational survival and progress? Do public policies matter? Investigation of these issues have been attempted in this study. Enrolment in and attainment of various levels of education in schools were considered as two indices of participation in education. The study inferred that the middle and upper income people are better at extracting benefits (more enrolment demand) from the educational system. In this issue, the authors identified, economic determinants as well as social and cultural factors play dominant role and they have suggested deeper probing in these aspects.

Bartlett and Rowan (1994), have studied the management of unmet demand for Australian higher education. The analysis of the current unmet demand for higher education in Australia looks at the social and economic factors. Though they have identified government's policies also had played a major role in demand for education, still the social and economic factors considered significant variables in determining demand for education.

Colorado commission on higher education's working paper (1994) has examined the consequences of increased student demand for higher education in Colorado, in light of constrained resources for state - supported higher education and offers strategies to address this demand. The report describes enrolment trends at Colorado colleges and universities, work force training needs, and trends in state funding of higher education in Colorado. The report
concludes that the state must solve this enrolment/ funding dilemma in order to avoid enrolment limits, excessive tuition increases, erosion of educational quality.

Reddy (1995) has examined the factors determining the gross enrolment ratios at primary and upper primary levels, drop-outs and the proportion of non-literate children in the age group of 6-11 and 16-14 in his study. He has made use of the state level data collected by National Sample Survey Organisation (NSSO) in its 42nd round on participation in education in India. He has used correlation analysis and step-wise regression technique to explain the inter-state variation in the gross-enrolment ratio and drop-out. The important findings of this study are number of children, parents' education especially mother's education had significant influence on enrolment.

Kothari (1995) has made an elaborate study on the dualistic development and demand for education. The study was pertaining to India and he has tried to assess the relationship between general education, employment and consequently the demand for education. He has asserted that the demand for education among women can not be explained in terms of the usual higher earnings hypothesis; there must certainly be non-monetary considerations for the increase in demand for education among girls. He has also inferred that the demand for education among girls is a derived demand from boy's education. The post-primary education is demanded because of higher earnings and provides an opportunity to enter into the organised sector. According to him economic factors play significant role in demand for education.

The study mode by Srinivasan (1996) on demand for Education has defined the concept of demand for education with reference to socio-economic out look and also identified some of the important determinants of demand for education. Households disposable income, parental educational level, father's occupation, family size are the important determinants of demand for education.
In his study Srinivasan has used the modern household economics framework to derive the household utility function. Based on the framework, he has constructed an estimation model to study the demand for education using Probit and Logit techniques. He has inferred from his study that demand for education is mostly influenced by the family background factors and the Probit and Logit methods are appropriate techniques for estimating demand for education.

Bray's (1996) study on privatisation of Education has examined the issues and policy implication involved in the systems of education. It has been stressed that privatisation is common where there is excess demand for secondary and/or tertiary education. The outcomes of privatisation as identified by the author were issues of efficiency, accountability, diversity, access to education and equity. He has argued that privatisation of existing public institutions is likely to reduce access to those institutions by the poor and also has urban bias. However, privatisation is a global trend and it will be possible to meet the increasing demand for education as observed by the author.

Majumdar (1996) has studied the exclusion in education: Evidence from Indian states. The author has examined the nature and intensity of education impoverishment in our society, from a social exclusion perspective an approach which is increasingly becoming focal to the recent thinking on social disadvantage. Based upon desegregated education deprivation indices for some significant socio-economic groups, it is shown how different population groups of the same country seem to be living in different worlds in educational terms. The study is based on Human Development Index using life expectancy, knowledge and income. Based on these indices, the deprivation in education has been measured. The author has inferred that the socially and economically disadvantaged section had less access to education and had suggested that these areas can further be probed.
Mora and Jose's (1996) study on the demand for higher education in Spain has provided an overview of the Spanish educational system, focussing in the growth of demand for higher education over the last decade and policies implemented to meet the demand. The authors have identified that socioeconomic factors had more influence on the demand for higher education.

Bray's (1996) work on counting the full cost has studied the parental and community financing of education in East Asia. The study has examined the significance of private cost of education in the public education system as they have reflections on the enrolment of students in educational institutions. The focus of the study was on nine countries of East Asia-Combodia, China, Indonesia, Lao people's Democratic Republic, Mongolia, Myanmar, the Philippines, Thailand and Vietnam. The work was based on information from four main sources. The first was the existing literature. The second was data from questionnaires sent to UNICEF officers responsible for education projects in each of the nine countries. Third, the document was based on the author's experience and field work. Finally, on information available in the World Bank on all the countries of the region. The discussion was chiefly concerned with the primary and secondary levels of education. The author has observed that the private cost of education has been a significant factor in determining the enrolment demand even in public education system. In the nine countries covered by this study, primary education in the public system is officially free of charge. Official fees were demanded at secondary level, however. Many schools were imposed unofficial fees like uniforms, transport and other items. But, these expenditures were more in private schools than in public education system. Another significant analysis made in this study was inclusion of opportunity cost in the determination of enrolment demand for education by the households. The author has observed that due to the change in economic system and sudden availability of wage
earning opportunities many families faced a difficult decision on whether children should stay in school or enter the labour force. The author has also compared the proportions of households expenditure and Government expenditure made on education in the nine countries and also the burden on household budgets. Finally as a note on policy implications, the author has concluded that one can note positive and negative effects on enrolment from parental and community financing. On positive side the direct family contributions to the cost of education encourage those families to pay greater attention to pupils attendance. By contrast, the combination of direct and indirect costs imposes heavy burden on the poorest households. It led to either non-enrolment of children or drop out at an early stage. Hence the author had considered the private cost of education as an important determinant of enrolment demand for education.

