CHAPTER IV

METHODOLOGY

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4.2 METHOD ADOPTED FOR THE STUDY

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4.5 TOOLS AND TECHNIQUES USED

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METHODOLOGY

Methodology is the description of procedures or techniques adopted in the research study. It is the totality of the procedure followed by the investigator to make research study valid and scientific to the extent possible. According to Kothari (2005) research methodology is a way of systematically solving the research problem. It is a science that deals with the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them. In short methodology is the science of methods or principles of procedure.

The success of any investigation depends largely upon the methodology adopted. The machinery of methodology occupies a very important position in all kinds of research. The research cannot perform its function without it, since it is methodology which lays out the way that formal research is to be carried out and outlines the detailed description of the research variable and procedure”. The validity and reliability of the findings depends upon the method adopted and hence methodology occupies a very important place in any type of research.

This chapter presents details related to the methodology and procedure followed in the study.

4.1 DESIGN OF THE STUDY

The study was conducted in three phases. The first phase includes the selection of variables involved in the study and the preparation of tools required to measure them. In the second phase the sample was selected and
Methodology

Data were collected regarding the variables. In third phase the data were analysed by using suitable statistical procedures and conclusions were drawn. The tabular representation of the design of the study is given in the Table 4.1

Table 4.1
Representation of the Design of the Study

<table>
<thead>
<tr>
<th>Phase</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>(a) Selection of Variables</td>
</tr>
<tr>
<td></td>
<td>(b) Preparation of Tools</td>
</tr>
<tr>
<td>Two</td>
<td>(a) Selection of Sample</td>
</tr>
<tr>
<td></td>
<td>(b) Collection of Data</td>
</tr>
<tr>
<td>Three</td>
<td>(a) Analysis of Data</td>
</tr>
<tr>
<td></td>
<td>(b) Drawing of Conclusions</td>
</tr>
</tbody>
</table>

4.2 METHOD ADOPTED FOR THE STUDY

The present investigation is mainly intended to study the relationship between education and Economic Growth of people in Idukki district. At first, a review of the educational and economic progress of the district was made, based on certain widely accepted indicators provided by secondary data. This requires the analysis of data in a historical perspective. The role of education in the Economic Growth of the district has been examined using primary data through household surveys. Hence the attempt was to analyse the educational and economic aspects both at the macro and the micro levels. To conduct such a comprehensive study, selection of method is the most important task. For deciding the methods the method depends upon the
nature of the problem selected and the kind of data necessary for its solution”. Considering these aspects the investigator has opted Historical Method and Normative Survey Method as appropriate for the study.

4.2.1. Historical Method

Historical Method attempts to establish facts so as to arrive at conclusions concerning past events. This is usually accompanied by an interpretation of these events and of their relevance to present circumstances and what might happen in the future. The main purpose of historical research is to arrive at an accurate account of the past so as to gain clearer perspective of the present. This knowledge enables us, at least partially, to predict and control our future existence.

Historical research is based upon reports of observation which cannot be repeated. The historian handles data which are mainly traces of past events in the form of various types of documents, relics, records and artifacts having a direct or indirect impact on the event under study.

This method has great value in the field of educational research because it is necessary to know and understand educational achievements and trends of the past in order to gain perspective on present and future directions. The important purposes and values of historical research are the following.

1. The foremost purpose is to gain a clear perspective of the past and the present.

2. It provides with a greater appreciation of the culture and of the role which education is to play in the progress of society.
3. The most common motive is to arrive at an accurate account of the past.

4. This provides information concerning the effects of certain educational practices and may suggest programmes for future action.

5. It helps in avoiding mistakes of the past.

6. Serial approach makes it easier to recognize and identify significant facts in the existing complex situation.

7. It enables us to understand the dynamics of educational change.

8. It develops understanding of the deep-rooted causes of the present day educational problems.

9. It develops our ability to locate, analyse and appraise historical evidence and to understand the limitations of this evidence.

10. It helps remove educational prejudices, misconceptions, facts and frills.

11. It is a necessary foundation for any educational reform.

12. Only in the light of their origin and growth, can the numerous problems of the present be viewed systematically.

13. It provides an important element in the professional training and equipment of the teachers and educational administrators.

14. It is an ally in the scientific study of education rather than a competitor.
15. It improves respect for sound scholarship and reverence for great teachers.

In the present study the Historical Method was adopted to review the educational and Economic Growth of Idukki district from 1990 onwards. The analysis was made in terms of widely accepted indicators provided by secondary data. The required data are collected from various government documents.

### 4.2.2 The Normative Survey Method

The Normative Survey Method is the most commonly used approach to solve educational problems. It has been widely used in educational research for many years and are continued to be used to gather information about the prevailing conditions: what exists in the present, in the form of conditions, practices, processes, trends, effects, attributes and beliefs (Best and Kahn, 2005). It is followed in studying local as well as state, national and international aspects of education. The word ‘survey’ indicates the gathering of the evidence regarding current conditions. The word ‘normative’ is used because surveys are frequently made for the purpose of ascertaining which is the normal or typical condition and practice. Thus it is concerned with the normal social conditions. It involves interpretation, comparison, measurement, description and generalization, all described towards proper understanding and solution of significant educational problems. In short, it is an organized attempt to analyze, interpret and report the present status of a social institution, group or area.

The important characteristics of Normative Survey are:
1. It is essentially cross-sectional.

2. It gathers data from a large number of cases and collects data from what exists.

3. It involves a clearly defined problem and definite objectives.

4. Surveys may be qualitative or quantitative.

5. It determines the present trends and solves current practical problems.

6. It secures historical perspectives through a series of cross-sectional pictures of similar conditions at different times.

7. It suggests the course of future developments.

8. It helps to fashion many of the tools with which we do research.

9. It contributes to the advancement of knowledge.

10. It provides the background and data from which many more refined laboratory or controlled studies of casual relations are made.

In the present study Survey Method is used to gather educational and economic information regarding the households. Primary data collected through household surveys is used to find out the impact of education on the Economic Growth of people. The present status of education and economic status with respect to individuals and households were analysed in detail using appropriate statistical techniques.
4.3 VARIABLES OF THE STUDY

A concept which can take in different quantitative values is called a variable. The present study attempts to find out the impact of education on the Economic Growth of people in Idukki district. Therefore the study has been designed mainly with two types of variables- Independent Variable and Dependent Variable.

