CHAPTER - III

METHODS AND MATERIALS

This chapter outlines the research design of the present study including sampling technique and analytical procedures adopted for the analysis of data. The first section gives the profile of the study area. The second section brings out the concepts and terms of the study. The third section presents the methodology and the sample design.

3.1 PROFILE OF THE STUDY AREA OF TRIUCHIRAPPALLI

Tiruchirappalli is home to many historic temples, monuments, churches and mosques. Uraiyur (also pronounced as Uraiyur), which is the Old Tiruchy, has a long tradition. With over 2,500 years of known history, it was the capital of the early Cholas. The oldest man-made dam Kallanai was built by Karikala Cholan across the River Kaveri about 10 miles from Uraiyur. It was an important town in the days of the later Cholas, Nayaks as well as during the early days of the British East India Company. The Madurai Nayak rulers changed their capital from Madurai to Tiruchirappalli and back several times. The conquest of Tiruchirappalli by the British East India Company marked a major step in the British conquest of India.

One famous landmark in Tiruchirappalli is the Rock Fort, a huge outcrop of rock of 83 metres high, which is the only outcrop in the otherwise flat land of the city. For this reason, the city is also called Rock City. On top of the rock is the Ucchi Pillayar Koil, a temple dedicated to Vinayaka (Lord Ganesha), from where one can enjoy a panoramic view of Tiruchirappalli. The temple was also used as a military fort by the Nayaks for some time. On the southern face of the rock are several beautifully carved cave temples of the Pallava period, on the eastern side is Sri Nandrudayan Vinayakar Temple, with the powerful Lord Ganesha as the main deity. A big sized Ganesha and other rare deities can be seen in this temple, which hosts festivals every year during the Vinayaka Chathurthi birthday of the Lord and
many carnatic musicians and stalwarts have given musical concerts over 70 years in this famous shrine. Around the rock temple is a busy commercial region, specializing in textiles, known as Chatram. The Main Guard Gate is flooded on festive occasions such as Diwali, Christmas and Pongal. Trichy is famous for the number of churches in India. It has the most number of chapels in India. The most famous of them are The Holy Redeemer's Church, Lourdes Church and The Cathedral.

According to the 2001 census, Trichy or Tiruchirappalli had a population of 8.47 lakhs. Males constitute 49.97 percent of the population and females 50.03 percent. Trichy has an average literacy rate of 91.45 percent (official figure). Male literacy is 94.17 percent and female literacy is 88.73 percent with 9.59 percent (official figure) of the population under 6 years of age.

The city's population is predominantly Hindu, along with sizable Christian and Muslim populations. Sikhs are also present in smaller numbers. Tamil is the official language. The dialect of the Tamil language spoken here is often 'Neutral', although a tint of "Kongu Tamil", Madurai Tamil may be heard as one travels through the western and southern boundaries of the District/City. One may also hear Srilankan Tamil widely spoken in some pockets of the city. Other languages spoken here include Telugu, Malayalam and Hindi. Once, Tiruchirappalli served as the headquarters of the erstwhile South-Indian Railways (which was renamed later as 'Southern Railways' with Madras/Chennai as the headquarters) during the pre-independence era for a few years. Anglo-Indians (many of them who worked in the “South-Indian Railways”) started settling in 'Golden Rock-Township' and 'Crawford' located within the city. Covering to this reason one can also see a large English-speaking population in the city.

Considered an educational town, Tiruchirappalli has schools and colleges that are hundreds of years old. College Road in Chatram has three colleges and five schools. Prominent among the educational institutions in Tiruchirappalli are Bharathidasan University, National Institute of Technology, Trichy and SASTRA.
The Government Law College, Tiruchirappalli was founded in 1979. Bharathidasan Institute of Management, a top-20 Indian B-school is also located in Tiruchirappalli, adjacent to NIT-T. K.A.P.V. Medical College is located close to the Central Bus Stand.