The study made by Menon and Marie (1997), has examined the demand for higher education in Cyprus. Their study has confirmed that the socioeconomic factors of the households had influenced the demand for higher education. At the same time they have identified students' motivation as a significant factor. They have suggested policies like better labour market information. Promotion of vocational education and closer interaction between labour market and higher education policy makers.

These studies on demand for education were reviewed to identify the important variables which influence the demand for education. As one of the objectives is to know the factors influencing demand for education in the study area, an empirical model was constructed deriving from household utility function model. From which the functional relationship between different variables were arrived. This approach is preferred because it considers the household as the unit while studying the demand for education.
In addition to this most of the studies mentioned earlier were found this approach as relevant in similar studies. In deriving the household demand function, in most of the studies mentioned earlier, mother's occupation was not reported to be significant. However, these studies identified socio-economic background as the major factor in determining the demand for education. This was very well established by Richard and others (1994), Majumdar and Vaidyanathan (1994) and Bartlett and Rowan (1994). Another important factors identified by the previous studies were parents' education, number of children (Reddy, 1995) and private cost of education (Bray, 1996). In the present study the researcher has included mother's occupation as one of the variables. In addition to this the classification of occupation is done under in this study. The empirical model constructed for this study and variables identified are separately presented in the relevant chapter. In this study the analysis of demand for education is made for all levels of education separately.

2.3 BENEFIT INCIDENCE THEORY OF PUBLIC EXPENDITURE

As the researcher has discussed earlier, investment in human capital improves the earning capacity. Hence, people wish to acquire education. Thus education is embarked upon in the expectation that it will confer benefits upon those being educated. The question to be considered is whether they can be left to buy these benefits from their own resources or whether there are reasons for the state to involve itself in the provision of education.

Generally, the functioning of market mechanism helps to satisfy the demand for goods and services of the people. But all the needs of the people cannot be satisfied through the market. The market mechanism fails in the provision of such goods which are demanded collectively (Buchanan, 1968). These types of goods and services are public goods and merit goods. Education forms an important place in merit goods. Unlike other
goods and services, education increases not only the individuals welfare but also it increases the whole community's welfare. Therefore, the governments intervention in the provision of education is essential. The more common form of intervention in the development of education is through the public financing of educational system.

As one of the objectives of the present study is to know the benefit incidence of public expenditure on education, it becomes relevant to understand the growth and development of thoughts of public expenditure.

Nineteenth century economists could not recognise the possible favourable effects of public expenditure. As a result the study of public expenditure was completely neglected till as late as the 1920s when the importance and significance of public expenditure was fully realised. In fact, the study of public expenditure was neglected because of the mistaken belief that all expenditure was a waste. This belief was strengthened by the writings of the classical economists especially that of Adam Smith, who advocated that the government should restrict its activities to 'justice, police and arms'. The economists as well as statesmen of the 18th and 19th centuries came under Adam Smith's influence and expressed similar opinions.

But later on the theory and practice of public expenditure have radically changed. Following are some of the important pioneers of public expenditure theorists. They advocated in favour of public expenditure in their work as it generates positive effects on production and distribution of wealth and income. Pigou (1947), Arrow (1951) Samuelson (1954), Wicksell and Lindahl (1958), Musgrave (1959), Wagner (1962), Johansen (1963), Musgrave (1965). It is evident from their work that public expenditure improves the welfare of the people as they are the beneficiaries of it.
Since, public expenditure provides benefits to the people, the question whom did government expenditures benefit? has engaged the attention of scholars for quite a long period of time. From the theories of Public expenditure we understand that public expenditure makes positive effects on the production and distribution of income and wealth. Hence it becomes worthwhile to know which section of the society benefits much out of public expenditure. In order to get clarifications on these issues. It becomes necessary to understand some of the issues of measuring the incidence of public expenditure which are as follows (Reddy and Sudhakar, 1989).

i) Expenditure incidence Vs, benefit incidence;

ii) The base to which incidence is related;

iii) Classification of expenditures;

iv) Time lags in accrual of benefits; and

v) Criteria for distribution of expenditure benefits.

1. Expenditure Incidence Vs. Benefit Incidence

Quite often expenditure incidence and benefit incidence are interchangeably used in spite of considerable difference in their meanings. One view is that as long as difference in meanings is clearly understood by readers, loose usage may not create problem. But the fact is, people use the same concept and mean different things. Therefore serious problems arise. The question is why should one create avoidable confusion when the meaning of expenditure incidence is distinguishable from benefit incidence?