Independent Variable

The independent variable selected for the study is the level of education attained by people. The different levels of education considered in the study are:

1. Lower primary (LP)
2. Upper primary (UP)
3. High school (HS)
4. Certificate Courses
5. Degree/Diploma
6. Post Graduation
7. Research Degree.

Dependent Variable

The dependent variable of the study is Economic Growth, which includes two sub-variables - Earnings of people and Economic Welfare Status (EWS) of households.
Earnings denote the average monthly earnings (in Rupees) of individual members from various sources.

Economic Welfare Status (EWS) of households indicates the present economic condition of the households composed of the following items.

1. Number of members in the household
2. Monthly income of the household
3. Size of landholdings
4. Value of total assets
5. Savings and Liabilities
6. Residential accommodation facilities
7. Household infrastructure
8. Transport and communication
9. Food and clothing
10. Health and sanitation

4.4 SAMPLE SELECTED FOR THE STUDY

Sample is a small representative group of population. A good sample is one which would reproduce the characteristics of the population within great accuracy. Sampling is the process of selecting a sample from the population. The purpose of sampling procedure is to obtain a sample which will reproduce the characteristics of the population with the greatest possible accuracy”. It is pointed out that the decision as to the number of cases and that methods by which they shall be collected, is a crucial one because the
scope for generalization depends on how satisfactory this problem is solved. Hence the problem of proper sampling in terms of propriety of representativeness was considered with all its seriousness.

The sample for the present study consisted of 1500 households selected from Idukki District. As the study is designed to examine the effect of education on the earnings and economic welfare status of households, the investigator took special care to obtain the most representative sample. Moreover, the social economic and geographical diversities in Idukki demand data from all parts of the district and also from various categories of people. Hence it was decided to collect data from households belonging to different socio-economic, cultural and geographical backgrounds. Before going to sampling procedure adopted for the study, it is worthwhile to analyse the basic features of Idukki district.

**4.4.1 PROFILE OF IDUKKI DISTRICT**

Idukki, the second largest district in the state of Kerala was formed on 26 January 1972 as per the government notification No. 54131/C2/71/RD, dated 24 January 1972. The district consists of four Taluks viz., Devikulam, Udumbanchola, Peerumade and Thodupuzha. The total geographical area of the district is 4499 sq. km, which forms about 12.91 per cent of the whole state. It lies between 9° 15’ and 10° 21 of the north latitude and 76° 37’ and 77° 35’ of east longitude. About 96 per cent of the total area of the district is covered by rugged mountains and forests. There is only a strip of middle land of three per cent on the western part of the district. It generates more than 66 per cent of the hydroelectric power of the state, Idukki. Neriyamangalam, Edamalayar and Panniyar are the major hydro-electric
Methodology

Power projects in the district. The district is bounded in the North by Mukundapuram Taluk of Thrissur District and Pollachi and Udumalpet Taluks of Coimbatore District, in the East by Kodaikanal and Uthamapalayam Taluks of Madurai District, in the South by Pathanamthitta Taluk of Pathanamthitta District in the West by Kanjirappilly and Meenachil Taluks of Kottayam District and Muvattupuzha, Kothamangalam and Kunnathunadu Taluks of Ernakulam District. It extends by 115 kms from South to North and 67 kms from East to West.

i. Administrative Setup

For administrative purposes, the district is divided into two Revenue Divisions, with head quarters at Devikulam and Idukki. Devikulam, Udumbanchola and Peerumade Taluks come under Devikulam Division and Thodupuzha Taluk under Idukki Division. There are 64 Revenue Villages and 8 Blocks in the district. There is only one Municipality and 52 Panchayaths in the district with 750 wards.

ii. Population

According to the 2001 census, population of the district is 1129221 which is only 3.7 per cent of the State. There are 566682 males and 562539 females. Scheduled Caste and Scheduled Tribe population assumes some important position in the district. As per 2001 census, 14.11 per cent of the total population belongs to SC and 4.51 per cent belongs to ST group.

iii. Topography and Geographical Features

Idukki, the hilly district of the State, has many unique topographical and geographical characteristics. There are 14 peaks in the district and
Anamudi is the highest peak South of Himalaya. Nearly 90 per cent of the total area of the district comes under high land covered by rugged mountain ranges, hills and deep valleys. It is covered with dense forests. Because of the undulating topography large area in the district are not suitable for scientific cultivation. There is only a small strip of midland area towards the western part and the district as such has no low land.

iv. Climate and Rainfall

Owing to the peculiar topography of the district the climate of the district varies considerably with the rest of the state. The western part of the region experiences a moderate climate with temperatures varying between 21°C to 27°C, while the eastern part known as the high ranges experiences a pleasant cold climate throughout the year. As in the case of other districts of Kerala this district also has the benefit of South-West Monsoon (Edavappathy) from the months of June to September and North-East Monsoon (Thulavarsham) during October. The normal rainfall in this district is 3265 mm.

v. Forest

The entire Eastern side of the district is covered with forests. More than 45 per cent of the district is under forests. About ¼ th forest area of the state is in the district. The total forest area in the district is 260907 Ha. The copious rainfall results in evergreen deciduous tropical forests in the high ranges. The important types of trees found in the forests are Rose Wood, Teak, Irul, Venga, Anjili, Karangely, Maruthu, Pyne, Nangu, Red Cader,
White Cader etc. Besides, this region has also cardamom, tea, coffee, rubber, eucalyptus and sugarcane plantations.

vi. Agriculture

A major portion of this district is unsuitable for cultivation because of its undulating topography and non-availability of irrigation facilities. Even then agriculture and animal husbandry are the main occupations of the people. The per capita availability of the land in the district is 0.24Ha. The important crops of this district are cardamom, tea, coffee, rubber, coconut, pepper, tapioca, paddy, potato, orange etc. The main source of irrigation is rainfall and the tail waters of the hydro-electric projects. Since the district is located far away from the coastal line there is no scope for marine fishing.

vii. Industry

Idukki is an industrially backward district. Raw materials like rubber, forest products and spices are in abundance here. Lack of infrastructural facilities like conveyance and communication, ecological factors etc. hinder the industrial growth of this region. Tea industry is the main industry functioning in the district and most of the tea factories are located in the high ranges. Food processing industries are being setup in different parts of the district.

