CHAPTER - I

INTRODUCTION

1.1 Economic Value of Education - National and individual.

Empirical studies on economic development in various countries during the last three decades have significantly demonstrated that human resource development is a prerequisite for the economic development of a nation. These studies established further that mere materialistic approach to economic development is insufficient.

The central theme of analytical work by economists viz., Schultz 1963, Becker 1964, Denison 1969, and Blaug 1976 and a host of others, pertains to the assessment of economic value of education and its impact on economic growth. They uncovered the existence of significant positive relationship between level of investment on education and economic growth. The World Bank document of 1994 also brings out that investment in Higher Education contributed to increase in labour productivity, and higher economic growth especially in developing countries.

A study by Ansari (1986) in India on the correlation between literacy level and per capita state domestic product reveals a significant positive relationship. The government of India also has realized the importance of education as an instrument of national development. The National Education
Policy of 1986, of Government of India has observed that "In sum, education is a unique investment in present and the future".

Though Schultz's emphasis on human capital and economic growth was taken note off, studies by Mincer 1974, Psacharopoulos 1985, Lucas 1988, Murchy and Tamura 1990 and Backer 1993, with formal models of growth, placed the subject matter of economics of education on sound footing and created such an impact which can be described as "the human investment revolution in economic thought".

As early as during the 1960's economists tried to apply the concept of investment on human beings. The logic of this application centered around the idea that people spend on themselves in diverse ways not only for the sake of present but also for the sake of future pecuniary and non-pecuniary returns.

In course of time, Human Capital approach has gained its momentum, significance and wider acceptance among economists, educational administrators and policy makers. The subject matter and scope of applications of economic principles in the field of education has been enlarged widely and developed gradually into a separate body of knowledge known as "Economics of Education", and also widened the scope of educational research. Off late, issues like individual's investment decision on education, management of demand for education,
government financing of education and relevance of education to labor market have added new dimensions in the subject matter of economics of education. Of these issues, the demand for education, in particular higher education and its determinants have become an attractive area of research. For a quite long time, educational economists have not given much attention on to study of demand for education. The analysis of interaction between education and labor market has contributed to the prominence of analysis of demand for education.

Such a keen interest by economists is due to the recognition of the fact that knowledge on the dynamics of individual demand and the influencing of factors can contribute to educational planning best in three ways namely (i) alternative financing of Higher education can be compared, only with knowledge of price/cost sensitivity of students (ii) policy makers while resorting to some form of manpower planning can take into consideration of individual demand (iii) identification and quantification of factors influencing the demand for education would help to improve enrollment forecasting which is necessary for educational planning.

1.2 Individual Demand for Education

The traditional view of economists was that education was demanded for consumption and depended on given taste of
individuals and cost of education. However, the human capital approach radically departed from the consumption aspect and brought in the concept of investment on education and established that demand for education is responsive to variations in private costs and earnings associated with additional years of schooling. On this basis, it was hypothesized that it is possible to predict total enrollment at various stages of education and more ambitious, enrollment in specific fields in Higher education. It is widely shared that students make careful assessment of future alternative earnings pattern before choosing the type of education.

Studies on demand for education can be grouped broadly into two categories viz, (i) aggregate demand expressed normally in terms of enrollment, at macro level and (ii) individual demand. Theoretical and analytical difficulties in estimating and projecting overall demand for a stage of educational process by a measure of enrollment in higher education, has forced economists to lay emphasis on individual demand analysis, which forms the basis for aggregate analysis. Enrollments are poor indicators of the actual demand. Demand for university places may vastly exceed enrollment because the educational system can not offer as many places as demanded by students.
As aggregate analysis misses vital facts and represent only the average behavior of the variable taken for the study and may result in loss of traits of individual units. Therefore, analysis of individual unit's behavior and its interaction with other units gained prominence. Further, while analyzing overall enrollment it is very essential to take note of the behavior of decision makers namely students, institutions and governments.