The pioneer in the field of incidence analysis (Musgrave, 1959), distinguished expenditure incidence from benefit incidence. According to him, "expenditure incidence" refers to changes in the distribution of income disposable for private use and "benefit incidence" refers to the benefits derived from public services. Elaborating the same, Dean J.M. observed, "benefit incidence" concerns with the distributional impact of the benefits
received from government expenditure while expenditure incidence concerns with the effect on private disposable income induced by changes in relative factor and commodity prices (Dean J.M., 1980). Essentially, "benefit incidence" corresponds to the definition employed in tax incidence. It concerns with transfer of resources to the recipients through public expenditure.

In most of the impact studies it is the benefit incidence concept that is employed and not the expenditure incidence concept (Peacock and Browning, 1954). The reason is, the former is amenable for measurement and the latter is not. To employ "expenditure incidence", knowledge about the impact of expenditure on factor prices and products and their impact on various income groups is essential. Such an estimation of first round, second round and third round effects on incomes is most difficult and a general equilibrium model need be constructed which is beyond the scope of this study. In the case of "benefit incidence" method, the measurement is possible by way of assessing the beneficiaries of a particular expenditure scheme. The choice therefore has fallen on benefit incidence only. There are three approaches to measure the benefit incidence. They are:

i) "Money flow approach"
ii) "Benefits received approach" and
iii) "Benefits valued approach"

Let us discuss these approaches in detail to find out which one of them suits best for our study.

i) **Money flow approach**: In money flow approach, costs of government outlays are allocated amongst direct recipients of the outlays; the emphasis is on recipients of outlay made by the government. A given amount of money is analysed as a flow of money to particular individuals, or to particular institutions or to particular sectors or to particular States.
It establishes an accounting identity of costs with benefits. To illustrate, take the case of
defence expenditure, or the case of expenditure on medical or the case of expenditure on
judiciary or even the case of expenditure on education: defence personnel and contractors
benefit from defence expenditure; doctors, nurses and hospital building contractors benefit
from medical expenditure; judges, magistrates, public prosecutors and the concerned
personnel benefit from expenditure on justice, and teachers and researchers and the
contractors of educational building benefit from educational expenditure. A typical study
that employed this approach is that of Gupta (1977). The weakness of this approach is
that it neglects the role of the State (or elected government) towards people. Even the
Neo-classical economists assign important role to States for meeting the needs of people.
If viewed logically, it amounts to say that those who actually receive government
payments would be zero in the absence of government programmes.

But, all this should not mean that "money flow approach" has no use at all for a
study of this type. It helps, if our objective is to ascertain the flow of resources to
particular regions, States or particular interest groups, or particular institutions, from public
expenditure. It does not help it as our objective is to ascertain which category of people - poor,
middle, high income-benefit more from public expenditure and to what extent.

ii) Benefits received approach: Benefits received approach, also called as "on whose
behalf expenditures are made approach", treats people as the beneficiaries of expenditure
and the direct recipients of expenditure as the inputs for the services/output. Its theoretical
foundations are in the Neo-classical school in which State interferes into the private
market (i) to stabilise the economic system, (ii) to allocate economic resources effectively
and (iii) to adjust the distribution of income and wealth that results from the interplay of
market forces. It assumes that State represents individual wishes and acts in the interests
of the society as a whole. Thus, when the government spends money on "general good" it is acting in the interest of all segments of the society, and when the government spends on "specific goods", it is acting in the interests of specific groups.

The benefits received approach scores number of points over money flow approach. As Luc Dewulf (1981) put it, firstly it is consistent with tax incidence analysis in which every contribution to revenue reduces income of an individual by an equal amount, secondly, the aesthetic value of equating taxes and benefits in the context of benefit incidence is appealing, and thirdly, it indicates the seriousness with which policy objectives are addressed. As for example, if policy statements refer to educational expenditures as a means of reducing income inequality, then it is relevant to find out whether the average educational expenditure per family decreases with an increase in average income or on the other hand whether it increases in absolute amount or in percentage of income. Such researches can be illuminating especially when it reveals that moneys were not spent on those segments of the economy for which it was claimed.

However, this approach suffers from certain limitations. One important limitation is its partial equilibrium approach. It presumes that in the absence of government/public sector, the underlying income distribution would be unchanged. It does not solve general equilibrium problem of closing down government and reallocated their resources to the private economy (Aaron and McGuire, 1970). But the question is, can it be taken that no government or no public sector situation be realistic? It is feared that such an exercise would be unrealistic and futile.

Another limitation of this approach is the way apportionment of benefits done to different income groups. The usual method is to divide public expenditures, into general expenditures' and 'specific expenditures' and distributing the former by distribution of income on a per capita basis or by a combination of the two and distributing the later on
the basis of assumptions relevant to each item. The difficulty with these methods is that, as Aaron and McGuire put it, knowledge about the households utility functions is lacking. Further they assume the constancy of marginal utility of money, irrespective of the level of income which is questionable. Some scholars (Maital, 1975) have tried to overcome these limitations in their studies, by estimating the marginal utilities of households by income size. The author found it difficult to calculate the marginal utilities of households. In fact, different assumptions on the marginal utility of private incomes of families yielded different results and hence estimation of incidence remained ambiguous.