The basic details of Idukki district are presented in Table 4.2.
Table 4.2
Idukki District at a Glance

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Date of formation</td>
</tr>
<tr>
<td>2.</td>
<td>District Headquarters</td>
</tr>
<tr>
<td>3.</td>
<td>Geographical Area</td>
</tr>
<tr>
<td>4.</td>
<td>Number of Revenue Divisions</td>
</tr>
<tr>
<td>5.</td>
<td>Number of Taluks</td>
</tr>
<tr>
<td>6.</td>
<td>Number of Revenue Villages</td>
</tr>
<tr>
<td>7.</td>
<td>Number of Municipalities</td>
</tr>
<tr>
<td>8.</td>
<td>Number of Block Panchayats</td>
</tr>
<tr>
<td>9.</td>
<td>Number of Grama Panchayats</td>
</tr>
<tr>
<td>10.</td>
<td>Total Population (2001 census)</td>
</tr>
</tbody>
</table>


A sketch map of Idukki district is given in the Appendix VII.

4.4.2 SAMPLE SETTING

Idukki District has eight Developmental Blocks, 52 Panchayats, one Municipality and one Township. In order to give representation to all regions of the district the investigator decided to give representation to all blocks of the district. From each block area Panchayats were drawn. Identification of Panchayats was done on the basis of certain criteria based on secondary data. They are (i) Land Area, (ii) Population, (iii) SC/ST Population, (iv) Number of households, (v) Distribution of Educational Institutions, (vi) Literacy Rate and (vii) Economic Status of the Village
revealed mainly by per capita income. Besides selecting Panchayats, it was decided to take samples from the Municipal area. The Block-wise Number of Panchayats, Area, Number of Households, Population and Literacy Rate is presented in table 4.3.

Table 4.3
Block Wise Details of Idukki District

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Block</th>
<th>No. of Panchayats</th>
<th>Area (Sq.Km.)</th>
<th>No. of Households</th>
<th>Population</th>
<th>Literacy Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Adimali</td>
<td>5</td>
<td>519.14</td>
<td>29389</td>
<td>125861</td>
<td>88.00</td>
</tr>
<tr>
<td>2.</td>
<td>Azhutha</td>
<td>6</td>
<td>1214.87</td>
<td>39040</td>
<td>164316</td>
<td>83.00</td>
</tr>
<tr>
<td>3.</td>
<td>Devikulam</td>
<td>8</td>
<td>963.43</td>
<td>32916</td>
<td>135190</td>
<td>71.42</td>
</tr>
<tr>
<td>4.</td>
<td>Elamdesam</td>
<td>7</td>
<td>187.22</td>
<td>29045</td>
<td>126682</td>
<td>93.69</td>
</tr>
<tr>
<td>5.</td>
<td>Idukki</td>
<td>6</td>
<td>734.82</td>
<td>30121</td>
<td>129265</td>
<td>93.32</td>
</tr>
<tr>
<td>6.</td>
<td>Kattappana</td>
<td>7</td>
<td>372.38</td>
<td>41212</td>
<td>174302</td>
<td>88.51</td>
</tr>
<tr>
<td>7.</td>
<td>Nedumkandam</td>
<td>7</td>
<td>341.90</td>
<td>36007</td>
<td>150176</td>
<td>95.42</td>
</tr>
<tr>
<td>8.</td>
<td>Thodupuzha</td>
<td>6</td>
<td>129.33</td>
<td>17116</td>
<td>76278</td>
<td>94.86</td>
</tr>
<tr>
<td></td>
<td>Thodupuzha Municipality</td>
<td>N.A.</td>
<td>35.41</td>
<td>10305</td>
<td>46246</td>
<td>92.96</td>
</tr>
<tr>
<td></td>
<td>District Total</td>
<td>52</td>
<td>4498.50</td>
<td>265154</td>
<td>1129221</td>
<td>90.60</td>
</tr>
</tbody>
</table>


4.4.3 METHOD OF SAMPLING

After identifying the area, the next task was to draw sample households representing the entire households in the District. It was proposed to select samples using Stratified Random Sampling Method. It is defined as a technique designed to ensure representativeness and to avoid bias (Garrett, 2006). This technique is applicable when the population is
composed of subgroups or strata of different sizes. As the present study is to assess the effect of education on Economic Growth of individuals and households, it was necessary to have sufficient number of households having earning members with various levels of education engaged in various occupations. Therefore in selecting the households due consideration was given to locality, community and economic status. The official house list kept by the respective Panchayats and Municipality were used for selecting the households. In the present study households belonging to the jurisdiction of first grade Panchayats, Municipality and township are considered as Urban and others as Rural.

Considering the above aspects, from all Block areas of the District, two Panchayats each were drawn based on the selected criteria. From the selected 16 Panchayats, 90 households each were selected at random. Besides these, 90 households from the Municipal area were also selected. Thus data was collected from 1530 households. After careful examination, data given by certain households which gave unreliable information were eliminated. Thus the final sample was limited to 1500 households and their split up is given in Table 4.4.
Table 4.4
Details of Households Selected from Idukki District

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Block / Municipality</th>
<th>Panchayat</th>
<th>No. of Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adimali</td>
<td>Mannankandam Mankulam</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>88</td>
</tr>
<tr>
<td>2</td>
<td>Azhutha</td>
<td>Elappara Kumaly</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>87</td>
</tr>
<tr>
<td>3</td>
<td>Devikulam</td>
<td>Kanhalloore Marayoor</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>89</td>
</tr>
<tr>
<td>4</td>
<td>Elamdesom</td>
<td>Karimannonoor Velliymattom</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>87</td>
</tr>
<tr>
<td>5</td>
<td>Idukki</td>
<td>Kamakshy Vathikey</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>89</td>
</tr>
<tr>
<td>6</td>
<td>Kattappana</td>
<td>Erattayar Upputhara</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>90</td>
</tr>
<tr>
<td>7</td>
<td>Nedumkandom</td>
<td>Karunapuram Nedumkandam</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>87</td>
</tr>
<tr>
<td>8</td>
<td>Thodupuzha</td>
<td>Muttom Purappuzha</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>89</td>
</tr>
<tr>
<td>9</td>
<td>Thodupuzha Municipality</td>
<td>N.A</td>
<td>88</td>
</tr>
</tbody>
</table>