1.3 Demand for Education: - The Human Capital Approach

The essence of any capital is that costs are borne now in the expectation of future returns. Hence the term "Human capital". Human Capital represents stock of skills and productive abilities - investments in man - from which income streams flow or can flow. The Human Capital approach is founded on the rational economic behavior of individuals. It postulates a positive and significant relationship between the level of investment on education and the expected earnings. An individual would demand education and invest on it to the extent where the expected life time earnings are maximized with respect to cost. The relationship between investment on education and expected earnings is explained as follows.

| Investment on education | Creates productive skills in the individual | These skills are hired in the labour market | Hiring of skills result in earnings determined by marginal productivity |
When the individuals invest on themselves, they acquire productive skills which are hirable in the labour market. The labour market supply and demand conditions are guided by marginal productivity of labor. The human capital theory of labour market is called as wage competition model, according to which when the supply of educated labour exceeds the demand, wages will fall and vice versa. However, over a period of time, equilibrium condition will occur wherein there will be no unemployment of educated youth. Possessing of more skills which are specialized by an individual will result in more earnings compared to another individual with less skills. If individuals make curricular decisions to maximize their income streams, one can expect as per human capital theory that their decisions will be functionally related to expected private cost-benefit ratio. Thus, one is led by theory to assume that individuals compare the expected alternative lifetime earnings streams from various courses of study and choose the course with the highest expected rate of return.

The institutional implication of human capital theory is that the educational system is expected to be flexible in expanding the supply of educational services sufficiently to accommodate the individual demand. Thus, the educational investment
decision of the individual is not in an abstract condition, rather in an economy with flexible educational system.

1.4 Higher Educational System and Demand for Education

Higher education has multiple tasks like nation building, training of high level man power, meeting the needs of the individuals and conducting research and development. One way of judging its external efficiency is to examine its capacity to cater to the needs of individuals demand for education with reference to changing conditions in the labour market. More specifically external efficiency may be measured in-terms of length of time it takes for a graduate to find a job with a good expected earnings The task of meeting the requirements of individuals is called the adjustment function of Educational Planning (Psacharopoulos 1985). In most of the developing countries, including India, the present higher education system is rigid, hierarchically stratified and highly compartmentalized. It caters to mainly the upper middle class and rich sections of the society, denying accessibility to weaker sections. The rigidity creates lag in the provision of right type of educational services both quantitatively and qualitatively Due to this lag it may be probable that the educational services offered may be obsolete or not wanted by the labour market resulting in unemployment problem.
1.5 Estimation of Demand for Education

If an educational system is to be efficient in catering to the needs of the individuals, it requires proper planning especially on the number of places of different stages of education and the requirement of finance. Traditionally, educational planning is carried out through manpower planning using programming models to estimate the requirements of various types of educational skills by various sectors of the economy at a given period of time. Once the various skills requirement are estimated, it is possible to calculate the demand for places in educational institutions. Demand for places may be derived from the production activity of the economy.

Due to conceptual, measurement and unrealistic assumptions in estimating the actual requirements of various skills in relation to the needs of various sectors of the economy, manpower planning has become ineffective tool for proper educational planning. Absence of synchronization of educational system with corporate needs may result in a mismatch between supply of and demand for various skills. Ahamed and Blaug 1973 (page 15) have criticized the methodology of manpower forecasting for the fixed coefficient approach which does not allow for substitution between factor inputs and also for ignoring the role of relative wages in labour supply. Further, it is extremely difficult
to estimate labour requirements in each sector due to technological change. The manpower requirement approach is essentially related to labour demand theory. The supply of skills is assumed to be exogenous. It does not touch the generation of skills and the rational calculus of individuals on what kind of educational levels or courses to follow. There is no link between wages and number of persons employed, in this approach.

In India, Shri Praksh 1976 and Burgess et al 1968 estimated manpower requirements on the basis of a given rate and pattern of future growth of economy and also determined the requirement of personnel with different types of education. However, these studies overestimated the growth of various sectors and thus also overestimated the requirement of persons with different educational levels. The mismatch between educational planning and manpower planning lead to mis-employment or unemployment as revealed by a study by the Institute of Applied Manpower Research (India) 1992.

A significant study by OECD 1983 revealed that demand for higher education based on manpower forecasting had not yielded expected results and recommended social demand approach as it rests more on demographic projections i.e. school age population, transition ratios etc
Generally, social demand for education is taken as an aggregation of series of private investment decisions. Therefore understanding of individual's educational choice behavior and its determinants may reveal the directional changes in the demand for places in higher education and helpful to the planners to achieve a major objective of higher education i.e. meeting the requirements of the individuals. The social demand approach (Robbins Report 1963) lays emphasis that higher education should be made available to all those who are qualified and wish to enroll to such subjects of study. Will not such a proposition lead to supply and demand for labour distortions and small investment by individuals? The social demand approach hopes that such distortions and small investments may not occur over a period of time since the educational investment decision by the individual is based on rationality. The individual makes an educational choice decision only after taking into consideration of labour market signals and educational institution's supply constraints.