Second limitation of this approach is that it does not value benefits accruing to individuals or to income groups. It assumes away the difference in the value (or usefulness) attached by individuals to a particular service or a particular good - say, defence, education or health - to low income groups as different from high income groups. Nor it accounts for the differences in the quality of services among individuals in the same group or among different income groups - i.e., vertical and horizontal - as between rural and urban areas and urban and sub-urban area. Typical examples of such services are social services such as education, medical and public health - and certain administrative services.

(iii) Benefits valued approach : 'Benefits valued approach' is a variant of "benefits received approach". It tries to take care of the valuation problem of benefits received approach. In doing so, it dispenses with the accounting framework of valuation. That is, services are not valued at their cost of production as is the case with other approaches. Instead, attempts are made to find out how the beneficiaries value the services enjoyed by them. For example, in valuing benefits from education, it is estimated how much the student or his family is willing to pay for his education if it were to be purchased in a free market. Consumer preferences are taken into account. Two studies are worth mentioning in this context; one by Aaron M., McGuire, M. (1970, pp. 907-919) and the other by
Maital, S. (1973, pp. 561-568). Aaron and McGuire took pains to illustrate it. But the net result of it was little as the task involved was tremendous and the assumptions underlying it were many.

After careful scrutiny of all the aforesaid approaches, "benefits received approach" is followed in this study as it is amenable for measurement though it has certain limitations.

2. The base to which Expenditures are Related

When expenditures are to be related to benefit the immediate question is to which base? Many a study of this type have confronted this problem. In the fiscal incidence studies, income has been generally accepted as proxy for revealing true economic position of individuals. But it does take into account wealth or assets owned by people. Nor it includes the non-money incomes enjoyed by individuals. In spite of these limitations income has been considered generally as a reasonable measure of economic position, the reason being that returns from assets owned account for the definition of income itself and reveals relative economic position of individuals.

In a nutshell, the most common practice is to treat income as the base. The estimation of income distribution can be done by official estimates (NGGO, NCAER etc.) and through field survey. This method was adopted in the study made by Reddy and Sudhakar (1989) in India.

3. Classification of Public Expenditure

What categories of expenditure promote distributive justice? Should expenditure on "pure public goods" redistribute income? How should classification be made for distribution purpose? These, are the questions that need attention before going to the next step. For, what constitutes benefits of public expenditure is crucial to benefit incidence analysis.
The existing literature on the subject provide some guidance as to the choice of classification. Some scholars have taken the view that all expenditures budgeted benefit people while some others took the view that certain categories of expenditure only benefit people. Those who subscribed to the former view did not bother much to classify expenditure while those who subscribed to the latter view classified into two to three broad categories. As for example, Musgrave, (1974) classified expenditures into, transfers, allocable expenditures and other expenditures/general expenditures; Gillespie, subdivided into transfers and expenditures; Selowsky Marcelo (1979) classified expenditures into public services whose consumption can be identified and whose consumption cannot be identified (e.g., defence, justice, etc.) by individual/households; Meerman Jacob (1980) classified expenditures into public overhead expenditures (defence, police, administration, etc.) true general expenditures and more recently Tax Foundation (1981) classified expenditures into general benefit expenditures and specific benefit expenditures. Many more instances can be cited. But suffice it to say that there is no unanimity about expenditure classification. However, the common classification used in benefit studies are true general expenditures and public overhead expenditures (Meerman Jacob, 1980).

4. Time lags

There is a problem relating to the time lags in the expenditures distributed and the accrual of benefits to people. With respect to expenditures, the problem has been solved, by many a scholar, by assuming that benefits accrue to people in the year in which they are spent. In regard to capital expenditures no satisfactory procedure was adopted. The strong reason was that long gaps occur between initial spending and final accrual of benefits over a period of time and no satisfactory way could be found to equate initial costs with final benefits. Perhaps for this reason some scholars have altogether omitted capital expenditures from their purview. Even those who had included capital
5. Criteria for Distribution of Expenditure Benefits

Criteria for distribution of benefits to different income groups is the next important step. The entire edifice of benefit incidence depends upon these criteria. Even a slight change in the criteria chosen would make much difference to the benefit incidence among different income groups. Hence maximum care is a must for selection of criteria.

There are two approaches to select the criteria; one by inductive approach and the other by deductive approach. In inductive approach, comprehensive surveys are conducted on the consumption of government services either on census basis, or on a sample basis and assumptions are made on that basis wherever necessary. Income distribution as well as services consumed by size groups are obtained from the data. But the difficulty is, that lot of time and resources are involved. Some of the World Bank sponsored studies belong to this category - Meerman (1979) and Selowsky 1979). In deductive approach, hypotheses are formulated on the basis of accrual of benefits from different categories of expenditures, and tested them empirically if necessary, and assumptions made. The assumptions thus made are applied to distribute expenditure benefits among different income groups.

2.3.1 REVIEW OF EMPIRICAL STUDIES ON BENEFIT INCIDENCE

On the basis of the benefit incidence theory of public expenditure, we have discussed so far, the relevant empirical studies on these aspects are reviewed in this section. In the available literature the distributional issues of public expenditure on education have been explained in many ways and there exists varied interpretations regarding its role in equalising opportunities.