**Total Sample**  1500

### 4.4.4 SALIENT FEATURES OF THE SAMPLE POPULATION

The characteristics of sample population are presented under the following heads:

I. Distribution of the Sample Households  

II. Distribution of Total Members in the Households  

III. Distribution of Earning Members in the Households

#### I. Distribution of the Sample Households

The 1500 sample households were classified into sub samples according to Locality (Urban, Rural), Community, (SC/ST, OBC, FC) and Economic Welfare Status (EWS) of the household (Law, Average and
Out of the total 1500 households 77.33 per cent were from Rural areas and the rest 22.67 per cent were from Urban areas. With respect to Community, 42.53 per cent belongs to FC, 37.26 per cent belongs to OBC and 20.21 per cent belonged to SC/ST. Corresponding to EWS of the household, 69 per cent has Average EWS, 16.20 per cent has High EWS and 14.80 per cent has Low EWS.

The sample households were categorized on the basis of their educational status as Law Educational Category, Average Educational Category and High Educational Category. This categorization was made using statistical formula, \( \text{Mean} \pm 1\sigma \). The distribution of households is given in table 4.6.
## Table 4.6

### Distribution of Households Based on Educational Category

<table>
<thead>
<tr>
<th>Group</th>
<th>Sub sample</th>
<th>Low Educational Status</th>
<th>Average Educational Status</th>
<th>High Educational Status</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locality</td>
<td>Urban</td>
<td>92</td>
<td>102</td>
<td>146</td>
<td>340</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>608</td>
<td>266</td>
<td>286</td>
<td>1160</td>
</tr>
<tr>
<td>Community</td>
<td>SC/ST</td>
<td>160</td>
<td>78</td>
<td>64</td>
<td>302</td>
</tr>
<tr>
<td></td>
<td>OBC</td>
<td>270</td>
<td>136</td>
<td>154</td>
<td>560</td>
</tr>
<tr>
<td></td>
<td>FC</td>
<td>270</td>
<td>154</td>
<td>214</td>
<td>638</td>
</tr>
<tr>
<td>Total Sample</td>
<td></td>
<td>700</td>
<td>368</td>
<td>432</td>
<td>1500</td>
</tr>
</tbody>
</table>

### II. Distribution of Total Members in the Households

The 1500 sample households consist of 8824 persons. Of these 220 are infants below five years and 2243 are students. Of the remaining, 2254 are found to be earning members which constitute 25.64 per cent of the total sample. It is to be noted that the population was found as living on the earnings of only 25.64 per cent of the people. Of the remaining 4107 persons, 42 are retired persons with low earnings and are excluded from the analysis of education and earnings. 4045 persons in the sample were found un-earning, of which 1041 were purely unemployed and 3024 were disguisedly unemployed. It is to be observed that about 34.34 per cent of the people were seemingly employed in the agricultural sector, but their productivity is negligible. The distribution of members in the sample households is presented in table 4.7.
Table 4.7
Distribution of Total Members in the Households

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Category</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Infants</td>
<td>220</td>
<td>2.49</td>
</tr>
<tr>
<td>2.</td>
<td>Students</td>
<td>2243</td>
<td>25.42</td>
</tr>
<tr>
<td>3.</td>
<td>Earning members</td>
<td>2254</td>
<td>25.64</td>
</tr>
<tr>
<td>4.</td>
<td>Purely unemployed</td>
<td>1041</td>
<td>11.79</td>
</tr>
<tr>
<td>5.</td>
<td>Disguisedly unemployed</td>
<td>3024</td>
<td>34.27</td>
</tr>
<tr>
<td>6.</td>
<td>Retired</td>
<td>42</td>
<td>0.47</td>
</tr>
<tr>
<td></td>
<td><strong>Total members</strong></td>
<td>8824</td>
<td>100.00</td>
</tr>
</tbody>
</table>

III. Distribution of Earning Members in the Households

The sample households consist of 2254 earning members. They are classified on the basis of Locality, Gender, Community, Occupation and EWS of the household. The number and percentage of earning members in the total sample and in each sub sample are presented in table 4.8.

Table 4.8
Distribution of Earning Members in the Households

<table>
<thead>
<tr>
<th>Group</th>
<th>Sub sample</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locality</td>
<td>Urban</td>
<td>484</td>
<td>21.47</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>1770</td>
<td>78.52</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>1714</td>
<td>76.04</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>540</td>
<td>23.95</td>
</tr>
<tr>
<td>Community</td>
<td>SC/ST</td>
<td>514</td>
<td>22.80</td>
</tr>
<tr>
<td></td>
<td>OBC</td>
<td>836</td>
<td>37.08</td>
</tr>
<tr>
<td></td>
<td>FC</td>
<td>904</td>
<td>40.10</td>
</tr>
<tr>
<td>Occupation</td>
<td>Agriculturists</td>
<td>494</td>
<td>21.91</td>
</tr>
<tr>
<td></td>
<td>Businessmen</td>
<td>212</td>
<td>9.43</td>
</tr>
<tr>
<td></td>
<td>Daily Wage Earners</td>
<td>572</td>
<td>25.37</td>
</tr>
<tr>
<td></td>
<td>Monthly Wage Earners</td>
<td>976</td>
<td>43.30</td>
</tr>
<tr>
<td>EWS of the Household</td>
<td>Low</td>
<td>312</td>
<td>13.84</td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>1522</td>
<td>67.52</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>420</td>
<td>18.63</td>
</tr>
<tr>
<td><strong>Total Sample</strong></td>
<td></td>
<td>2254</td>
<td>100.00</td>
</tr>
</tbody>
</table>
Out of the 2254 earning members 78.52 per cent were from Rural area and 21.47 from Urban areas. Of them 76.04 per cent are Males and 23.95 per cent are Females. Based on Community 40.10 per cent belongs to FC, 37.08 per cent belongs to OBC and 22.80 per cent belongs to SC/ST. With respect to Occupation, 43.30 per cent are Monthly Wage Earners, 25.37 per cent are Daily Wage Earners, 21.91 per cent are Agriculturists and 9.40 per cent are Businessmen. Regarding the EWS of the household, 67.52 per cent of persons belonging to Average EWS, 18.63 per cent belonging to High EWS and 13.84 per cent belonging to Low EWS groups.