Former Indian President Dr.A.P.J. Abdul Kalam, writer Sujatha (Rengarajan) studied at St Joseph's College in Trichy. R.Venkataraman (former Indian President) studied at National College in Trichy. R. Vasantharaja from Tanjore also studied in the same college.

There are some major industrial houses in Trichy; few among them are BHEL (Bharat Heavy Electricals Limited), which are a prominent Navaratna company (highly profitable PSU), Ordinance Factory, Railway Workshop and Dalmia Cements. The plant of BHEL in Trichy, manufactures High Pressure Boilers. There are a lot of BHEL-groomed small to medium scale industries notable in the national and international market like Cethar Vessels, Veesons Energy Systems etc.

Tiruchirappalli, the fourth largest city in the state was a citadel of the early Cholas, which later fell to the Pallavas. But the Pallavas never really managed to retain control of this strategic city and lost it to the Pandiyas several times. The struggle for power between the Pallavas and Pandiyas continued till 10th century as the Cholas asserted and assumed the reign until the deadline of the country. When this empire collapsed in 1565, Tiruchirappalli came to be under the rule of the Nayakar of Madurai, the Marathas, the Nawabs of Carnatic, the French and finally the British. But it was under Nayakas of Madurai that Tiruchirappalli proposed in its own right and grew to be the city that it is today. The city is a fine blend of the traditional and modern and is built around the Rock Fort. Apart from the Fort there are several Churches, Colleges and Missions dating back to the 1760s. With excellent infrastructure facilities Tiruchirappalli is a good base to see east-central Tamilnadu.
This city is 320 km south of Chennai and 142 km from Madurai. It is a big business centre with a good number of industries like Bharat Heavy Electrical Limited, Ordnance factory, Southern Railway Workshop and Tamilnadu News print and paper Limited etc., like many other cities the population here comprises of both salaried class and business men. Tiruchirappalli is an important, junction in the Southern Railway. It is connected to all-important towns in south India. Tiruchirappalli is well connected by road. Town buses connect all-important places in and around town. Tourists Taxis, share Auto, Mini buses etc., are available. Tiruchirappalli also has an Airport and Indian Airlines connect Tiruchirappalli with Chennai, Madurai, Bangalore and Singapore.

**GENERAL INFORMATION**

<table>
<thead>
<tr>
<th>Area</th>
<th>23-26 sq. kms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>23, 88,831 (2001 censes)</td>
</tr>
<tr>
<td>Male</td>
<td>11, 94,133</td>
</tr>
<tr>
<td>Female</td>
<td>11, 94,698</td>
</tr>
<tr>
<td>Attitude</td>
<td>78 Meters</td>
</tr>
<tr>
<td>Temperature</td>
<td>Summer: (max) 37.1 C and (min) 26.4 C</td>
</tr>
<tr>
<td></td>
<td>Winter : (Max) 31.3 C and (min) 20.6 C</td>
</tr>
<tr>
<td>Rainfall</td>
<td>83.5 cm average</td>
</tr>
<tr>
<td>Clothing</td>
<td>Tropical</td>
</tr>
<tr>
<td>Languages spoken</td>
<td>Tamil, English and Urdu.</td>
</tr>
</tbody>
</table>

**EDUCATION**

Tiruchirappalli area is one of the chief educational centres of Tamilnadu. It has 22 Arts and Science colleges, 12 Engineering colleges, and Polytechnics. A Medical college, Law College, Bharathidasan University and National Institute of Technology (formerly known as Regional Engineering College) adds beauty to the city. They are many higher secondary and Elementary schools. Colleges of Arts and Science such as Bishop Heber College, St. Joseph’s College, Holy Cross College, Seethalakshmi Ramasami College, Cauvery College, National college,
E.V.R College, Jamal Mohamed College, Urumu Dhanalakshmi College, Government College, Indira Gandhi College, Sirmath Andavar College, Kurinji College, and etc., Students from other states and from abroad come to these institutions for collegiate education.