In developed countries there have been a number of attempts to examine the relative distribution of financial burdens and benefits of education. A pioneering work in this direction has been done by Hansen and Weisbrod (1969) for public higher education system of California State. Their study suggests that the chief beneficiaries of public investment in higher education are students from families with high incomes. According to them children from upper income families not only have a higher probability of entering higher education but are more heavily concentrated at the University of California which has a high public subsidy than in the less subsidised state or community colleges. Redistributive effect of public expenditure on higher education is worked out by comparing average income, average subsidy, and average taxes, separately for the families having children in California University, State Colleges and Junior Colleges. The study concludes that "the current method of financing public higher education leads to sizeable redistribution of income from lower to higher incomes".

The study by Hansen and Weisbrod gave rise to a lot of controversy in different circles. Pechman's (1969) criticism is worthnoting. According to him public financing of higher education is progressive rather than regressive in the sense that poor benefit more than what they pay and rich benefit less than what they pay for higher education. He used the same data to compare the costs and benefits of California public higher education according to the distribution of families by different income brackets at Junior Colleges,
State Colleges, and State Universities, rather than the average family income of students attending these three types of institutions used by Hensen and Weisbrod. Pechman argues that California public higher education system is progressive rather than regressive.

But a later study by Windham (1970) which does not suffer from Hansen-Weisbrod's methodological problem comes to the same conclusion for Florida public higher education. Similar studies in other developed countries produce conflicting results (Woodball, 1975). For Canada the distributional impact of public subsidies was found to be negligible and in France the chief beneficiaries of public expenditure on education were relatively better off socio-economic groups. Study by Praff and Fuchs (1975) in West Germany also suggests that the lower income groups subsidise the education received by higher income groups.

There are relatively very few studies on the distribution of costs and benefits of public expenditure on education in developing countries. As in the case of developed countries, the evidence for developing countries is also of mixed nature - partly because of the differences in methodology and sources of data. Some important studies on the distributional impact of public financing of education in developing countries have been reviewed by Fields (1980) and Carnoy (1982).

Fields analysed the social costs and benefits of Kenyan higher education received by different income classes by adopting three different criteria: (i) equal opportunity, (ii) Cost-benefit, and (iii) ability to pay. If the equal opportunity criterion is adopted the Kenyan higher education is found to be unequal since the proportion of students belonging to low-income families is less than the proportion of high income families in the total population. According to cost-benefit criterion the system appears to be close to equitable, although there is some tendency to favour middle income groups as against the highest
income groups. By the ability to pay criterion, it is found that the richest receive a much larger share of the benefits than the tax burden shared by them and the patterns for other income brackets are mixed which can be regarded as inequitable.

Studies on public financing of different levels of education in Colombia and Malaysia also show mixed results regarding its equity effects. The study by Jallade (1974), has analysed the financing pattern of education in Columbia, the redistributive impact among income groups and among regions. The study is restricted to the distribution of benefits arising from government expenditures on education alone. It considers only the benefits accruing to students or their families as expenditures. This study has tried to measure the distributive impacts by comparing the distribution of tax burdens with that of benefits.

The customary approach to measure this impact is 'proportionality assumption. It assumes that the proportion of total taxes paid by each income group (or) geographical unit for a particular programme is the same as the proportion of the government's total expenditures on this programme. i.e. if expenditure on education amount to 20 percent of government's total expenditures, it is assumed that 20 percent of the total taxes paid by each population group is spent on education. But this approach is not used in this study, because it was not possible to compute the exact amount of transfers from one population group to another arising from government expenditures on education. The main findings, of the study is that the public financing of education in Columbia contributes to redistributing income from the rich to the poor - primary education has a strong and positive redistributive effect on income.

The study by Berry and Urrutia (1976) on the impact of public expenditure on different levels of education for the year 1966 comes to the conclusion that "Public support of education tends to improve the distribution of income somewhat. The improvement is not greater because of the elitist nature of secondary and university
education. Only primary education benefits the poorer sections of the population in a significant way. Due to very low retention rates in the system and lacking of rural schools with more than two grades, very few poor rural children have access to secondary school and higher education.

Study by Meerman (1979) proposes a new method of examining the distributive effects of public expenditure and applies it to Malaysian economy. It focuses on what it considers to be two shortcoming of the conventional approach. These are, first, the lack of empirical foundation for the correlation that is often assumed to exist between the distribution of benefits from public expenditure and the income distribution and second, the high degree of aggregation in the presentation of the distributive effects. The author tries to avoid these pitfalls. Using public data records, he estimated the unit cost of the various government outputs. An important feature of this calculation is the inclusion of the capital cost of the social infrastructure (school building & hospital). Furthermore, he uses a sample survey to determine how public expenditure is distributed among households. He uses the charged cost approach which allocates the cost of the government expenditure among households and then assumes that the benefit to the recipient equals the unit cost of the services provided.