The earning members were classified into four educational categories (E₁- School educated, E₂ - Certificated holders, E₃ – Degree / Diploma and E₄- Post Graduates) and are given in table 4.9.

Table 4.9

<table>
<thead>
<tr>
<th>Group</th>
<th>Sub sample</th>
<th>E₁</th>
<th>E₂</th>
<th>E₃</th>
<th>E₄</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>130</td>
<td>116</td>
<td>156</td>
<td>82</td>
<td>484</td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>906</td>
<td>348</td>
<td>374</td>
<td>142</td>
<td>1770</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>912</td>
<td>360</td>
<td>320</td>
<td>122</td>
<td>1714</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>124</td>
<td>104</td>
<td>210</td>
<td>102</td>
<td>540</td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC/ST</td>
<td>282</td>
<td>110</td>
<td>66</td>
<td>56</td>
<td>514</td>
<td></td>
</tr>
<tr>
<td>OBC</td>
<td>382</td>
<td>172</td>
<td>208</td>
<td>74</td>
<td>836</td>
<td></td>
</tr>
<tr>
<td>FC</td>
<td>372</td>
<td>182</td>
<td>256</td>
<td>94</td>
<td>904</td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculturists</td>
<td>430</td>
<td>36</td>
<td>24</td>
<td>4</td>
<td>494</td>
<td></td>
</tr>
<tr>
<td>Businessmen</td>
<td>94</td>
<td>64</td>
<td>46</td>
<td>8</td>
<td>212</td>
<td></td>
</tr>
<tr>
<td>Daily Wage Earners</td>
<td>462</td>
<td>84</td>
<td>22</td>
<td>4</td>
<td>572</td>
<td></td>
</tr>
<tr>
<td>Monthly Wage Earners</td>
<td>50</td>
<td>280</td>
<td>438</td>
<td>208</td>
<td>976</td>
<td></td>
</tr>
<tr>
<td>EWS of the Household</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>260</td>
<td>36</td>
<td>12</td>
<td>4</td>
<td>312</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>720</td>
<td>360</td>
<td>312</td>
<td>130</td>
<td>1522</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>56</td>
<td>68</td>
<td>206</td>
<td>90</td>
<td>420</td>
<td></td>
</tr>
<tr>
<td><strong>Total Sample</strong></td>
<td><strong>1036</strong></td>
<td><strong>464</strong></td>
<td><strong>530</strong></td>
<td><strong>224</strong></td>
<td><strong>2254</strong></td>
<td></td>
</tr>
</tbody>
</table>
4.5 TOOLS AND TECHNIQUES USED

The instruments employed for collecting data are called tools. To obtain data required for the study several tools need to be adopted. For the purpose of the present study the investigator used the following tools.

1. Documents
2. Questionnaire (Education – Economic Survey)
3. Economic Welfare Status (EWS) Scale
4. Interview

DESCRIPTION OF THE TOOLS

1. DOCUMENTS

Secondary data relating to the indicators of educational development such as number of educational institutions, students and teachers and the data relating to the indicators of Economic Growth such as Net Domestic Product, Per Capita Income, population and statistics relating to employment, agriculture, industry, transport and communication, health facilities, banking etc. were collected from various documents. Documents supplied by Directorate of Public Instruction, Directorate of Collegiate Education, Directorate of Secondary Education, Directorate of Vocational Higher Secondary Education, Directorate of Technical Education, Directorate of Census Operations, Directorate of Industries, Directorate of Health Services, Directorate of Economics and Statistics, State Planning Board and Panchayat Offices were carefully examined.
2. QUESTIONNAIRE

Questionnaire is a device for securing factual information about existing conditions. It is a data gathering instrument through which the respondents answer questions or respond to statements in writing. Questionnaire administered personally to the respondents have a number of advantages. Best and Kahn (2005) remarks, “the person administering the instrument has an opportunity to establish rapport, explain the purpose of the study and explain the meaning of items that may not be clear”.

Keeping in view of the major objectives of the study, the investigator decided to prepare a Questionnaire named Education-Economic Survey (EE Survey). It was aimed at collecting primary data on educational and economic details of the households selected for the study. For the preparation of the questionnaire, the investigator went through similar tools applied by other successful investigators and the concerned literature to determine the type of data required. Based on these, questions were framed so as to get the required information.

The questionnaire consists of five parts:

i. General Information about the Households

This section aims at collecting general information about the households. It consists of seven items. Information regarding the name and address of the head of the household, house number, religion and community, caste division (SC/ST, OBC, FC), name of Block, Panchayat / Municipality and total number of members in the household are furnished.
ii. Details of Members engaged in Agriculture

This section was meant to collect information regarding members working as agriculturists in the households. It gathered data on name, sex, age, education and average monthly earnings were included.

iii. Details of Members engaged in business

This section was intended to gather information regarding the members working as business men. The data on name, sex, age education and average monthly earnings were included.

iv. Details of members engaged in daily wage earning occupations.

This section was to collect information on members working as Daily Wage Earners. It gathered data regarding the name, sex, age, education and average monthly earnings of individuals.

v. Details of members working as Monthly Salaried Employees

This section was meant to collect information about members working as Monthly Salaried Employees. It gathered data on the name, sex, age, educational qualification and average monthly salary of employees.

Pilot Study

A draft form of the Education-Economic Survey was prepared following the characteristics of a good questionnaire. Then it was submitted to the experts in the field of educational research to get suggestions. For conducting the pilot study the investigator selected 50 households from the area of study. Care was taken to include households belonging to various communities and economic backgrounds. The heads of the households were
directly approached and requested to fill up the draft form of EE Survey. Based on their feedback along with opinions gathered from experts, the final form of the EE Survey was prepared.

The format of the questionnaire in its Malayalam and English versions are given in Appendix I and II respectively.

3. ECONOMIC WELFARE STATUS SCALE (EWS Scale)

For measuring the economic welfare status of households the investigator prepared a scale named ‘Economic Welfare Status Scale’. The scale contained different aspects of economic welfare possessed by the households and were based on the generally accepted indicators of Economic Growth.

For the preparation of the scale, the investigator sought the help of the supervising teacher and went through the relevant literature for collecting items for the scale.