### 3.2 PROFILE OF BHARATHIDASAN UNIVERSITY

Bharathidasan University established in February 1982, and was named after the great revolutionary Tamil Poet, Bharathidasan (1891-1968). The motto of the University “We will create a brave new world” has been framed from Bharathidasan’s poetic words “GjpaNjhH cyfk; nra;Nthk;”. The University endeavours to be true to such a vision by creating in the region a brave new world of academic innovation for social change”. (NAAC, - 2005, p.69) The year 2006-07 is the Silver Jubilee year for this great and vibrant University.

**The University Campus and Structure.** The campus is located in a sprawling area of over 1000 acres of land on the Tiruchirappalli - Pudukkottai Highway (NH 210). Besides this main campus, there is a city campus at Khajamalai housing the Centre for Distance Education, the Institute for Entrepreneurship and Career Development (IECD), the Bharathidasan University Technology Park (BUTP) and a few more Departments. The Bharathidasan Institute of Management (BIM) is located in the B.H.E.L. Campus, with whose partnership; the BIM has emerged as one of the top Business Schools of the country.

The University is unique in its being "composite" in character. Besides the different disciplines of liberal Arts and Basic Sciences, it has a Department of Pharmacy, School of Bio-Medical Sciences, Institute of Management, Department of Educational Technology, among others. In all, it has 14 Schools and 27 Departments and 8 Centres.

The affiliating jurisdiction is over 138 Arts & Science / Fine Arts / Education Colleges and 18 Approved Institutions. Fifteen of the affiliated colleges
are autonomous. Among the affiliated colleges, more than 50 percent are offering PG programmes and 25 percent are offering M.Phil. /Ph.D. programmes. A good number of them are nationally recognized for quality education. The programmes offered through affiliated colleges are so diversified that they number more than 250.

Number of institutions affiliated to the university (as on 20th February 2008)

- Liberal Arts and Science : 94
- Education : 82
- Fine Arts & Arts and Crafts : 03
- Uni-faculty institution : 01
- Approved Institutions : 20
- TOTAL : 200

Of the 94 Arts and Science Colleges, there are 15 Autonomous Colleges. The Law Colleges, Medical Colleges and Engineering Colleges previously affiliated to the University have since been taken away to come under the respective discipline-based professional Universities.

Recently, the State Government has passed legislation transferring all the Government Arts and Science Colleges to the respective Universities as the constituent colleges. As and when it is given effect to, the University will be vested with 18 Government Colleges as University constituent colleges. The concept is yet to become operational. The area of affiliation jurisdiction covers 8 districts namely, Tiruchirappalli, Thanjavur, Thiruvarur, Nagapattinam, Pudukkottai, Karur, Perambalur and Ariyalur.
The State Government’s order for establishing a new College is a pre-requisite for the University to consider for affiliation. [And, New Engineering Colleges have to have approval of both the government and the All India Council for Technical Education (AICTE)]. Receipt of the approvals of the Government, University sends an affiliation commission which would assess the discipline-specific as well as general infrastructure requirements in the campus. The commission consists of experts in the subjects. On the recommendation of the Inspection Commission, initially conditional/provisional affiliation is granted. The college is inspected in the immediately following year (generally by the same members of the previous commission, if possible) to see whether the college has fulfilled all the conditions. No affiliation for additional programmes would be considered unless the College/Institution operates the programme in their own permanent campus and fulfils all the requirements for previous programmes.

3.3 PROFILE OF THE COLLEGES

3.3.1 BISHOP HEBER COLLEGE, TIRCHY

Bishop Heber College is a religious minority educational institution established by the Tiruchirappalli-Thanjavur Diocese of the Church of south India. Its main objective is to cater to higher educational needs of the members of the Church of South India and other Christians and specially to provide for them an educational atmosphere in keeping with the Christian ideals of the Church. The College, however, admits students of all faiths and religions and seeks to provide for them the best possible higher education.

The Bishop Memorial School become a full-fledged high school in 1864 and sent its pupils for the matriculation examination. In 1873 the school was raised to a second Grade college and in 1882 it become a first grade college. It was then known as SPG College. It was the first college to be established in Tiruchirappalli. The college came to be known as Bishop Heber College in the late 1920’s and its
Diamond jubilee was celebrated in 1926 under the presidency of the Governor of Madras, Lord Goshen.

