CHAPTER I:

Introduction

In this introductory chapter our main objective is to highlight the problem of our study in a theoretical framework.

We also focus here the methodology followed in examining the problem and present the chapterwise plan of the study.

Problem and scope of the study:

Economics of education is relatively a new branch of study. It views expenditure on education as investment expenditure in the sense that it raises efficiency of individuals as productive agents in the economy. Individuals with more education have embodied more human capital in themselves. In the labour market their Value of Marginal Product (VMP) to employers is higher than that of the less educated persons. In a perfectly competitive market persons are rewarded on the basis of their VMP. So the market earning power, influenced by investment in education, of the more educated persons is more than that of the less highly educated persons.

In the theory of human capital, individuals or households are assumed to behave rationally. Their decision to invest in education is based on maximising expected (marginal) return from it.

The empirical studies that came up in the wake of the belated realisation of expenditure on education as investment
expenditure, fortunately or unfortunately, concentrated on their effect on market production alone. What was missing in these studies was the effect of education on non-market (household) production as against market production. It is argued that since education raises efficiency in market production, it should also raise efficiency in non-market production since human capital formed through investment in education is embodied in the same individual.

We need a theoretical framework to study the effect of education on non-market production. Why and how education affects consumer behaviour is a basic question that can be raised on the basis of new consumption theoretical framework. This act of omission and commission was brought to light particularly when the new approach to consumption theory developed by Becker caught the attention of researchers.

In the paragraphs to follow we outline Becker's new approach to consumption theory.

New Approach to consumption Theory

The traditional theory of consumption which explains utility maximisation fails to incorporate the relevance of non-market working time (or non-working time). This lacuna is overcome by Becker who made a novel contribution in this regard. Becker argues that in a broad sense households are both firms and buyers, or producers and consumers. By combining non-working time with purchased goods, they produce more basic commodities or
activities like sleeping, seeing a cinema, etc. Sleeping activity (also called commodity) is produced not only by the purchased inputs (goods) like bed, pillow, bed sheets but also by the time spent on that activity. To produce the activity of seeing a cinema not only a theatre, film, etc. are used but also the time spent by the movie-goer. As in the case of a firm in the market economy, which produces goods by combining labour and capital, a household (firm) combines purchased goods (capital), with non-working time (labour) to produce a commodity like sleeping, reading books, cycling exercise, mouth cleaning or preparation of home food.

In Becker's approach, the full cost of non-market activities is equal to the market price of the purchased goods plus the opportunity cost of time devoted to these activities. The approach thus recognises the importance of cost of time in taking decisions about non-market activities. A household uses some of its time directly in producing commodities (in the household) and some of its time indirectly by first selling the time (or the labour services) in the market place and then using the income earned to buy market goods and services. These market goods and services are latter combined with households' non-market time to produce commodities.

In this approach, demand for market goods is derived demand derived from the demand for commodities produced in the households. The approach treats a household as an organisation
composed of members of the family who produce many different things. In technical jargon, it may be viewed as a multi-product firm producing certain commodities like good-health, physical exercise, nutrition, inter-city visit and child care. For example, good health by resting, physical exercise by bicycling, nutrition by eating, inter-city visit by travelling.

Lancaster assumes that market goods are inputs, outputs are characteristics and their utility is a function of bundle of characteristics of goods. His approach is based on the analogies of consumption activities with production activity, market goods with factors of production as inputs and characteristics with commodity output.

Further, in order to analyse non-market activities and behaviour of the households with different levels of schooling, Beoker, Michael have made significant contributions. The essence of their approach is that human capital formed through investment in education affects capabilities of a person as a consumer and raises productivity in activities outside the market. The production function in the non-market sector is defined as follows:

\[ Z_i = f(X_i, T_i) \]

Where, \( Z_i \) is the non-market commodity, \( X_i \) is the market good or service and \( T_i \) is the time of the family members allocated to production of \( Z_i \).
The model treats demand for market goods as a derived demand and not a direct demand. The purchased goods are not of direct utility to the consumer but are rather inputs to produce commodities. Based on the model, we suggest that consumption involves a production process in the non-market segment and human capital may be viewed as affecting the efficiency of that process. Education raises the non-market production with a given amount of time and money, and thereby increases the real income of the households in terms of commodities produced.