The scale was prepared after studying various items that determine the economic welfare of households. Generally the economic status of a household is determined by factors like income, presence of earning members, size of landholdings, value of assets accommodation facilities infrastructural facilities transport and communication facilities sufficiency of food and clothing, stable financial position, better health condition of household members and sanitation facilities.

The components in the scale are based on the widely accepted indicators of economic growth. After careful analysis of these components a draft scale was prepared and weightages were assigned to items. After
thorough study and consultation with experts, certain weak items were avoided and weightages were modified. The final scale consists of 28 components. The components in the scale and justification of their inclusion are given below.

i. **Number of members in the household**

   This item includes size of the household and the number of earning members. Size of the household is an important determinant of economic status. When family size increases more income is to be spent, which may otherwise be spent for the welfare of the household. More earning members result in more economic welfare. It is believed that the earnings of each member will contribute to the family income.

ii. **Monthly Income of the Household**

   Income is the most important indicator of economic status of a family. As income increases economic status increases and vice versa. It considers the average monthly income of the household from various sources.

iii. **Size of Landholdings**

   Size of land holdings is considered as wealth, since it’s value is increasing day by day. In rural areas agriculture is a major source of income and it provides agricultural products for direct consumption.

iv. **Value of Total Assets**

   Value of total assets is another indicator of household economic status. It comprises of all fixed and durable items such as house, landed
property, animals, industrial unit, machines, furniture, and household appliances.

v. Savings and Liabilities

Savings and liabilities are considered as the indicators of the economic status of a household. It consists of items such as average monthly savings and the financial position of the family.

vi. Residential Accommodation Facilities

Residential accommodation facilities is a visible item of economic status. This item includes the type of floor, wall, roof, availability of electricity and latrine facility, which are considered visual evidence of economic well-being.

vii. Household Infrastructure

It is meant for assessing the infrastructural facilities at home. It involves items such as the availability of furniture, modern appliances, type of cooking fuel and number of servants, if any.

viii. Transport and Communication Facilities

It deals with the conveyance and communication facilities available to the household members. It consists of items such as vehicles owned by members and availability of communication facilities like radio, television, telephone, and computer.

ix. Food and Clothing

The quantity and quality of food and clothing materials reflects the economic conditions of a household. This item comprises of food
sufficiency, major source of food, consumption of nutritious food and sufficiency of cloths available to household members.

x. **Health and Sanitation**

Good health is an indicator of economic status. It is the result of health facilities available at home and the precautions taken to control diseases. Items like drinking water facility, general health condition of family, presence of contagious diseases, vaccination taken are included.

**VALIDITY AND RELIABILITY OF THE SCALE**

Validity and reliability are essential to the effectiveness of any data gathering procedure.

Validity is that quality of data gathering instrument or procedure that enables it to measure what it is supposed to measure. Reliability is the degree of consistency that the instrument or procedure demonstrates: whatever is measuring, it does so consistently. Reliability is a necessary but not sufficient condition for validity. That is, a test must be reliable for it to be valid, but a test can be reliable and still not be valid (Best and Kahn, 2005).

All the possible methods were adopted to establish validity and reliability of the tools used for this study. But it is not possible to adhere to statistical procedures for measuring instruments like status scale which need not be subject to item analysis. It is not possible to drop any item on the basis of that it is either difficult or easy; because the investigator is assessing the economic status of households. The items in the scale are so simple that even a head of the household having an average ability can easily answer
them. The investigator, therefore, relied mostly on non-statistical procedures to determine the validity and reliability of the scale prepared by him.

**Validity**

The criterion of content validity is often assessed by a panel of experts in the field who judge its adequacy, but there is no numerical way to express it (Best and Khan, 2005). Hence efforts were made to improve the items in the scale in consultation with the experts in the field. Based on their suggestions and recommendations, modifications were made in the component items and weightages given.

Construct validity of a test may be said to measure a theoretical construct or trait (Anastasia, 1961). Construct validity of the EWS scale was ensured by giving simple and unambiguous items. The description of the scale provided earlier makes it evident that they have coverage of almost all the important aspects to be included for a study of this type. The language used in the scale was made simple and precise so that it would be comprehensible to all the respondents, thereby adding to the validity of the tool. Moreover, the statements were tested for their clarity by administering the tools on a sample of fifty households from the area taken for the study. Hence the pilot testing of the tool also helped to establish the validity. While constructing the scale, all the customary practices were observed, as closely as possible. Thus at most care was taken by the investigator to see that the scale used for the study had content and construct validity.
Reliability

The reliability of the EWS scale was estimated by the test-retest method. In the test-retest method the scale was administered and repeated on the same sample of fifty households after a time interval of three weeks. The scores of the households in these two tests were found out. The Pearson’s Product Moment Coefficient of Correlation between the first and second set of scores were found out. The test-retest reliability coefficient thus obtained for the EWS scale is 0.71. This shows that the scale is a reliable tool for measuring the economic status of the households.

To determine the economic status of a household, scores were assigned to the items in the EWS Scale. The scores of the responses given by the heads of the households were added to get the Economic Welfare Status Score of the household.

The Malayalam and English versions of the EWS Scale with weightages to each item are given in Appendix III and IV respectively.

4. INTERVIEW

Interview is an important technique of gathering information. It is in a sense an oral questionnaire. In this procedure, instead of writing the responses, the subject or interviewee provides the required information orally and face to face. Interview, “with a skillful interviewer, is superior to other data gathering devices. One reason is that people are usually more willing to talk than to write” (Best and Kahn, 2005). The investigator conducted individual interviews with 100 officers to gather information regarding the educational problems of Idukki district. They include persons
working in government departments, heads of educational institutions and experienced teachers working in schools and colleges.

**Preparation of the Interview Schedule**

An Interview Schedule was prepared which consisted of 26 questions. These questions were given to experts for their suggestions and modifications were made in the light of relevant suggestions. The try out was made on a small sample of 15 officers as pilot study before using it for actual investigation. Feedback from the try out was used to revise questions that were apparently unclear and did not solicit the desired information. In the final Interview Schedule, 23 questions were included.

The Malayalam and English versions of the Interview Schedule are given in Appendix V and VI respectively.