3.3.2 JAMAL MOHAMED COLLEGE, TIRCHY

The need for more colleges and the sad plight of students who aspired in vain for higher education had been agitating the minds of many educationalists. The late Janab. N.M Khajamian Rowther and the late Janab Mohamed Sahib planned to meet this challenge by establishing a first grade college in Tiruchirappalli, considered to be the heart of Tamilnadu. Jamal Mohamed college made its appearance thus in the map of academic world on the 11th July 1951. The college celebrated its Silver jubilee during 1979 and the golden jubilee during 2000-2001 in a grand manner. The college was awarded FIVE STAR status by NAAC, an Autonomous body of UGC, during the golden jubilee year. The college was able to scale greater and greater heights for promoting quality and excellence in higher education.

3.3.3 HOLY CROSS COLLEGE, TRICHY

Holy Cross College (Autonomous), Tiruchirappalli, is a highly reputed Arts and Science College for Women in the State of Tamil Nadu. It is a Catholic institution established in 1923 and has a unique history of academic excellence. Holy Cross College is one of the oldest of colleges for women in South India, which was affiliated to Madras University. Currently it is affiliated to Bharathidasan University. The college is administered by the Sisters of the Cross of Chavanod, Province of Tiruchirappalli and managed by a Governing Board. In recognition of its service to the cause of women’s education for over six decades, the college was granted autonomous status from June 1987. The college was accredited by NAAC in 1999 with FIVE STARS, and in the year 2005, the college was re-accredited by NAAC with "A" Grade. The college offers 23 U.G., 15 P.G., 3 M.Phil, 4 Doctorate and 8 Diploma and 3 Add-on-courses, in addition to a number of short-term Certificate courses conducted by the Human Resources Development Centre.
The college is blessed with a band of dedicated and committed staff, 164 members in the Day Session and 54 members in the Evening Session. We have 111 non-teaching staff members who are devoted and loyal.

3.3.4 NATIONAL COLLEGE, TIRCHY

The National College founded in 1919 is a glorious example for meaningful correlation between dynamism of society and dynamism of education. If the motto of the college, “That which liberates is education”, implied the role of education in liberating India from the evil clutches of communalism, casteism and ignorance has become the focal point.

The motto of this premier institution is ‘Saa Vidyaa Yaa Vimuktaye’ that which liberates is education. The institution was founded to impart and to promote among the youth the highest and loftiest ideas, which constitute the essence of Indian culture and nationalism.

As one of the oldest colleges in India with eighty-five years of standing after the Independence, the institution has set as its goal the liberation of the suppressed sections of the society from the evil clutches of poverty, ignorance and casteism. Consequently in its eighty-five years of glorious history this institution has served the cause of socially and economically deprived sections of society, especially from rural Tamilnadu.

3.3.5. ST. JOSEPH’S COLLEGE, TIRCHY

St.Joseph College is an affiliated First Grade College of the Bharathidasan University. It was established in 1844 by the Fathers of Society of Jesus (The Jesuits). It was affiliated to the then Madras University. St. celebrated centenary in 1944 sequicentenary, in 1994 and acquired the Five Star Status awarded by NAAC IN 2000. The College is owned by the society of St.Joseph a body registered under Societies Regulation Act (1860), having its office at Tiruchirappalli St.Joseph’s College is meant primarily for the Catholic Minority community of the Town and the State. The institution does admit other student, irrespective of their caste and
creed, their religious feelings and freedom of conscience are respected. The college imparts the sound formation (religious, academic, social & physics) of the young, based on Christian principles. Every catholic student therefore attends Religion & every Non-Catholic Student attends Ethics classes, in which man’s fundamental duties to God, to his motherland, to self and to his fellowmen are explained. He\She also takes part in out-reach programmes organized by the college. This Jesuit College trains young men and women of quality to be leaders in all walks of life so that they may serve the people of their nation in truth, justice & love.