For instance, in the choice of subject of study in higher education, an individual is expected to choose a course that would provide skills which are required in the labour market. But then there would arise a problem of thinking alike and result in excess demand for certain courses. This problem is very evident in the demand for professional courses. It has been
universally seen that students' preferences are towards professional courses like medicine and engineering, as these courses create occupation specific skills. This problem of excess demand for certain subjects, arising out of the policy of catering to the individual demand, will be contained as the decision of supply rests with the public authorities as to how to manage places to be made available. This does not mean that public authorities are not considering the demand of the individuals but they can not satisfy all the individuals demand due to financial constraint, existing educational capacity and without calculating the manpower requirements of the economy.

Hence it is not the intention of this study to state that social demand approach alone should be considered, rather both approaches are essential for a proper educational planning and estimation of skills requirement and corresponding educational requirements. Social demand approach should be complementary to manpower planning rather than a substitute. Some sort of blending could be helpful to efficient educational planning. It may also be emphasized here that policy makers should not only estimate manpower requirement but also take into consideration of individuals pattern of demand.
1.6 Problem Setting

The problem of higher education in India is not only a problem of numbers, it is a problem of quality, problem of relevance, problem of matching educational needs with the needs of the economy. Some of these problems stem due to neglect of various aspects of individual demand.

In developed countries like the USA, UK and France the growth of enrollment in Higher Education during 1960's and early 1970's though was impressive, it started falling thereafter and appear to stagnate presently. Contrary to this, enrollment in Higher education in India was rapid. There is a 8.6% annual growth rate in student population in higher education between 1950-51 and 1988-89. At the time of independence there were 17 universities, 500 colleges, 27000 teachers and 3 lakh students. In 1997 the number of Universities rose to 234, colleges to 8650, teachers to 375000 and students to 6.5 million. By the end of 2000 AD it is estimated that annual rate would be 4.5%. Evidence of excess demand for University places coupled with unemployment of educated graduates may not prove one way or the other about individuals rational educational choice, especially in arts and science courses. Does this mean that students choice decision is not rational? Why does students seek Higher education without regard to career prospects? It
may not be always so. As long as the rate of return remains fairly high even for arts and science courses, the excess demand would continue. It is assumed that the behavior of the students is still rational.

A quite a number of studies on rate of return for higher education in India reveals that in spite of dim employment prospects students enroll in traditional subjects because the rate of return still seems to be high. Partly this may be true because of subsidization of cost by Government. The behavior of the student may be interpreted from a different angle. As modern sector employment is becoming scare and unemployment rates are raising, the individuals have to either settle with a job for which he is overqualified or recourse to more education to avoid the agony of unemployment.

Another dimension of Indian Higher education is that it is highly compartmentalized with limited choice options for students and not synchronized with corporate needs. Data on course wise enrollment in India reveals (as on 1992-93) that nearly 81% of the students enroll in arts, humanities and science courses and 2.3% in education, 4.6% in engineering and technology, 4.6% in medicine, 1.3% in agriculture and 0.3% in veterinary sciences. The proportion of enrollment of each course in the overall enrollment has remained almost static for
the last 30 years or so. The same trend is also noticed in the Union Territory of Pondicherry until 1990.

The enrollment pattern in India is contrary to the labour market requirement. A study by the Department of Science and Technology 1989, of Government of India presents a significant imbalance in specific areas of occupation. There exists shortage of manpower relating to agriculture and veterinary scientists, engineers and technologists especially in the areas of communication, food processing, computer science engineering and medical and para-medical. A shortage of 15% with reference to demand is observed in case of veterinary scientists and this shortage is expected to have increased by 9% by 1995-96 and further to 18% by the turn of the century. A balance of supply and demand in engineering may occur by the turn of the century. In the field of medical manpower, the shortage of doctor was 18% in 1980-81 and it was expected to have increased to 20% by 1990-91 and rate of increase would be only at 12% by the end of this century. The acute shortage will be of numbers. It would go up to 50% by 2000 AD. Substantial shortage is expected in case of Health educators, lab technicians, midwives and Health works.

The pattern of subject wise enrollment in higher education in India is towards traditional subjects rather than technical and
vocational subjects, whereas the labour market requirements are towards technical manpower. Why this kind of paradox exists?. The fault lies partly with the educational system for not providing opportunities to students to enroll in technical subjects.