**MEASUREMENT OF EDUCATIONAL STATUS**

To measure the education status of people and households, educational levels of earning members in the sample households were required to be quantified. For this, a categorization of education into various levels was made. Weightages were given to various levels of education according to their earning capacity. After consultation with experts necessary modifications were made in the weightages. The levels of education and weightages are given in table 4.10.
### Table 4.10

Educational Levels and Weightages

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Level of Education</th>
<th>Standard / Course</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LP</td>
<td>Up to Standard IV</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>UP</td>
<td>Standard V – VI</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>HS</td>
<td>Standard VIII – X</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>Certificate Courses</td>
<td>+2/PDC, VHSC, ITI, TTC etc.</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>Degree/Diploma</td>
<td>B.A, B.Sc, B.Com. B. Ed.; B.Tech, Polytechnic etc.</td>
<td>15</td>
</tr>
<tr>
<td>6</td>
<td>Post Graduation</td>
<td>M.A, M.Sc., M.Com., M.Ed., M.C.A, M.Tech, M.S.W, etc.</td>
<td>20</td>
</tr>
<tr>
<td>7</td>
<td>Research Degree</td>
<td>M. Phil; Ph.D.</td>
<td>25</td>
</tr>
</tbody>
</table>

To find out the educational status of individuals, the weightages were assigned their level of education. Similarly, to compute the educational status of the households, the weightages to the educational levels of earning members were added and divided by the number of members.

### 4.6 COLLECTION AND CONSOLIDATION OF DATA

#### 4.6.1 DATA COLLECTION PROCEDURE

Primary data required for the study were collected from the sample households selected from Idukki district. Data regarding education, occupation, earning, and other items that determine economic status of households were collected with the help of the tools prepared for the purpose as described earlier. The investigator himself directly approached the heads of the households and in the absence of any head of the household, the eldest member of the household was contacted and explained the purpose of the
study. Where the respondents were illiterate, the investigator himself recorded the information provided by the respondents in the tools. The active educated respondents themselves did the task.

Secondary data were used to study the progress of education and Economic Growth in Idukki District through years. These are obtained mainly from the administration reports supplied by the state and district level offices mentioned earlier. Educational statistics based on the indicators of educational growth and Economic statistics based on the indicators of Economic Growth were mainly drawn from the records and the other publications of the concerned offices. For collecting secondary data on education and Economic Growth, the investigator approached the heads of the offices with prior permission and collected the needed information from the documents supplied by them.

4.6.2 CONSOLIDATION AND PROCESSING OF DATA

After obtaining the data, the investigator resorted to its consolidation. The secondary data collected from various documents were arranged in proper tables. For the consolidation of primary data each sample household was assigned a number. Household data were classified according to Locality (Urban, Rural), Community (SC/ST, OBC, FC), EWS (Low, Average and High) and Educational Category (Low, Average and High).

Earning members in the households were classified according to Locality (Urban, Rural), Gender (Male, Female), Community (SC/ST, OBC, FC), Occupation (Agriculturists, Businessmen, Daily Wage Earners,
Monthly Wage Earners), EWS of the household (Low, Average, High) and Educational Category (Low, Average, High).

The scores on different items were tabulated in data sheets. For the purpose of tabulation and computer analysis, the data on various items were coded. The consolidation and processing of data were done manually and also with the help of computer.

### 4.7 STATISTICAL TECHNIQUES EMPLOYED

The objectives of the study and the hypothesis formulated for the study suggested the use of the following statistical techniques for analyzing the data.

1. Test of Significance of the Difference between Means (t-test)
2. Analysis of Variance (ANOVA)
3. Karl Pearson’s Product Moment Co-efficient of Correlation (r)
4. Test of Significance of the Difference between Correlations (z)
5. Percentage

**Test of Significance of the Difference between Means**

The Test of Significance of the Difference between Means were calculated and interpreted in terms of Critical Ratio, using the formula given below,

\[
t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

(Garrett, 2006)
Where:

\( X_1 \) – Mean of the first group
\( X_2 \) – Mean of the second group
\( \sigma_1 \) – Standard Deviation of the first group
\( \sigma_2 \) – Standard Deviation of the second group
\( N_1 \) – No. of cases in the first group
\( N_2 \) – No. of cases in the second group

The obtained t-value (CR) was then treated as belonging to a normal distribution. If the obtained t value falls between –1.96 and 1.96 the difference between means was treated as being not significant at 0.05 level. In this case the difference was treated as the same as a zero difference. If the t - value falls outside the interval 0.05 level, this means that the difference was real and was greater than zero.

If the obtained “t-value” falls outside the interval ± 2.58, the difference was treated as significant at 0.01 level, otherwise the difference was treated as not significant at 0.01 level. A significant difference between means imply that the difference was real and was different from zero. A non-sufficient difference indicated that the difference is to be attributed to sampling errors.
**Analysis of Variance (ANOVA)**

Analysis of Variance makes it possible to determine whether more than two means differ significantly or not. The details of the procedure of one-way analysis of variance are the following.

The first step used is to find out the sum of the squared deviation of each person’s scores from the mean of all the subjects ($X$). This is known as the total sum of squares (SSt) and is found by using the formula

$$SSt = \sum X^2 - \frac{(\sum X)^2}{N}$$

The next step is to divide the total sum of squares in two groups (1) between groups (SSb) and (2) within groups (SSw).

$$SSb = \frac{(\sum X_1)^2}{n_1} + \frac{(\sum X_2)^2}{n_2} + \ldots + \frac{(\sum X)^2}{N}$$

Where

$n_1, n_2$ - are the sizes of the groups to be compared

$N$ - is the number of subjects for all the groups combined.

The within groups sum of squares (SSw) is calculated using the formula

$$SSw = SSt - SSb$$

The mean square variance between (MSb) and mean square variance within (MSw) are then calculated using the formula

$$F = \frac{MSb}{MSw} = \frac{MSb/dfb}{SSw/dfw}$$
where \( dfb = n - 1 \)

\( dfw = N - n \)

The significance of an F-ratio is assessed with respect to the table of F with \((n–1, N–n)\) degrees of freedom for a particular level of significance. If, for a required level of significance, the obtained value of F is higher than the tabled value of F, then the difference between group means is considered significant for that level of significance (Best and Kahn, 2005).

Duncan’s Test is used to find out whether there is any significant difference between two pairs of values.