Accordingly this college is to be an agent of social change, instilling an awareness of the great need in India for social justice based on the dignity of the human person. Thus, it strives to make its own contribution towards transformation of the present social condition, so that justice, equality and the moral values enshrined in the Constitution of India may prevail in the daily life of every citizen of India.

3.3.6 E.V.R COLLEGE, TRICHY

There are many colleges in and around Trichy. But the increase in the number of students in the higher education was not sufficient to cater the needs of the students. Especially for the backward classes and most backward students there was no Government College.

E.V.R Periyar, a noted personality who strived hard for the welfare of the needy students donated 9.65 Acre land and 3.5 Lakhs for constructing a college to the government.

The government of Tamil Nadu accepted what Periyar gave and it also bought the buildings and the lands and constructed the college with hostel facility. The college campus extended to 52.62 Acres.

In 1965 with classrooms and laboratories the college was started at a cost of 16.5 Lakhs. Then this Chief Minister Mr.M Baktavachalan inaugurated the college.
on 24.08.1965. The college is just three kilometers from the railway station near kajamalai. We can reach the college either from JMC road or Mannarpuram cross road, Trichy Law College and BDU campus is near to this college. The college near Anna stadium in the north, and youth Hostel, SC /ST hostel for students.

The college became Autonomous during the year 1998-1999. Now this college has 14 U.G. courses and 15 P.G. courses, 5 Research courses and also M.Phil courses.

3.3.7 GOVERNMENT ARTS AND SCIENCE COLLEGE, TIRUVERUMBUR

Tiruverumbur, a place near Trichy where BHEL, OFT, and REC are situated has all conveniences except a college. So the board of collegiate education started a government arts college in this area in the year 1972 in the month of October Mr.T.P. Bharathi was the chairman and Mr.K.Kamatchi was the secretary and treasurer.

The college was named, Dr.Naavalar Neduncheclhiai government Arts College and the first batch of students were admitted in 1973 under the affiliation of Madras Universities. Physical science and B.A., History were stated. The place for this college was donated by BHEL and then Chief Minister Mr.M.KARUNANIDHI laid the foundation for this college. From 1975-77, B.A Organization Behaviour was started and Madras University gave its consent and affiliation. This institution was made co-educational from there on. In 2003-04 with the affiliation of BARD, courses were started. In 2004-06 onwards PG courses were started. At the beginning of this year NAAC visited this college and B+ status was awarded. The self-financing courses, which were started during 2006-07 onwards, got aid from government and became approved courses.

3.4 CONCEPTS

A detailed explanation of the various concepts of costs involved in education will be of help to the reader to have a comprehensive picture of the concepts under consideration In the opinion of Gary Becker cost of education
includes private cost and social cost. Private cost is that is spent by the individual and his family on tuition fees, books, equipments, staying in the hostel. Social costs are those that are spent by the colleges, states and union governments, philanthropists and other voluntary agencies and earnings, foregone.

The cost incurred by the institution to operate and maintain the institutions. The cost includes the recurring or operating and non recurring (fixed cost) expenditure of the institution met from all sources to maintain institutions.

i. **GOVERNMENT (PUBLIC) COST**

This is cost incurred by the government (centre and state government) to educate the students. This cost is equal to the total expenditure of an institution minus the receipts of the institution from the students and endowments plus subsidies (scholarship) etc., given direct to the students by the government.

ii. **ANNUAL GOVERNMENT BUDGET EXPENDITURE**

The concept of government budget expenditure is different from government cost. Expenditure includes the actual amount provided by government to the institutions, whereas cost takes into account the actual amount developmental grants. Therefore, government budget expenditure is equal to government outlay for developmental grants to the institution plus government cost.

iv. **ADMINISTRATION (STAFF) COST**

This item consists of institutional administration and the non-teaching staff of each institution. While estimating the administration cost of University College’s care, has been taken to eliminate the cost incurred on affiliated colleges.