A study by Mark Blaug 1976 about educated unemployment in India reveals that the technical and medical education in India was deliberately restricted and general education was allowed to grow, in view of less financial requirement and easy way to accommodate the students demand for Higher Education. Attitudinal surveys of students would reveal that every second Indian student would like to study medicine or engineering, probably because of employment prospects. The preference of students for professional courses still continues. Does this mean that students are more guided by employment prospects in choosing a course?

Generally it is expected that any organization to survive, should provide efficient services and responsive to clientele. The individual buyer is at liberty to shift from one producer to another, when he is dissatisfied with a product or change the product even. The shift signals of the buyer provides clues on demand pattern. Whereas in Higher Education in India, the responsiveness to the changes in demand pattern of students is poor and sluggish. Lack of competition between educational
Institutions to provide education has lead to indifference to students' demand for various courses. The student has very limited choice of courses. Not only that, he has to compete with others. Even if he does not get the choice of his own, he cannot afford to dropout as it is a matter of life of the individual.

Realizing the need to cater to the needs of students, the New Educational Policy of Government of India 1986 had emphasized that curriculum should be developed in tune with the requirement of the economy and the aspirations of the students. The University Grants Commission, India in its action plan for the IX Five Year Plan period, would concentrate on the following issues:

(a) introduction of new subjects with application orientation.
(b) Vocationalization of subjects.
(c) Search for new areas of linkage between education and employment.

Therefore it is imperative that higher educational demand has to be at least regulated, especially on two counts. First, to avoid excess supply of places in a course for which there is lack of interest from the students and to offer courses that would create skills required by the economy especially in the present context of liberalization of Indian economy. Second, to avoid waste in higher education or mall investment both by the
government and individuals. The regulation of demand to cater to the requirements of the economy and also the needs of individuals, though looks apparently simple, it is not so in reality. Any measure taken to reform the higher education system must take the form of altering the terms on which private decisions are made. Indeed educational planning in India can be considerably improved merely by paying due attention to the economic benefits of education to the individuals, even when private rates of return are not actually calculated. Therefore it is necessary to study the students educational choice behavior and its influencing factors for a better understanding of demand for higher education.

Research studies have attempted to analyze the student's choice behavior and the related influencing factors only in a open type higher education. Empirical studies in developed countries have confirmed the hypothesis of human capital approach that individuals educational decision is based on expected earnings with a given level of cost. The demand for higher education may be a positive function of expected earnings and a negative function of costs. But from this, it does not follow that choice of a subject is likewise a matter of expected earnings and cost, especially in a rigid educational system. Employment prospects which is considered as an intermediary factor or variable in the human capital model, may
surface as the dominant motivating factor in the choice of a course. Therefore more research is needed to identify the economic motives of choice, and to find out answers to the following specific questions:

(1) Is the behavior of the individuals in choosing a course rational in a rigid educational system with limited range of choice on the one hand and dim job prospects in the labour market on the other hand?

(2) What are the guiding factors of choice of a course at college? Can we identify and statistically estimate their influence?

(3) Do economic motives like expected earnings and employment prospects play a dominant role in a restricted choice situation? If so is it possible to rank the economic motives in the order of importance attached by the students?

1.7 Objectives of the Study

The broad aim of this study is to extend the application of human capital theory in the horizontal educational choice decision i.e choice of course of individuals at college Especially in an educational environment with limited choice. The following are the specific objectives:

(1) to trace out the pattern of individual demand for college courses in Union Territory of Pondicherry, India,
(2) to identify and assess quantitatively the factors that influence the choice of courses,
(3) to estimate the extent of influence of economic motives in the choice of courses,
(4) to measure quantitatively through a statistical model, the nature and extent of influence of family background, social and individual ability factors on the choice of a course,
(5) to assess how far the individual's decision is rational as per human capital model in a educational system where choices are constrained,
(6) to examine whether the students assign priority to any economic motive with reference to family background factors, while selecting a course.

1.8 Hypothesis

This study, based on apriori conclusion of studies by Economists in various countries and also on the observations on current status of higher education and individual demand for courses in India, proposes the following propositions, to be tested statistically.

(1) The private demand for a particular course is least influenced by expected earnings and therefore it is
postulated that the co-efficient of expected earnings in the model is zero.

(2) The influence of cost of a course is insignificant and inelastic.

(3) The expected job opportunity is the significant influencing factor in the choice of a course.