It is to be noted that the products of a household need not be physical. In each activity in the household, its members produce some satisfaction such as the production of good health by time and goods used in sleeping or a desirable appearance by time and barber’s services in grooming. In the same framework, the effects of education can also be analysed. It can be easily argued that education affects the capacity of a household to transform the purchased goods and time into commodities. In other words, education affects efficiency with which the commodities are produced.

It is predicted that education raises the proficiency of the time input used in the non-market production. Thus, households composed of more educated members but no more income will have tendency to shift their expenditures on the consumption in the same manner as households with more money income but no more education.
Life - Cycle work and Consumption patterns :

Since in the production function approach of consumption theory, an individual is both a producer and a consumer, producing commodities outside the market by combining his available non-market time and goods produced in the market, it would be interesting to throw some light on the question of life-cycle variation in the price of time. This governs a person's behaviour to allocate time between market and non-market activities and the timing of investment in human capital. The life-cycle variation in the price of time is governed by what happens to VMP of persons during their life time.

Investment in education raises the value of VMP of a person. Assuming that human capital does not depreciate with age, then VMP remains constant. If investment in on the job training is undertaken, the VMP increases. It levels off when that investment ceases some time in the middle of the productive life span, afterwards it remains constant if nothing else changes. Age casts its influence on productivity and it starts declining. However, in a growing economy general productivity of labour also is rising (i.e. VMP). The net effect of these tendencies of VMP behaviour may be that, over a fairly long period of one's productive life span VMP (market earning power) is either rising or not declining at all or relatively late. "Given the present value of life time earnings, it pays to allocate market work more intensively towards years when the price of 'leisure' time is highest". That means the price of time taken out from market
production to non-market production is quite high (cost of non-market time is high). Persons will use their market time more intensively when the price of non-market time is highest. When they are young, a tendency among young persons is to allocate more time to market activities than to non-market activities than when they are old. Or alternatively they have to be judicious in allocating their time between market and non-market activities so that both the market output and non-market output can be produced efficiently - one maximising earning outside the market and the other maximising utility in home production.

As seen earlier, this also influences the timing of investment in human capital. It is profitable to invest in human capital when persons are young. The reason is their VMP for a longer period will have a tendency to increase. And so one can derive maximum benefit (maximum return) when the pay off period is longer.

Effects of Education on Savings and Investment:
Some theoretical predictions regarding the effect of education on savings behaviour are made by Solmon.

It is predicted that "those with more education, ceteris paribus, will tend to save more, however savings are defined".

In the first instance the relation between schooling and savings behaviour is examined in terms of time preference.

Saving is a function of time preference, which is subjective,
refers to the degree of desirability of present goods over that of future goods. Those who attach more importance to present goods, have high time preference and save less. These people are less likely to defer current consumption to future periods. Naturally then, people who save more have low time preference. Since more educated individuals are assumed to exhibit the tendency of saving more, other things being equal, their time preference is bound to be low. However, it is argued that if people with low time preference choose to have more schooling, then the educated individuals are likely to be large savers even without education because of their inherent low time preference. This raises two questions: First, what are the factors influencing time preference? And second, to what extent are these factors influenced by education?

Some of the personal characteristics influencing time preferences and hence savings provided by Fisher namely foresight, self-control, a habit of thrift, concern over the uncertainty of life, concern for heirs, and concern for fashion and fads are, in turn, influenced by education. In fact, the actual process of education itself might be viewed as affecting the tastes and attitudes of students in regard to characteristics influencing savings behaviour which persist during post-school years also. In this sense, low time preference does not seem to be inherent but is very much influenced by education. The more educated may save more as they may be better able to realise the worth of future goods. They may, on the other hand, have high rate of
time preference because of the prospect of increasing comforts in future on account of relatively steeply rising earnings stream associated with education.

Time preference is not the only factor affecting education-savings relationship. If better-educated households differ from less well educated households in regard to age, family size and location, differences in these factors might cause the observed differences in saving among education groups.