v. **COMMON SERVICES & OTHER RECURRENT COST**

The cost under this item includes the expenditure on common services like examinations; student’ facilities maintained institutions, dispensary and other
auxiliary services and contingencies. The miscellaneous items, which cannot be grouped in any of the given units, are also included in these units.

vi. CAPITAL COST

This cost contains the expenditure on building, land, laboratory, equipment, library and other items of permanent nature. This item of cost is carefully estimated on the basis of the theory.

vii. PRIVATE (PERSONAL) COST

The cost includes the expenditure incurred by the parents of the students or by the students on items relating to education. This includes the expenditure on the following items.

viii. FOOD

The cost of food includes the expenditure incurred by the students on their mess bills in the hostels, hotels and at home. In addition to the expenses on their foods, the students might also spend on snacks etc., at hotel club etc., the expenses on all these items at different places are included in this cost. The cost of food of the students who live with their parents is computed on the basis of the size of the family.

ix. MAINTENANCE

Maintenance of the students includes clothing, laundry charges, footwear membership, of club, expenses on medical checkup and cost of medicine, toilets etc.,

Food and maintenance cost of education is purely personal cost of the students and therefore, it is expressed as one item on certain occasions to find out the remaining private academic cost of education to the parents or to the students.
x. TRANSPORT & COMMUNICATION

This item includes in the city, round trips to native place, postage etc., incurred by the students.

xi. BOOKS AND STATIONERY

This includes the expenditure on text Books, magazines, journals dairies, typing charges for project work or notes, paper & pen etc.,

xii. FEES AND ACADEMIC PURPOSES

These items take into account the expenditure on academic matters, which includes various fees, educational tours or visits tools or tools box etc.,

xii. PRE ADMISSION

This is new term used to denote the expenditure incurred by students to attend interview etc., in connection with the admission into the institutions. This is considered an expenditure on education as it is an academic item of expenditure relating to the students education.

Educational costs are determined by those determinants that are closely related to the technology employed by education and policy pertaining to payment, development and utilization of resources employed. Further the educational demand; factor, cost of education, educational revenues, foreign aid and inflation also exert their influence on the cost of education.
3.5 METHODOLOGY

3.5.1 INTRODUCTION

Research involves gathering information pertaining to the objectives of the research study, from relevant people or entities study. Researcher has used all possible tools and techniques, which could bring better results for analyzing the problem of socio-economic conditions and institutional support for students of higher education in Tiruchirappalli.

Survey research is a procedure in which information is systematically collected from a population through some forms of direct solicitation such as face to face interview, administering Questionnaire. The advantage of survey method is thoroughly and deeply in all aspects.

3.5.2 POPULATION FOR THE STUDY

The population for the present study consist the students who are studying in the college of Arts and Science in Tiruchirappalli, which are the affiliated to Bharathidasan university, Tiruchirappalli. Financial supporting institutions of both private and public sector are selected randomly in Tiruchirappalli for providing educational loan to the students for their higher studies.

3.5.3 SAMPLE FOR THE STUDY

Great care was taken to make the sample more representative of the population. Sample was selected by Restricted Random Sampling. Taking into consideration the heterogeneity in higher education / organization cluster sampling technique has been employed.

In cluster sampling, the population again is subdivided into subgroups termed cluster instead of strata. The term cluster means a bunch of similar things.

Questionnaire was circulated among 600 students, which was two percent of the total number of the students enrolled in selected colleges in Tiruchirappalli.
Interview method has been employed to collect data from various banks about educational loans. Secondary data has been collected from selected seven colleges viz.. two government and five government aided in Tiruchirappalli educational expenditure among the colleges and financial aid rendered by the government to the students.

3.5.4 SOURCES OF DATA

The study is equally based on both primary and secondary data. The primary data has been collected from the students through well-structured questionnaire from twelve colleges viz.. Two government colleges, six government aided colleges and four unaided colleges were selected for questionnaire detailed with the students and from banks that form a vital part of the higher education system. Secondary data has been collected from the colleges viz.. Two government. and five government aided colleges with different official and non-official records. Use of existing literature has been made to support the factual data. It includes standard works on the subjects, various reports, research surveys, periodical, magazines, Department of Statistics, and other governmental organizations, journals and articles, electronic sources and from financial institutions etc..