Regarding the expenditure on education, Meerman has made the analysis by taking into account the variables like:

a) Aggregate expenditure for Education
b) Basic cost concept
   i) current public expenditures
   ii) public capital
   iii) current out of pocket expenses
   iv) wages foregone
   v) Total cost of private education.
c) Enrolments: distribution of education among households - income quintiles - finding out enrolment made

d) Current cost: calculated current public subsidy per student year at 3 levels of education.

e) Distribution of private cost

f) Public assistance with out of pocket costs of Education

The study concludes that the enrollment ratios at all three levels increase with income. The subsidy / current cost decreases with income.

Study by Selowsky (1979) measures the consumption of public services as a final commodity rather than tracing the distributive effect. Specifically, this study identifies the beneficiaries of publicly provided services, measures the subsidy received by households from consuming some of these services and attempts to explain the present distribution of consumption in terms of demand and supply. This study is based on a country-wide survey of 4019 households, in Colombia during 1974. The survey provides household income data that are used to classify the beneficiaries of government services in the overall distribution of income.

The major expenditures accounting for this fraction are the public subsidies to the education and health sector and the investment in electricity, water and sewerage. The study concludes that the total subsidy to education is distributed evenly across income quintiles i.e., the subsidy per household is constant across income groups. It results, however, from different subsidies to each educational level. The subsidy to primary education is progressive, whereas the subsidy to higher education is highly regressive.
The study by McGuire (1976) examines two features of the Hansen-Weisbrod study of costs and benefits of public higher education in California. It argues that the family group is the most appropriate universe with which to compare income of parents and that student financial aid must be added to tuition subsidies to obtain the total subsidy given to students in California public higher education. The study concludes that the subsidy granted to students was larger for students from below-average-income families than that granted to students from families with above-average income.

Another study by Jimmenez (1986) argues that the extent and pattern of public spending contribute to underinvestment and to a misallocation of scarce resources within the education and health sectors. The analysis show that the children of rich families benefit more from education subsidies than the children of poor families because of the factors like private costs, differential costs and benefits, patterns of government expenditure and rationing. The reasons for the regressive distribution are the poor income of the household, higher cost and more over subsidies are larger for higher education which is consumed by richer groups.

The study made by James and Benjamin (1987) investigates the variables that determine the distribution of education and the redistribution of income through public education such as enrolment shares by households and tax shares and redistribution. It also exposes interactions between quantity, quality and enrollment distribution in the public and private sectors. It presents empirical evidence from Japan, which has opted for limited government spending on secondary and university education, a high-quality, low-quantity public system and, therefore, only moderate redistribution through education. The study has found the enrollment and tax shares by lifetime income distribution within cohorts, to eliminate life-cycle effects on current earnings.
In India few systematic studies have been undertaken to evaluate the effectiveness of financing of education in mitigating inequalities in educational opportunity. The study made by Chitnis (1972) presents some facts regarding the situation of scheduled caste students in higher education, in the country in general, and in Maharashtra in particular. In this study the author has tried to find out the distribution of benefits of educational expenditure among scheduled caste people. By comparing the variables, percentage enrolment of scheduled caste children to total enrolment and percentage population of scheduled castes, the study tries to find out the quantum of beneficiaries of scheduled caste population. This study found that inspite of phenomenal rise in their numbers, the percentage of the scheduled castes enrolled in higher education continues to be lower than their percentage in population.

Another study by Maitra (1974) assess the distribution of access to different levels of education in rural and urban West Bengal. The access to different groups classified by monthly household consumer expenditure in primary, secondary and higher education was estimated by calculating the participation for different groups in rural and urban areas. Also, they have considered the free studentships available at different levels of education for different expenditure groups. On the whole, the study suggests that the provision of public education served to reduce the disparities in levels of living. Though the distribution appeared to favour the rich, the distribution was more egalitarian than that of consumer expenditure. The inequality is found to have increased in rural areas as against a decline in urban areas. The distribution of enrolment appeared to be more equal than the distribution of public expenditure.

The study by Lakdawala and Shah (1978) also shows some reference to one aspect of financing of education for equality of opportunity. The study examined the beneficiaries of subsidised hostel facilities at the University level in Gujarat State and found that
majority of the boarders in these hostels belong to high socio-economic groups. It is found that nearly 61 percent of students in University and College education belong to families enjoying middle and rich economic status as against only 39 per cent of students from families with poor economic status. With regard to the economic background of students staying in hostels is concerned, it is found that nearly 50 per cent belong to families with middle and high economic status. Another interesting observation made by them is that the proportion of students residing in hostels was less than the proportion of non-hostellers belonging to low income group. Thus, the public financing of institutional costs and part of private costs in the form of subsidised hostel facilities is benefiting mainly the economically better-off sections.

An important study in the framework of public finance has been carried out in India by Ahuja (1978) under the guidance of planning Commission on the distribution of benefits from public expenditure in the districts of Kanpur (U.P), Thanjaur (Tamil Nadu) and Gaya (Bihar) for the year 1974-75. One of the items chosen for evaluating the distributional impact was the public expenditure on different levels of education. The public expenditure on education was allocated by computing the participation rates in primary, middle, secondary and university education of sample households belong to different income groups. It was done separately for rural and urban areas.