If better-educated people are able to select a more efficient portfolio because of their better understanding and because of their greater risk preferences, they are likely to obtain a higher return from this savings which ultimately affects the total amount saved. Relatively higher rates of return to saving should have a positive substitution effect (more income goes into savings). However, it is possible that as returns rise, consumption rather than saving may rise.

Now, if as a consequence of better analytical ability of more educated individuals, their savings grow larger than the savings of less-educated people, then education is said to have increased one's efficiency in saving.

Solmon thinks that "the argument that education increases one's efficiency in saving is analogous to Becker's argument that education improves one's efficiency in consumption".

As incomes rise with education, the opportunity cost of time
also rises. In order to derive greatest possible utility or satisfaction from household production, a more educated family will use more goods and less time other things being equal. Thus, both consumption (C) and income (Y) rise with education. Whether C/Y rises with schooling depends upon the relative change in C and Y with education. This relative change in C and Y, in turn, depends upon the relative efficiency of the better educated in three activities—saving, consumption and work. Provision for consumption in future implies a choice between (a) consumption to be foregone currently or current saving and (b) working more in the future. The more educated person is at advantage relative to the less-educated person in making such a choice. The former, it is argued, will be able to make his savings grow larger than the latter allowing investments to grow for subsequent conversion to consumption goods. Further, since the more educated expect earning streams relatively to be more steeply rising, out of any given work time in future periods, the more educated will be able to purchase more consumer goods than the less educated. Thus, the more educated are presumed to be more efficient than the less educated.

Solmon has also examined the consumption and savings decisions in the framework of permanent income hypothesis of Friedman. Permanent income hypothesis stresses that consumption is determined by long-term considerations. Consumption should be related to some longer-run measure of income or wealth. Both income and consumption have permanent and transitory components.
Transitory components are unpredictable, so the true consumption-income relation is assumed to lie between permanent consumption and permanent income according to the function, $C_{pt} = k \cdot Y_{pt}$ where $C_{pt}$ and $Y_{pt}$ are respectively permanent consumption and permanent income at time $t$. The coefficient $k$ is the marginal propensity to consume permanent income. Since individuals are adaptable, at some point a change in measured income will have an effect on permanent income. Thus, change in consumption as a result of an observed change in measured income (MPC) depends not only upon $k$, i.e., the fraction of permanent income devoted to consumption but also upon the fraction of an observed change in income which is also a change in permanent income ($dY_{p}/dY$).

$k$ cannot be estimated directly as permanent income is not observed. We can instead estimate $b$, i.e., the MPC out of measured income. What is the relationship between $b$ and $k$? $b/k = dY_{p}/dY$, where $dY_{p}/dY$ is a function of discount rate. Also $b/k = Pr$, where $Pr$ is the ratio of variance of permanent income to the variance of total income. It is possible that $k$ itself may vary with schooling or adjustment coefficients ($dY_{p}/dY$ and $Pr$) may vary with education, $k$ remaining similar. How are $dY_{p}/dY$ and $Pr$ affected by education? Change in $dY_{p}/dY$ may be due to changes in individual's discount rate or due to changes in the coefficient of expectations $\beta$ (i.e. the change in future-period income expected when current-period income changes). Then the question we must ask is: How do $r$ and $\beta$ vary with schooling? Further, Friedman suggests that $k$ is a function of the ratio of
wealth to income, the degree of uncertainty contemplated, the rate of interest, and taste factors like age, family size, and location. Again, Pr is very much a function of the ratio of human to non-human wealth as well of the nature of a person's employment.

Solmon, after examining theoretically and empirically the effect of education on some of these factors influencing consumption and saving decisions, has concluded that "this general scanning of existing theory strongly suggests that a positive relationship ought to be observed between education and saving". In the concerned chapter we have elaborated reasons for the observed positive relationship between education and savings.

In the light of these predictions, on the basis of information collected from the sampled households, in this work we have ventured to examine the effect of education on savings and investment behaviours. For this purpose, we have examined their actual saving and investment behaviours. We have also tried to explore how far their actual behaviour corresponds to their planned saving and investment behaviour on the basis of their responses to questions pertaining to the motives of savings and to the considerations or factors in their investment preferences.