3.5.5 STUDY AREA

Tiruchirappalli is the central part of Tamil Nadu surrounded by many arts and science colleges and professional colleges. The study area is a developing district in which pupils are benefited by a lot of facilities like accommodations, library, global education, transport and moderate expenditure etc., Tiruchirappalli is filled with high educated pupils who hail from poor and highly motivated family background and who aspire to prove their skills in all fields including education. When higher learning pupils are put together, they tend to spend a lot of money on their daily activities. The researcher got insight on all these activities, to conduct the survey on socio economic condition of the students, growth on higher educational institutions in this district and the most supportive factor i.e. financial
sectors (banks). The researcher puts forth her attempts and efforts to seek out the economic status of students and financial position of educational institutions in Tiruchirappalli area.

3.5.6 TOOLS FOR DATA COLLECTION

Before starting the survey work, the sample was equipped with different types of tools and techniques available for the collection of data in unbiased manner. The questionnaire circulated to the respondents regarding personal details of respondent, family background, educational status, institutional expenses, personal expenses studies, and financial aids by colleges, financial difficulties, motive in education etc., and the secondary sources of ten years data from 1997-98 to 2006-07 collected from the various selected seven college office in Tiruchirappalli on recurring expenditure and scholarship details. The data collected from the respected selected banks on higher education loan furnished towards aspiring students are gathered for analysis.

3.5.7 PILOT STUDY

The pilot study was conducted by the researcher in Tiruchirappalli. From the study the researcher has been exposed to the area and motivated to conduct research on selected colleges in Trichy. Based on sample survey method, data were collected from the sample colleges and from students.

3.5.8 STATISTICAL TOOLS USED

In the study hypotheses wise analysis of data has been done. Different percentage analysis has been done to study the socio economic conditions and institutional support for students of higher education in Tiruchirappalli.

The data were collected, analysed and interpreted with the statistical tools like rank, chi-square, ANOVA, Multiple Regression to derive the meaningful results at the appropriate places. The statistical package SPSS - 17.0 were used.
**Percentage Analysis**

After calculating mean, standard deviation the scores were converted into T scores with the help of the formula,

\[ T = 50 + 10z \]

Where, \( z = \) raw score – mean / standard deviation

The levels are fixed as follows.

**Table 3.1**

<table>
<thead>
<tr>
<th>50 + 10z</th>
<th>Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above mean +1S.D</td>
<td>Highly satisfied/ satisfied</td>
</tr>
<tr>
<td>Between mean ±1 S.D</td>
<td>Neutral</td>
</tr>
<tr>
<td>Below mean -1S.D</td>
<td>Dissatisfied/ highly dissatisfied</td>
</tr>
</tbody>
</table>

**Chi Square Analysis**

Chi square analysis test is applied in statistics to test the goodness of fit to verify the distribution of observed data with assumed theoretical distribution.

\[ \chi^2 = \sum \frac{(O - E)^2}{E} \]

Where,

\[ \chi^2 = \text{Chi-square} \]

\[ O = \text{Observed frequencies} \]

\[ E = \text{Expected frequencies} \]

**Multiple Regression Analysis**

In multiple regression, the dependent variables is a function of more than one independent variables. The generalized form is

\[ Y_1 = \beta_1 + \beta_2 X_{21} + \beta_3 X_{31} + \ldots + \beta_k X_{ki} + U_i \]

In the matrix form, the multiple regression model is

\[ Y = X \beta + U \]
**Scatter Diagram**

When the distribution is plotted on a graph in its ungrouped form, we get a diagram which is known as scatter diagram.

**ANOVA (ANALYSIS OF VARIANCE)**

Analysis of variance has been used to find out the difference among the variables.

\[
F = \frac{\text{Mean square variance between groups}}{\text{Mean square variance within groups}}
\]