One important finding of the study was that benefits per household are higher in urban areas as compared to rural areas in all levels of education and in all the districts surveyed. Further, the ration of benefits per household in urban to rural was greater at higher levels of education when compared to elementary education. Another interesting finding of the study was that per household benefit was higher in lower levels of education as compared to higher levels of education.
When distribution of public expenditure on education across income groups are examined separately for each level of education, it was found that per household benefit rises with the increases in the household annual income in both rural and urban areas and in all levels of education. It was also found that proportion of students belonging to low income groups was lower than the upper income groups in both rural and urban areas and this proportion was less in higher education when compared to elementary education in all the three sample districts.

The purpose of Panchamukhi's (1979) study was to see whether inequality in education can be attributed to socio-economic structure. This has been studied with a case study of an urban area in the state of Karnataka. He studied the in-equality in education at the school level from two points of view - access to and performance in school education of children belonging to different socio-economic groups. While evaluating the education policy in achieving the objective of equality in education he says "... that even in an educationally advanced environment (in a city with several educational facilities), participation in education is severely constrained by the socio-economic environment of the student. Hence, the success or a failure of a country with regard to the goal of 'equality in education' defined in a broader sense depends more on policies outside the purview of education rather than educational policies. When there are extreme socio-economic inequalities, policies found only equalisation of education are destined to be least successful"

On the basis of the conclusion drawn from the study, Panchamukhi suggests a major reform in public financing of education in India to minimise hardship arising out of inequalities in the short run. In his words, "It appears to be more fruitful to give educational subsidies to parents directly as part of their monthly income towards the schooling of their children at least at the secondary stage to improve the access to and performance of children belonging to low socio-economic groups."
Reddy, Shiva (1982) has tried to estimate the distribution of subsidies among different socio-economic groups in India with a case study of Punjab University. In this study secondary data on public expenditure on higher education and socio-economic background of the students were made use. By using these data, distribution of subsidies by father's income, occupational status, education, caste were examined. The study concludes that the students from high income families are benefited more. Like wise, the result is to father's education and caste. In nutshell, it is derived that the subsidy received by low-socio-economic group is less compared to high socio-economic group.

Dasgupta and Tilak (1983) estimated the pattern of distribution of education by income and social groups at different levels of education. The data for this purpose was collected by a socio-economic survey of the West Godawari district of Andhra Pradesh in India. The sample collected through multi-stage random sampling technique, included one town and a village from each of the eight taluks of the district. Essentially this study, like some others cited earlier (Meerman, 1980), analyses the distribution of education at various levels across quintile income groups in the population. The study has used two different criteria for deriving quintile income groups, viz., i) household income (HHY) and ii) household per capita income (HHPY). It is well known that these may not necessarily yield identical results. By way of calculating the mean enrolment rates and educational rates, the authors concluded that the lower levels of education is pro-poor and higher levels of education is pro-rich. They have also estimated the pattern of distribution of public expenditure on education by using a model constructed for this purpose. The study concludes that the public expenditure on elementary education has a strong and positive redistributive effect as the largest share in public expenditure on education being received by the lowest quintiles.
Another important work by Reddy, Shiva (1988) studied the Distributional aspects of public expenditure on education in Andhra Pradesh. In this study three distributional aspects were examined namely, access to education, costs and benefits of education, and economic opportunities among different socio-economic groups. The first aspect was examined by looking at the expansion and distribution of educational facilities among different sections of society. The second aspect called distribution of costs and benefits was examined in two different stages, one by analysing the system of educational finance in Andhra Pradesh in time series perspective another by estimating the distribution of benefits among different socio-economic groups. He has not studied the taxes and private cost of the beneficiaries. The third aspect was analysed based on the evidence collected from secondary sources. In this section, the relationship between education, rates of return and earnings distribution was analysed. And then the composition of state net domestic product, education level of workforce and the problems of educated unemployment were also analysed. In this study both primary data and secondary data were used. The primary survey was conducted by using multi-stage random sampling technique among households.

The study found that public expenditure on education has greatly helped the low socio-economic sections. However, inter-level comparison shown that public expenditure on elementary education was in favour of low-socio-economic groups and that on higher education, it was in favour of higher socio-economic groups.

The study by Metha (1989), aims to highlight the effect of income distribution on the determination of educational opportunity. It reveals that the economic condition of family is seem to be closely related with the pattern of utilisation in educational opportunities and the enrolment rates are positively related to the income levels of both in rural and urban areas. This study is a cooperative analysis of developed and developing countries. It concludes that economically well-off countries as well as population of higher
income group of developing countries are the main recipients of educational opportunities. Thus, the inequality in educational opportunity among different group of population has been noticed due to the prominence of inequality in income distribution. It is therefore, important that the educational inequality could and to the extent education is a factor in individuals earnings, the growing education with given inequalities in educational opportunities is likely to increase rather than reduce economic inequalities in developing countries.

Another important work by Reddy and Sudhakar (1989) examined that,

i) Whom did government expenditures benefit?

ii) What categories of expenditure benefited whom?

iii) What was the direction of expenditures over a period of time say a decade ago?