II

Objectives, Issues and Hypotheses:

Our main objective in pursuing this work, as is made clear, is to
study the effect of education on efficiency in consumption, saving and investment in terms of the theoretical framework explained above. Does education raise the efficiency of households in non-market production in the same manner similar to that in market production? Is consumption, saving and investment behaviour, of more educated households really efficient relative to less educated households? These two are the main questions which we have studied empirically with the help of information collected from the sampled households.

If the answers to the above questions are positive, then the total return from investment in education may be higher than that estimated only on the basis of market earnings. This additional return in the form of non-market production may not necessarily be only private. It may benefit society as a whole also. E.F. Denision observed that since education—both public and private—is financed mainly out of current consumption funds, the total volume of investment in the economy increases. Whether return from education is low relative to that of physical capital is not very important as the fact that education by not making inroads into the availability of funds to other sectors of the economy is making positive net contribution to economic growth. Similarly, the non-market production which education is expected to produce efficiently may also be contributing to economic growth in a broader sense.

Further, if households' investment portfolio is going to be
affected by their educational attainment, in the sense that they are more willing to take risks; then, by preferring investment in stocks they are providing the capital to the private sector. It is not that they are not concerned about safety of their investment. They are better informed about tax concessions, deductions and so they may invest in government bonds and securities which may provide necessary savings to the government required for financing economic growth. More educated households may be better investors deriving maximum income from given savings than the less educated ones. In this context issue such as do we observe systematically different savings and investment behaviours among households with different educational attainments? The empirical examination of this issue will bring to light the policy related questions namely which is the cut-off level of educational attainment that distinguishes consumption, saving and investment behaviours of more educated from less educated households. This question is particularly relevant in a country like ours where the base of education has so far remained weak and wide spread illiteracy prevails. In a climate of rapid technological change, the minimum critical level of average education the population of the country should attain becomes relevant. Our study indirectly may throw some light on these issues also.

Hypotheses

1) Changes in consumption patterns are attributed to differences
Similarly, it is hypothesized that differences in levels of education are also systematically related to changes in consumption patterns. The effect of education on consumption patterns is not erratic or random.

2) Households' consumer behaviour is directly influenced by the level of formal schooling independently of its effect on money income.

3) Thus, efficiency of households as non-market producers is directly related to the level of formal schooling.

4) Volume of savings and level of schooling are positively related.

5) More educated households, out of given volume of saving or investment, are likely to earn a higher rate of return than the less educated households.

III
Methodology

The Universe and the sample size:
Dictated largely by convenience, and partly with a view to economising limited individual resources, only one urban area has been chosen, viz, Warangal City to conduct the present empirical study. It is the fifth biggest city in Andhra Pradesh state and the fiftyseventh in India as per 1981 census. The Universe of the study is 38,883 households, consisting of 3.38 lakh population spread over in 25 words. In view of difficulties in
collecting data from a large population, sampling has been inevitable. A sample of 250 households has been taken up for the indepth study. From each one of the 25 wards falling under the jurisdiction of the city municipality, households have been selected with probability proportionality, giving due weightage to each ward according to the number of households in that ward. Further more, through purposive stratified random sampling technique, households within the wards have been identified to canvass the questionnaire. Heads of selected households, who are our respondents were personally contacted during October 1983 to September 1984.

The questionnaire comprises five sections as detailed in the appendix placed at the end of the dissertation. The first section is concerned with general information of the households. Details of annual expenditure on food and non-food are enlisted in Section II. Investment in physical and financial assets are sought to be enquired through Section III. In section IV information on borrowings and lendings appear and the final section contains questions on savings and investment preferences.

Stratification of Households:

We have adopted two norms to classify the households. One, on the basis of income, the sampled households are classified into three groups, viz, below Rs. 10,200 (low); Rs 10,201 to Rs 18,000 (middle); and Rs 18001 and above (high) per annum.
The second norm followed to stratify the households is head's educational attainment. Based on it, six categories are identified, viz. illiterate, elementary, secondary, undergraduate, graduation and post graduation and above. Since education and income are the two principal factors, these two classifications will enable us to study consumption, savings and investment patterns, across income and schooling groups. Their consumption, saving as well as investment behaviour is studied by classifying them by their family size, age, wealth and caste wherever possible.