**Karl Person’s Product-Moment Coefficient of Correlation**

The Correlation Coefficients were calculated using Karl Pearson’s Product Moment Coefficient of Correlation with the help of the formula,

\[
r = \frac{\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{N\Sigma x^2 - (\Sigma x)^2}\sqrt{N\Sigma y^2 - (\Sigma y)^2}}
\]

(Garrett, 2006)

Where; \( \Sigma x \)–the sum of all x scores in the data.

\( \Sigma y \)–the sum of all y scores in the data.

\( \Sigma x^2 \)–the sum of the squares of all the x scores in the data.

\( \Sigma y^2 \)–the sum of the squares of all the y scores in the data.

\( \Sigma xy \)–the sum of the products of all the paired x and y values

For interpreting the values of \( r \), verbally, Garrett’s (2006) classification was used.

i.e. \( 'r' \) from 0.00 to ±0.20 denotes indifferent or negligible relationship;
‘r’ from 0.20 to ±0.40 denotes low correlation present but slight;

‘r’ from 0.40 to ±0.70 denotes substantial or marked relationship;

‘r’ from 0.7 to ±1.00 denotes high to very high relationship.

Test of Significance of the Difference between Correlations

Test of Significance of the Difference between Correlations is found out and interpreted in terms of Critical Ratio, which is given by the formula,

\[ CR = \frac{Z_1 - Z_2}{SE} \]

(Garrett, 2006)

where, \( Z_1 \) and \( Z_2 \) are Fisher’s Coefficient.

SE is the Standard Error.

The Standard Error is calculated by using the formula,

\[ SE = \sqrt{\frac{1}{N_1 - 3} + \frac{1}{N_2 - 3}} \]

where, \( \frac{1}{\sqrt{N-3}} \) and \( N_1 \) and \( N_2 \) are the sizes of the two samples.

Percentage

Simple percentage analysis was also used in the analysis of data.

TECHNIQUES OF ANALYSIS

In addition to the above statistical techniques, the investigator also used the following techniques for the analysis of data.
1. Trend Analysis

In order to review the educational growth of Idukki based on the indicators of educational development such as progress in literacy rate, number of educational institutions, teachers and students the investigator adopted Trend Analysis. The Economic Growth measured in terms of indicators like Net District Domestic Product (NDDP), Per Capita Income (PCI), growth in agriculture, industry, transport, communication health and banking are also analyzed by using Trend Analysis. The reference period for most of the data used to analyse the educational and Economic Growth is from 1990-91 to 2006-07.

2. Age-Education-Earnings Profiles (AEE Profiles)

To analyse the relationship between education and earnings the investigator employed AEE Profiles, suggested by scholars in the field of Economics and Education. The Age Education Earning Profiles is a useful device to estimate the relationship between education and earnings. Apart from education, age is the crucial element that influences earnings as it has direct relation to the completion of different levels of education.

For the preparation of AEE profiles two types of data are generally used – the time series data and the cross-sectional data. Due to the limited evidence available from studies based on time series data scholars have turned their attention to cross sectional evidence. Becker (1964), Marberges (1965), Blot and Debeauvais (1966), Blaug (1971), Jaleel (1982) and Chacko (1990) constructed AEE profiles using cross-sectional evidences.
The most important advantage of using cross-sectional data is that they provide reliable estimates of the cost of student time as a resource input in the educational system. The appropriate measure of this input the earnings of people of similar age, ability and prior education who are currently in employment and this information can be read off directly from age education- earnings data for a given year (Blaug, 1972).

In cross-sectional studies the concept earnings is an important point of discussion. In the ordinary sense, the price that a person receives for his service may be considered as earnings. Earnings made by a person would determine his productivity, which may lead to his economic welfare. In certain studies, family income is taken as earnings, by dividing equally the income among the members of the family irrespective of education (Nalla Goudan, 1967). This may be either due to the non-availability of data on earnings or seasonal and disguised unemployment. Studies conducted by Lee Hansen (1963) and Henderson Steward (1965) used unearned property income to determine the relationship between age education and earnings. But Carnoy (1967) used earned income of people from various employments in the construction of AEE profiles.

In determining the earnings, there is difference of opinion among the scholars regarding the use of mean or medium of the earnings. In Economics of Education the researchers mainly consider mean earnings of the respondents for preparing AEE profiles. In studies conducted by Lee Hansen (1963), Henderson Steward (1965), Carnoy (1967), Blaug (1969), Jaleel (1982) Mary (1983), Chacko (1990), Daniel (2000) mean income is used for
the preparation of AEE profiles. But scholars like Renshow (1960) argue that benefits attributable to education should be based on the median earnings rather than on the mean. The main argument for this procedure was in relation to earnings-related factors other than education. Median differentials are mostly smaller than mean differentials due to the skewness in the distribution of income. But it is also argued that it is those factors which create this skewness, such as ability and social background, which the rate of return calculations should attempt to eliminate. On the basis of this argument, researchers continue to employ mean earning differentials as the correct measure for constructing the profiles, believing that if earning factors other than education are to be accounted for, then this should be done separately (Psacharopoulos, 1973).

For the construction of the profiles the mean earning of people were calculated according to age break downs from 25 to 65 with respect to the four educational categories (E₁, E₂, E₃, E₄) the relationship between the paired values of Two sets of measures (Age and Earnings) were then determined.

A general pattern of the AEE profiles for the four educational categories is presented in figure 4.1.
As shown in figure, the ‘x’ axis measures the average age and the ‘y’ axis the respective earnings.

A well behaved AEE profiles is expected to have the following characteristics.

1. Earnings are highly correlated with education. Earnings rise at every age with each successive level of education, and there is no crossing of profiles.

2. All profiles rise with age to a single peak and then fall until retirement age.

3. The profiles for higher educated individuals are steeper than those for the less educated.

4. The absolute level of earnings at any point in time is higher for people with a higher level of schooling.
In the present study AEE profiles were constructed to examine the impact of education on the earnings of people in Idukki district. Using the cross sectional data, the investigator followed the procedures and statistical techniques recommended by scholars in the field for preparing the profiles. In the present study, only earned incomes or earnings from employment have been used for the construction of the profiles.

The investigator had taken due care while following the steps described in the chapter. The selection of the sample, construction of tools, collection and consolidation of data were done systematically. The tabulated data was analysed by employing suitable statistical techniques. The details regarding the analysis of data have been compiled in chapter five titled “Analysis and Interpretation of Data”.