(4) Students ability quantified in terms of marks and social status (i.e. caste) are the basic factors which influence the choice of a course.

(5) Parents and students have short horizons with respect to economic benefits in choosing a course rather than life-long earnings.

(6) The relative influence of expected earnings and future job opportunity depends on family background factors.

(7) Family background factors do not significantly influence the choice of a course.

(8) The level of HSC marks obtained by students is governed by the family background factors.

1.9 Scope of the Study

As the study of the subject matter of demand for education at different stages of education is too wide, this study restricts the analysis only to Higher Education that too only at graduate level as the motives of students in investing in education is more pronounced and explicit compared to primary and secondary levels. Children are legally to attend school.
compulsory up to the age of 14 years. The decision to continue in the educational process may not be governed by a set of motives rather may be by the family background factors. Whereas, when a student completes Higher Secondary and decides to attend college, he has to decide what type of course he should choose and in which college.

This study further narrows down its analysis to individual demand for college courses rather than on aggregate demand. The enrollment analysis at macro level/aggregate level and estimation and projection of demand on that basis will only under estimate/over estimate the demand. Number of applications received from the individuals or choice expressed in relation to actual seats available only can reflect the actual demand. Further aggregate analysis of enrollment in each course may not bring forth the dynamics of individual choice, thereby may miss vital factors in the analysis of demand for education. Therefore, this study restricts its analysis to individual’s choice of courses in colleges and its determinants with the help of appropriate models.
1.10 Necessity and Usefulness

There are hardly a few studies on the choice behavior of students at degree level in India. In the context of new economic policy of liberalization, the priorities in the education sector is also changing towards user preferences. To understand such changes a study on individual demand is useful.

The private demand for education, course in particular and its governing economic theory is not a much concentrated area of research from the angle of application of quantitative techniques. That is why Shri Prakash (1992) has observed that the theory of educational Demand is among the emptier boxes of econometrics. Economists like Psacharopoulos and Soumelis 1979 had felt that further research is needed to examine the responsiveness of specific course choice to variations in occupational earnings. A study of student's demand for courses in a educational system with limited choices may lead to better understanding of the dynamics of individual demand behavior. By application of statistical tools it is possible to estimate the probability of a student demanding popular course with a given set of both endogenous and exogenous variables.
Quantitative analysis on individual demand for education would be much use to education planners. A study of this kind may through light as how to cater to the needs of individual educational requirements and how to reduce the gap between supply and demand for places in higher education. Further a study of this kind would bring out the socioeconomic background of the students which may assist in designing policies towards attaining equity in higher education. Therefore this study has a policy forming motive also

1.11 Area and Period of Study

This study confines to Pondicherry region of Union Territory of Pondicherry, as most of the professional colleges like Engineering, Veterinary and Dental, in addition to few colleges of arts and science are located in Pondicherry. This study is based on cross section data on the students who made choice of various courses in various colleges in Pondicherry during the academic year 1994-95. The data have been collected through a questionnaire method and data analysed with logit model.

1.12 Limitations of the Study

This study is only a micro level study with a cross section analysis. Therefore the inferences should be taken as tentative. It would have been ideal to collect data from the students each year at least for a total of 10 years. However due to constraints, data was collected for only one year. The analysis is based on
the student's information. There is a possibility that students might have understated their family income, and overstated their expected earnings or job opportunity. This study analysis earnings as only initial salary and does not workout the life time earnings. However this study may provide a lead for other researchers to take up research on a wider scale and go deeper into the subject matter of private demand for courses in Higher education.
CHAPTER - II

2. Review of studies, concepts and methodology

2.1 The need for review

In order to have a better understanding of individual demand for education, it is essential to gloss over the various studies by economists over a period of time. Such a review of studies both at international and national level would provide a comprehensive view as to what has been done in the area of demand for education and what could be the areas for further research. Empirical studies, provide a direct motivation to carry out further research in this area.

2.2 Research trend in the area of demand for education

2.2.1 Consumption approach

During the pre 1960s period, the demand for education was considered in a traditional way like the demand for any other good. The Hypothesis was that the demand for education is a function of cost, alternatively called price, and family income. Some economists attempted to estimate demand for education in USA by regressing household income and direct cost of education. This kind of approach was called as "Consumption model" During the 1960s and 70s economists analyzed the effect of family background variables and ability of the individual expressed in terms of scores obtained in the qualifying exam in addition to direct cost and family income, on