Tools and Analysis:

The data were processed both manually and feeding to a computer. The processed data were converted into tabular form, to discern trends and to easily understand the implications. Apart from the popular statistical tools of percentages, ratios and indices, other tools, such as coefficient of correlation and multiple regressions through ordinary least square method are used.

Limitations and Constraints

The major limitation of micro sample studies is whether the sample selected is representative of the population or not. Since this study focuses on the consumption, saving and investment behaviour of selected households varying in their schooling attainment, from a city of a state in India, to test the extent of its representativeness of households with the country as a whole. The comparable characteristics chosen are the educational
attainment of the labour force, relationship between education and earnings, expenditure on education as a proportion of total consumption expenditure, per capita daily income, proportion of food and non-food expenditure to total consumption expenditure and the proportion of self-employed to total employment.

As can be seen from Table 1.1 that the educational attainment of labour force in our sample, compares reasonably well with that of the all-India (1981 census) as well with that of West-Godavari district of Andhra Pradesh. The proportion of labour force in our sample with elementary and some college education (under graduates) - respective proportions are 31 percent and 9 percent, tally with that of all India and West-Godavari district. The proportion of labour force with secondary education in our sample of 13 percent is also as high as that of 12 percent for all India. One common feature of the educational attainment of labour force is that when we move from low level to high level of educational attainment the proportion of the labour force by and large falls.

The micro level studies recently conducted in India in the area of Economics of education have clearly shown a positive association between education and earnings (Shah and Srikantiah; and Tilak). As per Table - 1.2, in our sample, the positive association between the level of education and the amount of earnings comes out systematically. The annual earnings increase when we move from a very low level of education, step by step.
<table>
<thead>
<tr>
<th>Level of schooling</th>
<th>All India (1981-census)</th>
<th>Tilak (1977-west Godavari District)</th>
<th>Our sample (1983-84 Warangal City)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterates</td>
<td>59.58</td>
<td>10.14</td>
<td>37.72</td>
</tr>
<tr>
<td>Elementary</td>
<td>31.05</td>
<td>33.13</td>
<td>31.32</td>
</tr>
<tr>
<td>Secondary</td>
<td>12.27</td>
<td>24.84</td>
<td>13.16</td>
</tr>
<tr>
<td>Under Graduation</td>
<td>7.58</td>
<td>9.94</td>
<td>8.83</td>
</tr>
<tr>
<td>Graduation</td>
<td>0.42</td>
<td>12.22</td>
<td>5.49</td>
</tr>
<tr>
<td>Post-Graduation</td>
<td>2.54</td>
<td>8.73</td>
<td>3.49</td>
</tr>
</tbody>
</table>

Note: Number of persons in the labour force in India, Tilak's study and our sample are respectively 244.20 millions, 966 and 804.

Sources: 1. Census of India, 1981  
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterates</td>
<td>1047</td>
<td>4720</td>
<td>3180</td>
</tr>
<tr>
<td>Elementary</td>
<td>3122</td>
<td>8822</td>
<td>8388</td>
</tr>
<tr>
<td>Secondary</td>
<td>4205</td>
<td>8865</td>
<td>11088</td>
</tr>
<tr>
<td>Under Graduation</td>
<td>5319</td>
<td>10237</td>
<td>11376</td>
</tr>
<tr>
<td>Graduation and above</td>
<td>8534</td>
<td>12811</td>
<td>16341</td>
</tr>
<tr>
<td><strong>All</strong></td>
<td><strong>4475</strong></td>
<td><strong>11540</strong></td>
<td><strong>10824</strong></td>
</tr>
</tbody>
</table>

Source: 1. Tilak, Jandhyala B.C.: "The Economics of Inequality in Education," Sage Publications, Delhi, 1987, Table 6.1, P.78  
to the highest level of education. Above noted two studies also reveal the same thing. Thus the positive association between earnings and education shows the extent of representativeness of our sample.