The study is based on secondary data related to allocable expenditures of Andhra Pradesh. Based on the expenditure pattern, details of expenditure under each head were collected by the authors from Detailed Demand for Grants of various department for the years 1975 - 1976 and 1984 - 1985. In this study, to find out the beneficiaries of educational expenditure, they have classified expenditure according to levels of education and estimated the enrolment in each levels of education from low middle and high-income groups. The estimated percapita educational expenditure was imputed with the enrolment of students from different income groups. The study concluded that the benefits received by middle and high-income groups decreased between the study period. But the benefits received by low-income group remained constant.

Another important study made by Metha (1990) has attempted to examine the implications of education for different economic groups and also the impact of income distribution on the pattern of education, employment and earnings opportunities. This study was based on primary data collected from 200 households in Lucknow district.
The sample was distributed equally between rural and urban areas. They collected informations related to enrolment of students, drop-outs, labour-force participation, age and earnings. The study found that the economic condition of the family is closely related with the utilisation of educational opportunity. But he has not considered the utilization of educational services among various social groups.

Chinnappan (1991) has attempted to estimate the educational development among scheduled caste and other caste groups. The study was based on a random sample survey undertaken in Madurai district, Tamil Nadu. The sample included 1180 wage earners of both the sexes in rural and urban areas. He has studied the distribution of education among the four caste groups (SCs, DCs, OBs and FCs). He has also attempted to measure the intra-caste educational inequality and also the inequality between scheduled and non-scheduled caste. He found that there is considerable degree of inequality in the educational development of scheduled caste.

Chandawat's (1992) Study on 'Equity in benefits from government expenditure on education and medical services' aimed to know who benefits from the government expenditure on these services and by how much?. The study is based on sample survey of households in Jodhpur district of Rajasthan. The author has selected one city and eight villages and surveyed 600 households. He has classified the households according to income brackets separately for urban as well as rural area. Benefits from these expenditures are calculated by dividing the expenditure by the number of beneficiaries. The results of the study indicate that the benefits from government expenditure on education are greater in urban areas than in rural areas. It implies - that government expenditure on education does not provide equal opportunities of education to rural and urban households. The study observes that the benefits from public expenditure on education are not equally distributed among various income groups in urban as well as in rural areas.
The recent World Bank study by Van de Walle (1992) examined how the utilization of education and health services and incidence of subsidies in social sectors vary across socio-economic groups in Indonesia. This study is based on SUSENAS survey data. It was conducted in 1987 and it consisted of 55,000 households. This study has measured the utilization incidence as a proportion of eligible sub-group who makes use of a social service. It has also estimated the government unit subsidies for various facilities. The study has analysed the enrolment rates by sub-groups defined by age, gender, region of residence, schooling level and by quantiles of per capita expenditure. The author found that the proportion children in each age group attending school was correlated with the income. And enrollments were higher in urban areas than in rural areas. Likewise, enrollments were higher for males than females. He also found that the government subsidies for primary education was well targeted. And the aggregate subsidy at all levels of education was the highest for the poorest deciles.

The study made by Sudhakar (1995) examines the benefits of public expenditure on health and public distribution system are distributed across different income groups. This study has assessed the distribution on All-India basis unlike most of the other studies which assessed the distribution for districts or states. This study is based on the "Benefits Received Approach" for identifying beneficiaries as well as for measuring benefits. This study is based on the assumption that the benefits are equivalent to the monetary value of public expenditure on the services which is adopted in most of the studies of this nature. The author has made use of the NSSO data which provides information about the beneficiaries of the services. In calculating the cost, the current expenditure alone has been taken into consideration and it is usually practiced in most of the studies of similar type (Ahuja, 1978, Maitra, 1985). Further, the beneficiaries have been classified according to income groups only. The comparison of benefits is made in terms of Benefit Distance i.e., the magnitude of per capita benefits received by middle and high income group. The study
concludes that the distribution of per capita benefits on health expenditure was unequal in favour of high income group in Andhra Pradesh, whereas for All India high income group got less benefits than the low income group.

With this background, the present study has been undertaken to examine the distribution of benefits of government expenditure on education. As mentioned earlier, most of the studies of this nature are having some limitations while measuring the benefit incidence. Generally, the measurement of net benefit is possible only when we are able to quantify the quantum of tax paid by a particular group and benefits received by government expenditure by the same group. In most of the studies, this approach is not tried (except few World Bank studies for Colombia, Malaysia etc.). Because data related to quantum of taxes paid by a specific group is not available separately in most of the countries especially in developing country. Hence, the next alternative method used in most of the studies is identifying the beneficiaries of educational expenditure according to income and social group.

This method has been used in most of the studies mentioned earlier with a presumption that the expenditure on education made by the government in a particular year accrues the benefit in the same year and expenditure made by the government is equal to the benefits received by the people. The present study has also been undertaken with this presumption. Apart from this, the household survey has given data related to the private cost of education and government assistance received by each student in the household. The study of this nature has been considered as an improvement over the previous studies and an empirical model is also constructed to examine the pattern of government expenditure on education in Coimbatore District using per capita government expenditure on education.