Some other comparable characteristics are expenditure on education as a proportion of total consumption expenditure, per capita daily income, proportion of food and non-food expenditure and the proportion of self-employed to total employment given in the Table 1.3. The Table shows that at all-India level, in 1983-84 the expenditure on education in the total private final consumption expenditure was roughly 3 percent (2.8 percent). In our sample also it was 2.7 percent. Further, the per capita daily income of a household in our sample of Rs. 6.22 which is almost equal to Rs. 6 for the country as a whole. The proportionate distribution of total private final consumption expenditure between food and non-food in India for 1983-84 was 55 percent and 44 percent respectively. In our study the respective distribution is 53 percent and 47 percent respectively. Food at home in urban India accounted for 41 percent of total expenditure whereas in our study it comes to 39 percent. Similarly the proportion of self-employed to total employment of 39 percent compares well with that of 42 percent in our sample.

Some of the tendencies which we notice in our analysis such as shift in consumption from food to non-food either with improvement in income or education, higher marginal propensity to save among high income group households and educated households
Table 1:3  
Comparative Characteristics at Macro and Micro levels  

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Investigator</th>
<th>Year/ Period</th>
<th>India</th>
<th>Our Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Capita Daily Income in India (Rs.)</td>
<td>NAS</td>
<td>1983-84</td>
<td>5.99</td>
<td>6.22</td>
</tr>
<tr>
<td>Expenditure on education as a percentage of total final private consumption expenditure or total consumption expenditure</td>
<td>NAS</td>
<td>1983-84</td>
<td>2.79</td>
<td>2.71</td>
</tr>
<tr>
<td>Proportion of food and non-food expenditure and in total consumption expenditure or private final consumption expenditure (%)</td>
<td>NAS</td>
<td>1983-84</td>
<td>55</td>
<td>53</td>
</tr>
<tr>
<td>Proportion of expenditure on food at home in total consumption expenditure or private final consumption expenditure (%)</td>
<td>NSS</td>
<td>1983</td>
<td>41</td>
<td>39</td>
</tr>
<tr>
<td>Share of self-employed in total employment (%)</td>
<td>PC</td>
<td>VI Plan</td>
<td>38</td>
<td>42</td>
</tr>
</tbody>
</table>

Notes: The abbreviations of NAS, NSS and PC are respectively National Accounts Statistics, National Sample Survey and Planning Commission.
and willingness to take risks among more educated households are also found in any growing economy. These are some of the representative tendencies.

Thus, our sample appears largely to be a representative one. However, we do not claim that the sample is fully representative particularly in an economy of vast size and diversities of various kind.

A. General Plan of the study

The dissertation comprises seven chapters as below. In Chapter II, the basic concepts and terms frequently used in different chapters like income, education, consumption, savings, investment, efficiency etc., are explained. Chapter III through VI constitute the main work of the dissertation.

Chapter III analyses the pattern of consumption. It briefs how human capital formed through education can be fitted into household production function to analyse the impact of education on efficiency in consumption. It classifies households on the basis of income and education and studies differences in the relative shares of food and non-food as well as their individual components. It discusses the models adopted, forms chosen and interprets multiple regression results.

Chapter IV discusses how and why households with varying levels of education behave differently in saving decisions. It presents the saving pattern at macro level before analysing differences in
the volume of savings at micro level by referring to not only income but education and other variables of family size, age, occupation and caste.

Chapter V presents a resume of analytical discussion on the possible ways through which education influences in portfolio selection or investment avenues. It examines variations in the magnitude of assets by income groups by schooling levels, by occupational status and family size. Further, regression results regarding the investment behaviour of different households are discussed. In chapter IV and V, outlined here, we have examined actual savings and investment behaviour of households. On the other hand, chapter VI focuses on the predicted or planned saving and investment behaviour of households by analysing their responses to questions regarding goals of savings and investment preferences.

The final chapter VII summarises important findings and conclusions.
References:
8. Ibid., p. 254.
10. LC Solmon op. cit, p.258
12. L C Solmon op., cit, p.258

